



MAHARASHTRA NATURAL GAS LIMITED
(MNGL)


(A JOINT VENTURE OF GAIL (India) Limited & BPCL)

**CNG & CITY GAS DISTRIBUTION
FOR PUNE**

**TENDER DOCUMENT FOR ANNUAL RATE CONTRACT
FOR SUPPLY, INSTALLATION, TESTING,
COMMISSIONING, OPERATION AND COMPREHENSIVE
MAINTENANCE OF 1200 SCM/H GAS ENGINE DRIVEN
CNG 3-STAGE COMPRESSOR PACKAGES**

**UNDER OPEN DOMESTIC
COMPETITIVE BIDDING
(THROUGH E-TENDERING MODE)**


Bid Document No.: MNGL/CP/2022-23/215

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|  MAHARASHTRA NATURAL GAS LIMITED | TENDER FOR ANNUAL RATE CONTRACT FOR SUPPLY, INSTALLATION, TESTING, COMMISSIONING, OPERATION AND COMPREHENSIVE MAINTENANCE OF 1200 SCMH GED CNG 3-STAGE COMPRESSOR PACKAGES Bid No.: MNGL/CP/2022-23/215 |
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SECTION I

INVITATION FOR BIDS (IFB)

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|  <p>MAHARASHTRA NATURAL GAS LIMITED</p> | <p>TENDER FOR ANNUAL RATE CONTRACT FOR SUPPLY, INSTALLATION, TESTING, COMMISSIONING, OPERATION AND COMPREHENSIVE MAINTENANCE OF 1200 SCMH GED CNG 3-STAGE COMPRESSOR PACKAGES</p> <p>Bid No.: MNGL/CP/2022-23/215</p> |
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|  <p>MAHARASHTRA NATURAL GAS LIMITED</p> | <p>TENDER FOR ANNUAL RATE CONTRACT FOR SUPPLY, INSTALLATION, TESTING, COMMISSIONING, OPERATION AND COMPREHENSIVE MAINTENANCE OF 1200 SCMH GED CNG 3-STAGE COMPRESSOR PACKAGES</p> <p>Bid No.: MNGL/CP/2022-23/215</p> |
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**OPEN DOMESTIC COMPETITIVE BID
(THROUGH E-TENDERING MODE)**

**NOTICE FOR INVITATION OF BIDS (IFB)
FOR**

**ANNUAL RATE CONTRACT FOR SUPPLY, INSTALLATION, TESTING,
COMMISSIONING, OPERATION AND COMPREHENSIVE MAINTENANCE OF 1200
SCMH GAS ENGINE DRIVEN CNG 3-STAGE COMPRESSOR PACKAGES**

1.0 INTRODUCTION

1.1 Maharashtra Natural Gas limited ('MNGL') (hereinafter referred as Purchaser), is supplying Piped Natural Gas (PNG) to domestic, commercial and Industrial consumers and Compressed Natural Gas (CNG) to automobiles in the State of Maharashtra, Karnataka & Telangana. MNGL is in the process of increasing its compression capacity for CNG distribution.

2.0 BRIEF DESCRIPTION OF PROJECT

2.1.1 The present project is to increase CNG Compression & Distribution Capacity in Pune in the State of Maharashtra by augmenting its existing facilities and by installing new CNG stations. It is proposed to procure the goods as per details furnished in this Bid documents.

3.0 BRIEF SCOPE

3.1 SUPPLY PORTION


Scope includes Design, Engineering, Manufacturing, Assembly, Inspection, Supply, Transportation, unloading at MNGL Site/Store, Installation, Testing & Commissioning and Performance Acceptance Test of Online CNG Compressors under annual rate contract, as mentioned below:

| SI. No. | ITEM DESCRIPTION | TOTAL QTY |
|---------|---|------------------------------|
| 1 | GAS ENGINE DRIVEN CNG 3-STAGE COMPRESSOR OF 1200 SCMH CAPACITY | 10 Nos. (PUNE GA) |

3.1.1 Capacity as per the specifications and other details given in Volume II of II of respective part, including Supply of Erection and Commissioning spares as required.

3.1.2 The Compressors are to be dispatched in lots as defined in clause no. 5 below.

3.1.3 Installation, testing, commissioning and Performance Acceptance Test of each compressor package after intimation from MNGL.

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3.2 OPERATION AND COMPREHENSIVE MAINTENANCE PORTION

- 3.2.1 Operation Services during Warranty Period & four years after Warranty period.
- 3.2.2 Comprehensive Maintenance Services during Warranty Period & four years after Warranty period inclusive of consumables and Spares (including services for major overhaul of Engine and Compressor).
- 3.2.3 Bidder must quote for complete quantity and scope of work i.e. Supply, Installation, Testing, Commissioning, Performance Acceptance Test, Operation & Comprehensive Maintenance. Bid submitted for partial scope of any part shall be rejected.

4.0 TYPE AND DURATION OF CONTRACT

- 4.1 Rates will be firm and fixed during the contract period.
- 4.2 Supply of Compressors: The duration of contract shall be One (01) year from the date of issuance of PO/LOA/NOTIFICATION OF AWARD.
- 4.3 Operation & Comprehensive Maintenance: The duration for comprehensive maintenance shall be five (05) years (1 year during warranty and 04 years post warranty).

5.0 SCHEDULE FOR SUPPLY OF STORES / WORKS

Delivery of compressors shall be in lots. All Compressors shall be supplied & commissioned as per schedule given below.


5.1 Supply:

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 following:

Delivery basis to be on FOT store / site basis.

| Sl. No. | Item Description | Completion Period |
|---------|---|---|
| I | Design, Engineering, Testing, Supply (FOT Site basis) Including packaging forwarding, transportation, Custom clearance etc. | 3 (Three) Months from date of written intimation / Delivery Order by MNGL |

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5.2 Service Portion

| Sr. No. | Description | Quantity | Completion Period |
|---------|--|----------|--|
| 1 | Erection, Testing & Commissioning of 1200 SCMH Gas Engine Driven Reciprocating Compressors at site | 10 Nos. | Within 10 days from the date of intimation by MNGL for each compressor package |

5.3 After commissioning of compressor package, Performance Acceptance Test will be carried out as per terms and conditions.

5.4 For applicability of PRS calculation, date of Lorry Receipt (LR) shall be considered as date of delivery.

6.0 BID VALIDITY

6.1 Bid should be valid for 4 (Four) Months from the last date of bid submission.


7.0 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.mnql.in.

Note: To participate in the e-tendering, it is mandatory for the bidders to have user ID & password. For this purpose, the bidder has to register itself on CPPP's website <https://etenders.gov.in/eprocure/app>. Please also note that the bidder has to 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 have to be submitted online in electronic form on <https://etenders.gov.in/eprocure/app> only. No physical bids will be accepted.)

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8.0 DETAILS OF BID DOCUMENTS

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| Tender document number | MNGL/CP/2022-23/215 dated 02.03.2022 |
| ITEM(S) | Annual Rate Contract for Supply, Installation, Testing, Commissioning, Operation & Comprehensive Maintenance of 1200 SCMH Gas Engine Driven CNG 3-Stage Compressor Packages for CGD Project of MNGL, Pune |
| TYPE OF BID | Open Domestic Competitive Bidding |
| TIME SCHEDULE | As per Sr. No. 5 above |
| EARNEST BIDSECURITY | MONEY/ Rs.2,00,000/- in the form of Demand Draft/BG to be in favor of "Maharashtra Natural Gas Ltd." payable at Pune . Account Details for NEFT / RTGS for EMD: Name of the Beneficiary: M/s Maharashtra Natural Gas Limited 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 bid due date |
| TENDER FEE ((Non-refundable) | Not applicable |
| BID VALIDITY | 4(four) months from the bid due date |
| Pre-bid meeting date and time | 10.03.2023, 15:00 Hrs. |
| Bid submission due date and time | 23.03.2023 till 15:00 Hrs. IST |
| Bid Submission at | https://etenders.gov.in |
| Techno-commercial bid opening date and time | 24.03.2023 at 16:00 Hrs. IST |
| Price bid opening date and time | Date and time shall be intimated later |
| Address for submission of EMD/Bid Security and venue for pre-bid meeting and opening of bids | Chief Manager (C&P) C&P Department, Maharashtra Natural Gas Limited, Pride Purple Coronet, 2 nd Floor, Baner Road, Baner, Pune – 411045 |
| Contact details | Telephone: +91 (20) 25611000/1190/1157 Email: gasaid@mngl.in / manan.gupta@mngl.in |
| 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.

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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.

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 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 letter-head that the contents of the bidding document have not been altered or modified. Bid evaluation criteria shall be applicable for 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 to visit the website will not be accepted as a reason for any gap / missing information like corrigenda, amendments, clarifications etc.

9.0 BID SECURITY

Bid Security/EMD is applicable. Same shall be submitted as per clause no. 18 of ITB.

10.0 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 at following e-mails:
gasaid@mngl.in, manan.gupta@mngl.in

Note: Tender no. & subject should be in 'subject' of the e-mails sent.

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 subsequent to the pre-bid meeting.

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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 have to 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. Subsequent to pre-bid meeting, corrigendum shall be issued by the purchaser regarding clarifications or queries raised during meeting.

11.0 BID EVALUATION CRITERIA (BEC)

A. TECHNICAL:

1. The Bidder shall have the single point responsibility for manufacturing / packaging, supplying, installing and commissioning of Gas Engine Driven CNG Compressor Package. The Bidder shall submit undertaking for single point responsibility for manufacturing / packaging supplying, installing, commissioning and comprehensive O&M of CNG online Gas Engine Driven compressors.
2. The Bidder shall be a regular manufacturer / authorized supplier / authorized service provider of Gas Engine Driven CNG Compressor Package. The Bidder shall submit following documents:

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- i) In case of Original Equipment Manufacturer (OEM), confirmation on their letterhead stating that they are a manufacturer of CNG GED compressors in line with the specification mentioned in the tender.
- ii) In case of Authorized Supplier / Authorized Service Provider, a valid authorization letter on the letter head of OEM showing the name of the Bidder as their Authorized Supplier / Authorized Service Provider for executing the entire tender and giving reference no. of the tender & name of the tender. The authorization shall be valid for 6 (Six) months beyond contract tenure of the tender.


3. The Bidder in last seven years , reckoned from the submission of bid date, must have designed, engineered, manufactured / packaged, tested, supplied & commissioned in India from the proposed facility of manufacturing / packaging at least 05 Nos. 1200 SCM or higher capacity to the proposed package in terms of type of Compressor (i.e. Reciprocating Hydrocarbon Gas Compressor), size of equipment (i.e. Shaft Power, Compressor Capacity, Discharge Pressure) and type of driver i.e. Gas Engine and which have completed the continuous trouble free operation for minimum 8000 hrs. as on the bid due date.

The Bidder shall provide copies of detailed Purchase Order, approved technical data sheet / inspection certificate, release note from Client / Consultant, Performance certificate from Client indicating year of supply, number of packages and date when minimum 8000 hours have been clocked.

4. The Bidder must have full-fledged service support setup in India to provide the Operation & Maintenance Service.

The Bidder shall submit following on their letter-head:

- i) Details of present service set up
 - ii) List of manpower to be made part of service set up for Maharashtra Natural Gas Ltd. (MNGL) for handling maintenance activities.
 - iii) Self-declaration for deploying the required manpower for meeting MNGL's requirement.
5. The Bidder must confirm willingness to provide their data address and protocol for automation and Supervisory Control and Data Acquisition (SCADA) integration. The Bidder shall submit confirmation on their letter head stating that necessary data address and protocol will be submitted along with QAP (Quality Assurance Plan), drawing approval and also whenever demanded by MNGL

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B. FINANCIAL CRITERIA:

B.1 Turnover

The bidder should have achieved a minimum annual turnover of **Rs.14.0 Crores** in any one of the last 3 (three) audited financial years i.e., 2019-20, 2020-21 & 2021-22.

B.2 Net worth

Net worth must be positive as per last audited financial statement i.e. for the year 2021-22.

B.3 Working Capital


The bidder should have a minimum working capital of **Rs.2.80 Crores** as per latest audited balance sheet i.e., for the year 2021-22. If the bidder's working capital is inadequate, the bidder should supplement this with a letter from bidder's bank, having net worth not less than Rs.100 crores, confirming the availability of line of credit to cover the inadequacy of previous year and meet the current working capital requirement.

Bidders must submit documentary evidence such as balance sheet & Profit & Loss A/c Statement for last three audited financial years i.e., 2019-20, 2020-21 & 2021-22 in support of the above.

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

12.0 GENERAL

- 12.1** Purchaser (MNGL) reserves the right to increase or decrease the scope of work of bidders before or after award of work
- 12.2** Purchaser reserves the right to place the order for part quantity.
- 12.3** Bid document is non-transferable.
- 12.4** Bids through Hardcopy/ Fax / E-mail shall not be accepted.
- 12.5** Owner will not be responsible for cost incurred in preparation and submission of bids.

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12.6 Owner reserve the right to reject any or all the bids received at its discretion without assigning any reason whatsoever. MNGL also reserves the right to cancel the tender without assigning any reason whatsoever.

12.7 Contact details of owner is given below:

Chief Manager (C&P)
C&P Department,
Maharashtra Natural Gas Limited,
Pride Purple Coronet, 2nd Floor,
Baner Road, Baner,
Pune – 411045
Telephone: +91 (20) 25611000
Email: gasaid@mngl.in, manan.gupta@mngl.in

13.0 Mandatory Requirement:

1. As per Government Guidelines (Department of Public Enterprises vide OM no. dated DPE/7(4)/2017-Fin.(Part-I) dated 30.07.2020 forwarded department of Expenditure's OM No. F.6/18/2019-PPD dtd. 23.07.2020 and Order (Public Procurement No. 1) Dtd. 23.07.2020, Order (Public Procurement No. 2) Dtd. 23.07.2020, Order (Public Procurement No. 3) Dtd. 24.07.2020 imposing restrictions under Rule 144 (xi) of General Financial Rules (GFRs), 2017 on grounds of Defence of India and National Security for Compliance.
2. Accordingly, any bidder which is required to comply with requirements of provisions mentioned above would require registration with the Competent Authority constituted by the Department for Promotion of Industry and Internal Trade (DPIIT). Bidder to submit Undertaking as per Attachment-I of IFB.

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Attachment 1

UNDERTAKING ON LETTERHEAD

To,
M/s Maharashtra Natural Gas Limited,
Pride Purple Coronet, 2nd Floor,
Baner Road, Baner,
Pune – 411045

Sub:

Tender No:

Dear Sir,

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:


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SECTION II

INSTRUCTIONS TO BIDDERS (ITB)

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|  <p>MAHARASHTRA NATURAL GAS LIMITED</p> | <p>TENDER FOR ANNUAL RATE CONTRACT FOR SUPPLY, INSTALLATION, TESTING, COMMISSIONING, OPERATION AND COMPREHENSIVE MAINTENANCE OF 1200 SCMH GED CNG 3-STAGE COMPRESSOR PACKAGES</p> <p>Bid No.: MNGL/CP/2022-23/215</p> |
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A. INTRODUCTION

1.0 SCOPE OF BID

- 1.1 The Purchaser invites bids through e-tendering mode for **SUPPLY, INSTALLATION, TESTING, COMMISSIONING, OPERATION AND COMPREHENSIVE MAINTENANCE OF 1200 SCMH GAS ENGINE DRIVEN CNG 3-STAGE COMPRESSOR PACKAGES FOR ANNUAL RATE CONTRACT** as mentioned in the tender documents.
- 1.2 The bid document specifies the contractor scope of work, terms and conditions.
- 1.3 All terms, conditions and specifications of the bidding document shall be construed as applicable in general, unless specifically indicated to the contrary.
- 1.4 Bidders shall quote in the manner as specified in the bidding document. Owner reserves the right to evaluate and accept bids at their sole discretion. The provisions of this clause shall supersede any contrary provisions expressly stated or implied anywhere else in the bidding document.
- 1.5 The successful Bidder (the "Supplier") shall complete delivery of Goods along-with services (if any as per tender) as per Specification, Scope of Supply/Job, Special Conditions of Contract within the period stated in tender/ bid documents.
- 1.6 Throughout the Bid Documents,
 - a. The terms 'Bid', 'Tender' & 'Offer' and their derivatives [Bidder/ Tenderer, Bid/ Tender/ Offer etc.] are synonymous.
 - b. 'Day' means 'Calendar Day'
 - c. The singular shall include the plural and vice versa wherever the context so requires.

2.0 ELIGIBLE GOODS AND SERVICES AND ORIGIN OF GOODS

- 2.1 All goods and related services to be supplied under the contract shall have their origin only in source countries, which are not prohibited to trade with by any law or rules made there under having the force of law of the Union of India or any state Government of India.
- 2.2 For purposes of this clause, "Origin" means the place where the goods are mined, grown, or produced, or the place from which the related services are supplied. Goods are produced when, through manufacturing, processing, or substantial and major assembly of components, a commercially recognized product results that is substantially different in basic characteristics or in purpose or utility from its components.
- 2.3 The origin of goods and services need not be from the home country of the Bidder.

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2.4 Acceptance of goods in deviation to specified specifications

Normally goods with deviation from requisite specifications will not be accepted. However, in exceptional circumstances, it may be accepted, at sole discretion of MNGL, where the goods are of superior specification.

3.0 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 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.

3.4 The provisions mentioned at clause no. 3.1 herein above shall not be applicable wherein bidders are quoting for different Items / Sections / Parts / Groups/ SOR items of the same tender which specifies evaluation on Items / Sections / Parts / Groups / SOR items basis.

4.0 SITE VISIT

4.1 The bidder is advised to visit and examine the site of works and its surroundings and obtain for himself at his own responsibility all information that may be necessary for preparation of the bid and entering into the Contract. The cost of visiting the site shall be at bidder's own expenses.


4.2 The bidder and any of his personnel or Agents will be granted permission by the Owner to enter upon his premises and lands for the purpose of such inspection, but only upon the explicit condition that the bidder, his personnel or agents will release and indemnify the Owner and his personnel and agents from and against all liability in respect thereof and will be responsible for personnel injury (whether fatal or otherwise), loss of or damage to property and any other loss, damage, cost and expenses incurred as a result thereof.

5.0 COST OF BIDDING

5.1 The Bidder shall bear all costs associated with the preparation and submission of its bid, and the Purchaser will in no case be responsible or liable for those costs, regardless of the conduct or outcome of the bidding process.

6.0 NON-TRANSFERABILITY OF THE BID DOCUMENTS

6.1 Bid document is non-transferable.

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B. THE BID DOCUMENTS

7.0 CONTENT OF BID DOCUMENTS

7.1 The Goods required, bidding procedures, and contract terms are prescribed in the bid documents. In addition to the Invitation for Bids (IFB), the bid document includes:

- Volume I Commercial Section consisting of:
- Invitation for Bids (IFB)
- Instructions to Bidders (ITB)
- General Conditions of Contracts (GCC)
- Special Conditions of Contracts (SCC)
- Forms and Formats
- Schedule of Rates (SOR)
- Volume II –Material Requisition, Technical Specifications, etc


7.2 The Bidder is expected to examine all instructions, forms, terms, and specifications in the bid documents. The Bid Documents together with all its attachment thereto and Corrigendum (if any), shall be considered to be read understood and accepted by the bidder. Failure to furnish all information required by the bid documents or to submission of a bid not substantially responsive to the bid documents in every respect will be at the Bidder's risk and may result in the rejection of its bid.

8.0 CLARIFICATION ON BID DOCUMENTS

8.1 A prospective Bidder requiring any clarification of the bid documents may notify the Purchaser 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 two (02) working days before the pre-bid meeting date. Written copies of the Owner's response (including an explanation of the query but not necessarily identifying the source of inquiry) will be hosted on websites enlisted at sl. No. 8 in IFB along with the corrigendum, if required, before the bid due date (not through the minutes of the Pre-Bid Meeting). All such clarifications issued shall deem to form a part and parcel of the Bid documents.

8.2 Any clarification or information required by the Bidder but same not received by the Employer/ PMC by way of above is liable to be considered as "no clarification / information required".

8.3 The Bidder shall submit their queries / clarifications to MNGL in the format available in tender.

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9.0 AMENDMENT OF BID DOCUMENTS

- 9.1 At any time prior to the deadline for submission of bids, the Owner / Consultant, for any reason, whether at its own initiative or in response to a clarification requested by a prospective bidder, may modify the bid documents by issuing addenda and or Corrigendum.
- 9.2 Any addendum / corrigendum / clarifications to bidders query thus issued shall be part of the bidding documents and shall be hosted on websites enlisted at sl. No. 8 in IFB before bid due date. Bidders desirous to submit its bid have to take into consideration of all the addenda / corrigenda / clarifications to bidders query hosted on the above websites before submitting the bid.
- 9.3 Bidders are advised to visit e-tendering website from time to time to get updated information / documents.
- 9.4 In case of any inconsistency between an addendum and this tender document, the addendum shall prevail and in similar case between two or more addenda, the last issued addendum shall prevail.
- 9.5 The Purchaser may, at its discretion, extend the bid due date in order to allow prospective bidders, a reasonable time to furnish their most competitive bid taking into account the addenda / corrigenda issued.


C. PREPARATION OF BIDS

10.0 LANGUAGE OF BID

- 10.1 The Bid prepared by the bidder, all correspondences and documents relating to the bid exchanged by the bidder and the Owner, shall be written in the English language only. Any printed literature furnished by the bidder may be written in another language, provided that this literature is accompanied by an English translation, in which case, for purpose of interpretation of the Bid, the English translation shall govern.
- 10.2 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 along with the bid.
- 10.3 In exceptional cases, the English translation authenticated by Indian High Commission / Consulate may be accepted at sole discretion of MNGL.

11.0 DOCUMENTS CONSTITUTING THE BID

- 11.1 The bid prepared by the bidder shall comprise of the following components that are required to be provided/uploaded on E-tendering portal.

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11.1.1 Scanned documents (duly signed by the authorized signatory) to be uploaded by the bidder on the portal as per list appended to this tender document named “DOCUMENTS TO BE UPLOADED ON E-TENDER PORTAL”.

11.1.2 Techno-commercial information by the bidder in the specified format on the e-tender portal (reference checklist of TECHNO-COMMERCIAL SHEET appended to this tender document)

11.1.3 Price bid SOR as per prescribed format on the e-tender portal. (for reference, format is provided at Section – “Schedule of Rates”)

Note:

- i) All pages of the bid offer to be signed and stamped by an authorised representative (as describe in bid document) of the bidder.
- ii) 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.
- iii) **Prices if received in Unpriced Bid shall not be considered for evaluation and bid shall be summarily rejected.**

12.0 BID FORM

The Bidder shall complete all the Bid Forms attached in Section-V of bid document and submit the same as a part of “Techno-Commercial Un-priced bid “as per clause no. 21 of ITB.


In two part bidding as specified in IFB, Bidder shall furnish bid in two parts, the first part will contain all bid forms with related documents, SOR without prices and bid security but not the price schedule, the second part will contain price schedule, each such part being furnished on e-tendering website <https://etenders.gov.in> as per instructions for bid submission available in the tender/ e-tendering website.

13.0 BID PRICES

13.1 The Bidder shall indicate in the appropriate Price Schedule the unit prices and total bid price of the goods & services it proposes to supply under the contract.

13.2 Bidder shall indicate the following in the Schedule of Rates,

- i) Basic Unit rate including Packing, Forwarding & transportation charges and all taxes & duties except GST for each quoted SOR line item
- ii) Re-transportation charges for compressors at MNGL stores located in respective location (excluding GST).
- iii) Unit rate for Installation, Erection and Commissioning (excluding GST)

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- iv) Unit Rate for Operation charges (excluding GST)
- v) Unit rate for Comprehensive Maintenance charges (excluding GST)
- vi) GST on above i), ii), iii), iv) & v)
- viii) Bidders to indicate HSN/SAC Code & % of GST applicable in un-priced SOR.

Note:

Anti-profiteering clause: As per Clause 171 of GST Act, it is mandatory to pass on the benefit due to reduction in rate of tax or from input tax credit to the consumer by way of commensurate reduction in prices. The Supplier may note the above and quote their prices accordingly.

14.0 PRICE VARIATION

- 14.1 It is a Rate contract. Rates will be firm and fixed during the contract period.

15.0 BID CURRENCY

- 15.1 Bidders shall submit bid in Indian Rupees only.

16.0 DOCUMENTS ESTABLISHING BIDDER'S ELIGIBILITY AND QUALIFICATION

- 16.1 Pursuant to ITB, the Bidder shall furnish, as part of its bid, documents establishing the Bidder's eligibility to bid and its qualifications to perform the contract if its bid is accepted.

- 16.2 The documentary evidence of the Bidder's qualifications to perform the contract if its bid is accepted shall establish to the Purchaser's satisfaction:

- that the Bidder has the financial, technical, and production capability necessary to perform the contract;
- that the Bidder meets the qualification criteria stipulated in the Tender.


17.0 DOCUMENTS ESTABLISHING GOOD'S ELIGIBILITY AND CONFORMITY TO BID DOCUMENTS

- 17.1 Pursuant to ITB, the Bidder shall furnish, as part of its bid, documents establishing the eligibility and conformity to the bid documents of all goods and services which the Bidder proposes to supply under the contract.

- 17.2 The documentary evidence of the eligibility of the goods and services shall consist of a statement in the Price Schedule of the country of origin of the goods and services offered and a certificate of origin (for goods other than that of Indian origin) issued at the time of shipment shall confirm the same.

- 17.3 Wherever appropriate the documentary evidence of conformity of the goods and services to the bid documents may be in the form of literature, drawings, and data, and shall consist of:

- detailed description of the essential technical and performance characteristics of the goods;
- an item-by-item commentary on the Purchaser/ Consultant's Technical Specifications demonstrating substantial responsiveness of the goods

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and services to those of the specifications, or a statement of deviations and exceptions to the provisions of the Technical Specifications.

- 17.4 For purposes of the commentary to be furnished pursuant to ITB above, the Bidder shall note that standards for workmanship, material, and equipment, as well as references to brand names or catalogue numbers designated in the Technical Specifications, are intended to be descriptive only and not restrictive.

18.0 BID SECURITY


- 18.1 Pursuant to the provisions of IFB and ITB, the Bidder shall furnish, as part of its bid, a bid security in the amount specified in the Tender.
- 18.2 The bid security is required to protect the Purchaser against the risk of Bidder's conduct, which would warrant the security's forfeiture.
- 18.3 Bid security/EMD against e-tender can be submitted either through online e-payment mode or in the form of Bank Guarantee (BG) or Demand Draft (DD) or Banker's cheque (BC) or Letter of Credit from any Nationalized/ Scheduled Indian Bank or by the branch of a reputable international bank located in India as per proforma attached in the Tender document. Bid security in the form of Bank Guarantee shall be valid for sixty (60) days beyond the validity of the bid (of 4 months).

In case of DD or BC, the same should be in favour of MAHARASHTRA NATURAL GAS LIMITED payable at Pune.

To enable the bidders to utilize online transaction option, Bank details of MNGL are specified in Sl. No. 8 of IFB above.


Bidder is required to upload the successful Transaction Details along with their e-bid. In case of online transaction, submission of EMD in original is not applicable.

- 18.4 Non-submission of EMD (in form of BG/ DD/ BC/ Letter of Credit in physical form) to purchaser's office as mentioned in IFB may render the bid liable for rejection.
- 18.5 Any bid not secured in accordance with ITB Clauses may be treated as non-responsive and rejected.
- 18.6 Original Bid Security in the form of BG/ DD/ BC/ Letter of Credit shall be submitted sealed in an envelope clearly superscribing "Bid Security – Original" along with the name and address of bidder, tender subject, tender document number and shall be addressed to the address given in Section-IFB. If the

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envelope is not sealed and marked as above, the Purchaser will assume no responsibility for the misplacement of the EMD and its consequential rejection.

- 18.7 Earnest Money Deposit so paid will be refunded to the unsuccessful bidders after the award of work. For bidders who have submitted their EMD through any of the e-payment mode, refund of the EMD amount shall be made to the account as mentioned in their profile on the e-tender portal.
- 18.8 The successful Bidder's bid security will be discharged upon such Bidder accepting the award and furnishing the performance security and confirmation of the same (from issuing bank).
- 18.9 The bid security may be forfeited, if:
- The bidder withdraws its bid during the period of bid within its validity; or
 - The bidder revises / modifies their bids suo moto affecting the bid requirement; or
 - The bidder does not accept the LOA/PO/Contract; or
 - Execution of job has not started as per timelines defined in tender document; or
 - It is established that bidder has indulged in corrupt and fraudulent practice or have submitted forged documents the bid security shall be forfeited in addition to other action like putting the vendor on holiday after following the due process; or
 - The bidder does not accept the correction of errors; or
 - The bidder fails to furnish "Contract Performance Guarantee / Security Deposit", in accordance with tender conditions, upon award.
- 18.10 **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.**
- 18.11 Bidders submitting their EMD in the form of BG/DD/ BC/ Letter of Credit have to upload a scanned copy of the same on the e-tender portal. During bid opening, any bid uploaded without such scanned copy shall be summarily rejected. Bidders submitting bid security in the form of BG/DD shall submit the same in physical form within 7 working days from the date of bid opening, failure of which may render the bid liable for rejection. Bidders are required to submit EMD in a separate sealed envelope super scribing the tender number and that it contains EMD.
- Working days shall be arrived after considering Five (5) days working in a week at MNGL's office & any gazetted holiday in Pune.

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18.12 In case of forfeiture of EMD/ Bid Security, the forfeited amount will be considered inclusive of tax and tax invoice will be issued by MNGL. The forfeiture amount will be subject to final decision of MNGL based on other terms and conditions of order/ Contract.

18.13 EMD / Bid Bond will not be accepted in case the same has reference of 'remitter' / 'financer' other than bidder on the aforementioned financial instrument of EMD / Bid Bond submitted by the bidder and bid of such bidder will be summarily rejected.

19.0 PERIOD OF VALIDITY OF BIDS

19.1 Bids shall remain valid for 4 (Four) Months after the date of bid submission prescribed by the Purchaser and will reject the bid having shorter validity period as non-responsive.

19.2 In exceptional circumstances, the Purchaser may request the Bidder for an extension of the period of validity. The request and the responses thereto shall be made in writing. The bid security provided under ITB shall also be suitably extended. A Bidder may refuse the request without forfeiting its bid security. A Bidder granting the request for extension of its bid validity will not be required nor permitted to modify its bid.

20.0 AGENTS IN INDIA

20.1 Deleted


D. SUBMISSION OF BIDS

21.0 INSTRUCTION FOR ONLINE BID SUBMISSION

21.1 The bidders are required to submit soft copies of their bids electronically on the Central Public Procurement (CPP) Portal i.e. <http://etenders.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.

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- (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.

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 a number of 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 take into account corrigendum if any published before submitting their bids.


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After selecting the tender document same shall be moved to the 'My favourite' folder of bidders 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 option which helps 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 in order 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.

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- (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.

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- (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.
- (ii) 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

22.0 DEADLINE FOR SUBMISSION OF BIDS

- 22.1 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.
- 22.2 The EMD (if applicable) in physical form must be received by Owner (MNGL) at the address as specified in IFB but not later than the time and date as specified in IFB. The Owner may, in exceptional circumstances and at its discretion, on giving reasonable notice by fax or any written communication to all prospective bidders who have been issued the bid document extend the deadline for the submission of bids in which case all rights and obligations of the Owner and bidders, previously subject to the original deadline will thereafter be subject to deadline as extended.
- 22.3 No bids shall be allowed to be submitted after the due date and time on the E-tender portal, in any case whatsoever. In case the bidder has not clicked the Final Submission button till the due date and time, the bid will automatically be rejected by the e-tender portal and such bid will be considered non-submitted.

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23.0 LATE BIDS

- 23.1 Bidders have to upload scanned copy of their document towards EMD (Declaration for Bid Security/ EMD (if in the form of BG)/ Exemption certificate, as applicable), on the e-tender portal. During bid opening, any bid uploaded without such document toward EMD shall be summarily rejected.
- 23.2 Bidders submitting EMD in the form of BG/ DD/ BC/ Letter of Credit (if applicable) have to ensure that the same in physical form reaches MNGL's office within 7 working days from the date of bid opening. Failing to do so may render the bid to be considered as Late Bid. Such bid shall not be considered for further evaluation.
- 23.3 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.

24.0 MODIFICATION AND WITHDRAWAL OF BIDS

- 24.1 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.

Note:


In case bidder wants to modify its bid, the bidder should not click on 'Withdraw' button. Please note that upon clicking withdraw button, bidder will not be allowed to participate in that tender again. 'Withdraw' button is only meant for the case when bidder needs to withdraw their participation from a specific tender.

- 24.2 No bid can be modified after the deadline for submission of bid.
- 24.3 No bid shall be allowed to 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. Withdrawal of a bid during this interval shall result in the bidder's forfeiture of its bid security (if applicable), pursuant to clause 18 of ITB or other actions as per tender conditions.


E. OPENING AND EVALUATION OF BIDS

25.0 OPENING OF BIDS BY THE PURCHASER/CONSULTANT

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

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- 25.2 The Bidder's names bid modifications or withdrawals, and the presence or absence of requisite Bid Security (EMD) and such other details as the Owner, at its discretion, may consider appropriate, will be announced at the opening. No bid shall be rejected at bid opening, except for late bids, which shall be later returned unopened to the concerned Bidder pursuant to ITB Clause 23.
- 25.3 Bids (and modifications sent pursuant to ITB Clause 24) 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 Owner/ Consultant any documents pertaining to its bid is not being acknowledged and relevant portions read out.
- 25.4 The Owner/ Consultant will prepare a bid opening statement to be signed by all representatives present during bid opening, if so required by the Purchaser.
- 26.0 CLARIFICATION OF BIDS**
- 26.1 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.
- 26.2 During evaluation of the bids, the Owner / Consultant may, at its discretion, if required, ask the Bidder for a clarification of its bid. The request for clarification and its response shall be through the e-tendering portal only, and no change in the prices or substance of the bid shall be sought, offered, or permitted.
- 27.0 PRELIMINARY EXAMINATION**
- 27.1 The Purchaser/Consultant will examine the bids to determine whether they are complete and meets the "Bid Evaluation Criteria" of the Bidding Documents, whether required sureties have been furnished, whether the documents have been properly signed and whether the bids are generally in order.
- 27.2 The Purchaser/Consultant may waive any minor informality, nonconformity, or irregularity in a bid which does not constitute a material deviation, provided such waiver does not prejudice or affect the relative ranking of any Bidder.
- 27.3 Purchaser reserves the right to not to open the bids of those bidders with whom purchaser experience with regard to performance of any earlier contract/ equipment has been found to be lacking.
- 27.4 Prior to the detailed evaluation, pursuant to ITB, the Purchaser/Consultant will determine the substantial responsiveness of each bid to the bidding documents. For purposes of these Clauses, a substantially responsive bid is one, which

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conforms to all the terms and conditions of the Bid Documents without deviations.

27.5 If a bid is not substantially responsive, it will be rejected by the Purchaser/Consultant and shall not subsequently be made responsive by correction of the nonconformity by the Bidder.

27.6 CONFIDENTIALITY

During Bid Process: Information relating to the examination, clarification, evaluation, and comparison of Bids, and recommendations for the award of a Contract, shall not be disclosed to any person(s) not officially concerned with such process.

27.7 CONTACTING THE EMPLOYER

From the time of Bid opening to the time of award of Contract, if any Bidder wishes to contact the Employer on any matter related to the Bid, it should do so in writing.


Any effort by the Bidder to influence the Employer in the Employer's 'Bid Evaluation', 'Bid Comparison', or 'Contract Award' decisions may result in the rejection of the Bidder's Bid and action shall be initiated as per procedure in this regard.

28.0 REJECTION CRITERIA

28.1 Minor unconformities may be neglected and/or bidders may be required to rectify such minor unconformities.

28.2 Any deviation/unconformity on following conditions will result in summarily rejection of the bid:

- (i) Bid security (EMD) i.e. non-submission along with bid offer or bid security (EMD) not complying with the bid requirements, if applicable.
- (ii) Submission of contract performance bank guarantee as per tender.
- (iii) Period of validity of bid.
- (iv) Firm & fixed prices throughout execution of contract.
- (v) Specifications.
- (vi) Delivery/ Completion schedule.
- (vii) Resolution of dispute/ arbitration clause.
- (viii) Schedule of Rates / Price Schedule in other than prescribed format or with insertion of any condition(s).
- (ix) Price Reduction Schedule.
- (x) Force Majeure.
- (xi) Applicable laws.
- (xii) Scope of work.
- (xiii) Guarantee / Warranty/ Defect Liability Period.
- (xiv) Disclosure of prices in unpriced bid.

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- (xv) If the estimated price impact of the unquoted items is more than 10% of the bidder's quoted price.
- (xvi) Non-submission of declaration regarding Holiday Listing status.
- (xvii) Quoting Comprehensive Maintenance charges less than or more than, as prescribed in clause no 21 of SCC.
- (xviii) Any modification in SOR and Guaranteed parameters (Annexure I) in the submitted bid offer.
- (xix) If any cell in Guaranteed parameters (Annexure I of Volume II of II) is left blank.
- (xx) Any other condition specifically mentioned in the tender document elsewhere that non-compliance of the clause lead to rejection of bid.

Note: Bidders are advised to submit their bids in strict compliance with the specifications and other stipulations as per tender terms and conditions. Bidders are advised not to stipulate deviations.

29.0 OPENING OF PRICE BID

29.1 The Bidders who meet the qualification requirement and whose bids have been 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 of 24 hours. The place, date and time of price bid opening will be informed to all such bidders. The Bidders' authorized representatives who are present shall sign a register evidencing their attendance.

29.2 The bid prices and discounts, if any stated in the price schedules will be announced during price bid opening.

30.0 CONVERSION TO SINGLE CURRENCY

30.1 Deleted


31.0 EVALUATION AND COMPARISON OF PRICES

31.1 The Purchaser will evaluate and compare the bids which have been determined to be substantially responsive.

31.2 Prices shall be evaluated on "overall basis" including GST quoted, to arrive at the lowest evaluated cost (L1) to Purchaser. Bidder must quote against all the items of quoted part(s), failing which bid shall be liable for rejection.

31.3 The evaluated price of bidders shall include the following:

| Sl. No. | 1200 SCM Gas Engine Driven Compressors |
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| i) | Total value for supply of compressor, air compressor, tools & tackles and string test including Packing, Forwarding & transportation charges and re-transportation charges. |
| ii) | Total value towards Installation, Erection and Commissioning, |

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| | performance acceptance test (PAT) |
| iii) | Total value towards Operation |
| iv) | Total value towards Comprehensive Maintenance |
| v) | GST on above (i), (ii), (iii) & (iv) |
| vi) | Technical loading towards gas loss and gas consumption as defined in tender document. |


31.4 Ranking of bidders i.e. L1, L2, L3 & L4 shall be decided based on total evaluated price as defined in Clause no. 31.3 above. The lowest evaluated price for complete SOR shall be considered as L-1 price.

31.5 Award shall be made to L-1 bidder for 100% work.

Note: In case of tie for L-1 bidder, the order shall be placed on the bidder having highest turnover during the preceding 3 financial years i.e. 2019-20, 2020-21 & 2021-22.

Note to clause no. 31.0:

- Prices if received in Unpriced Bid Envelope / Cover-1 shall not be considered for evaluation and bid shall be summarily rejected.
- Prices are to be submitted strictly as per the Schedule of Rate of the bidding documents; MNGL shall not be responsible for any failure on the part of the bidder to follow the instructions.
- Bidders are advised NOT to mention Rebate/Discount separately, either in the SOR format or anywhere else in the offer. In case Bidder(s) intend to offer any Rebate/ Discount, they should include the same in the item rate(s) itself under the "Schedule of Rates (SOR)" and indicate the discounted unit rate(s) only.
- If any unconditional rebate has been offered in the quoted rate, the same shall be considered in arriving at evaluated price. However, no cognizance shall be taken for any conditional discount for the purpose of evaluation of the bids.
- In case, it is observed that any of the bidder(s) has/have offered suo-moto Discount after submission of bid, such reduction/ discounts shall not be considered for evaluation. However, in the event of the bidder emerging as the lowest evaluated bidder without considering the discount/ rebate(s), then such discount/ rebate(s) offered by the bidder shall be considered for Award of supply/ work and the same will be conclusive and binding on the bidder.
- In the event as a result of techno-commercial discussions or pursuant to seeking clarifications / confirmations from bidders, while evaluating the un-priced part of the bid, any of the bidders submits a sealed envelope stating that it contains revised prices; such bidder(s) will be requested to withdraw the revised prices failing which the bid will not be considered for further evaluation.
- **Tenders not in Prescribed Forms**

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If quotations are received from the party in their own format instead of on the prescribed format against the tender, such quotations may not be considered for evaluation.

31.6 CORRECTION OF ERRORS

Bids determined to be substantially responsive will be checked by the Employer for any arithmetic errors. Errors will be corrected by the Employer as follows:

Discrepancy between unit price & total price: If there is a discrepancy between the unit price and the total price, which is obtained by multiplying the unit price and quantity of any item or between sub-total and the total price, the unit or sub-total price shall prevail, and the total price shall be corrected. If there is a discrepancy between words and figures, the amount in words will prevail.

The amount stated in the bid will be adjusted by the Employer in accordance with the above procedure for the correction of errors. If the bidder does not accept the corrected amount of bid, its bid will be rejected, and the bid security shall be forfeited.

32.0 CONTACTING THE PURCHASER/ CONSULTANT

32.1 From the time of bid opening to the time of contract award, if any Bidder wishes to contact the Purchaser/ Consultant on any matter related to the bid, it should do so in writing.

32.2 Any effort by a Bidder to influence the Purchaser/ Consultant in its decisions on bid evaluation, bid comparison, or contract award may result in the rejection of the Bidder's bid.


F. AWARD OF CONTRACT

33.0 POST-QUALIFICATION

33.1 In the absence of pre-qualification, the Purchaser/Consultant will determine to its satisfaction whether the Bidder that is selected as having submitted the lowest evaluated responsive bid is qualified to perform the contract satisfactorily, in accordance with the criteria listed in ITB.

33.2 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, as well as such other information as the Purchaser/Consultant deems necessary and appropriate.

33.3 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.

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34.0 AWARD CRITERIA

- 34.1 The Purchaser will award the contract to the successful Bidder(s) 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.
- 34.2 In case of a tie at the lowest bid (L1) position between two or more bidders, the order/LoA will be placed on the bidder who has higher/ highest turnover in the preceding 3 financial years i.e. 2019-20, 2020-21 & 2021-22.

35.0 DELETED

36.0 PURCHASER'S RIGHT TO VARY QUANTITIES


- 36.1 The quantity mentioned in SOR is for obtaining the unit rates and evaluation purpose. The Purchaser reserves the right at the time of contract award or during tenancy of contract to increase or decrease the quantity of goods and services originally specified in the Schedule of Requirements without any change in unit price or other terms and conditions.

37.0 PURCHASER'S RIGHT TO ACCEPT OR REJECT ANY OR ALL BIDS

- 37.1 The Purchaser reserves the right to accept or reject any bid in full or part, to annul the bidding process and reject all bids at any time prior to contract award, without thereby incurring any liability to the affected Bidder or Bidders. Purchaser also reserves the right not to accept lowest rates quoted by the bidder.

38.0 NOTIFICATION OF AWARD


- 38.1 Prior to the expiration of the period of bid validity, the Purchaser will notify the successful Bidder in writing by LOA (Letter of Acceptance) or registered letter or by e-mail that its bid has been accepted.
- 38.2 The date of LOA (Letter of Acceptance) for notification of award will be effective date of start of contract.
- 38.3 The bidder shall promptly, but not later than Seven (7) days of notification of award shall furnish its acceptance of notification of award and submit the Contract-Cum-Equipment Performance Bank guarantee pursuant to ITB & SCC Clause within period stipulated for the same.
- 38.4 The Purchaser will discharge the bid security of unsuccessful Bidders as early as possible.
- 38.5 LOA read in conjunction with bid documents shall be binding on Bidder.

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39.0 CONTRACT CUM EQUIPMENT PERFORMANCE BANK GUARANTEE

- 39.1 Bidder shall furnish the Contract Cum Equipment Performance Bank Guarantee (CPBG) in accordance with the bid document, in the Format provided in the bid document. The bank guarantee shall be in the same currency as of Letter of award / Contract.
- 39.2 Bidder shall be required to submit Contract-Cum-Equipment Performance Bank Guarantee (CPBG) in the form of Bank Guarantee (BG) or Demand Draft (DD), issued by a nationalized bank or a scheduled Indian bank or by the branch of a reputable international bank located in India or by an international reputed bank from abroad provided in that case, the guarantee is confirmed through any bank as above located in India. In case of foreign bank which is not a scheduled bank in India, a Bank Guarantee issued by such bank shall be required to be counter guaranteed by a scheduled bank incorporated in India and registered with Reserve Bank of India.
- 39.3 The successful bidder can also submit the Security Deposit/ Contract Performance Guarantee through online banking transaction i.e. IMPS/NEFT/RTGS etc. For this purpose, the details of MNGL's Bank Account is mentioned in IFB. While remitting, the bidder must indicate "Security Deposit/ Contract Performance Guarantee against FOA/DLOA/PO no. _____ (contractor/ vendor to specify the FOA/DLOA/PO No.)" under remarks column of respective bank portal. The contractor/vendor shall be required to submit the successful transaction details to the dealing officer immediately through email/letter and necessarily within 30 days from the date of Notification of award.
- 39.4 Further, the bidder can submit CPBG on line through issuing bank to MNGL directly as per Ministry of Finance (MOF) Department of financial service direction vide letter ref number F.No.7/112/2011-BOA dated 17th July 2012. In such cases confirmation will not be sought from issuing banker by MNGL.
- 39.5 In case of forfeiture of Contract Performance Security/ Security Deposit, the forfeited amount will be considered inclusive of tax and tax invoice will be issued by MNGL. The forfeiture amount will be subject to final decision of MNGL based on other terms and conditions of order/ contract.
- 39.6 CPBG / Security Deposit will not be accepted in case the same has reference of 'remitter' / 'financer' other than bidder on the aforementioned financial instrument of CPBG / Security Deposit submitted by the Supplier / Contractor / Service Provider.

Refer SCC for CPBG applicable for this tender.

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40.0 CORRUPT OR FRAUDULENT PRACTICES

40.1 It is required that all concerned in the entire procurement process to observe the highest standard of ethics during the said process. In pursuance of this policy, the Purchaser/Consultant:

- (a) defines for the purposes of this provision, the terms set forth below as follows:
 - (i) “corrupt practice” means the offering, giving, receiving 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 Borrower, 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 Borrower 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, either indefinitely or for a stated period of time, to be awarded a Bank-financed contract if it at any time determines that the firm has engaged in corrupt or fraudulent practices in competing for, or in executing, a Bank financed contract.

40.2 Furthermore, Bidders shall be aware of the provision stated in General Conditions of Contract (GCC).


41.0 ELIGIBLE BIDDERS

41.1 The bid received from bidders put on Black / Holiday list by MNGL / MoP&NG / Oil PSE (s), shall not be considered.

41.2 The Bidder should not be under any liquidation, court receivership or similar proceedings on Due Date of Bid Submission.

41.3 In case there is any change in status of the declaration prior to award of contract, the same has to be promptly informed to MNGL by the bidder.

It shall be the sole responsibility of the bidder to inform MNGL in case the bidder is under any liquidation, court receivership or similar proceedings on Due Date of Bid Submission and during the course of finalization of the tender. Concealment of the facts shall tantamount to misrepresentation of facts and shall lead to action against such Bidders as per tender conditions.

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41.4 Power of Attorney:

Power of Attorney to be issued by the bidder in favour of the authorised employee(s), in respect of the particular tender, for purpose of signing the documents including bid, all subsequent communications, agreements, documents etc. pertaining to the tender and act and take any and all decision on behalf of the bidder (including Consortium, if allowed to bid in the tender). Any consequence resulting due to such signing shall be binding on the Bidder (including Consortium).

(I) In case of a Single Bidder, the Power of Attorney shall be issued as per the constitution of the bidder as below:

- a) In case of Proprietorship: by Proprietor
- b) In case of Partnership: by all Partners or Managing Partner
- c) In case of Limited Liability Partnership: by any bidder's employee authorized in terms of Deed of LLP
- d) In case of Public / Limited Company: PoA in favour of authorized employee(s) by Board of Directors through Board Resolution or by the designated officer authorized by Board to do so. Such Board Resolution should be duly countersigned by Company Secretary / MD / CMD / CEO.

(II) In case of a Consortium (if allowed to bid in the tender), Power of Attorney shall be issued both by Leader as well as Consortium Member(s) of the Consortium as per procedure defined herein above in favour of employee of Leader of Consortium.

The Power of Attorney should be valid till award of contract / order to successful bidder.


41.5 The authorized employee(s) of the Bidder shall be signing the Bid and any consequence resulting due to such signing shall be binding on the Bidder.

41.6 Bids shall be evaluated as per Bid Evaluation Criteria (BEC) as provided in IFB Section.

42.0 SINGLE POINT RESPONSIBILITY

42.1 The bidder shall submit bid on single point sole/prime bidder responsibility basis. Bidder shall therefore not submit offer on consortium or joint bid basis. Bids submitted by Joint venture/ Consortium shall be summarily rejected.

42.2 The sole (prime) bidder alone (in whose name the bid document has been issued) will have single point responsibility for all contractual purposes and will be over all responsible for complete execution of the contract as per scope, terms & conditions defined in the Bid Document.

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42.3 The status of all the other vendor(s)/collaborator(s), (if any), referred/identified by the bidder in their offer shall be that of bidder's sub-vendor/supplier/sub-contractor.

43.0 MENTIONING OF PAN NO. IN INVOICE/BILL


43.1 As per CBDT Notification No. 95/2015 dated 30.12.2015, mentioning of PAN no. is mandatory for procurement of goods/services/works/consultancy services exceeding Rs. 2 Lacs per transaction. MNGL's PAN No. is AAECM5536G.

Accordingly, service provider should mention their PAN no. in their invoice/ bill for any transaction exceeding Rs. 2 lakhs. As provided in the notification, in case service provider do not have PAN no., they have to submit declaration in Form 60 along with invoice/ bill for each transaction.


Payment of supplier/ contractor / service provider/ consultant shall be processed only after fulfilment of above requirement.

44: PROCUREMENT 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.

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- IV. "Bidder from a country which shares a land border with India" for the purpose of this:
- An entity incorporated, established or registered in such a country; or
 - A subsidiary of an entity incorporated, established or registered in such a country; or
 - An entity substantially controlled through entities incorporated, established or registered in such a country; or
 - An entity whose beneficial owner is situated in such a country; or
 - An Indian (or other) agent of such an entity; or
 - A natural person who is a citizen of such a country; or
 - 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 (4) will be as under:
- 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—
 - "Controlling ownership interest" means ownership of, or entitlement to, more than twenty-five per cent of shares or capital or profits of the company.
 - "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.
 - 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.
 - 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.
 - 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.
 - 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.

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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. SUBMISSION OF CERTIFICATE IN BIDS: Bidder shall submit a certificate in this regard as Form-I to Section-II. 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.

VIII. 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.

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SECTION III

GENERAL CONDITIONS OF CONTRACT (GCC)


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GENERAL CONDITIONS OF CONTRACT

1.0 DEFINITIONS

- 1.1 All the initial capitalised terms used in the Agreement shall have the meaning as ascribed to such term hereunder:
- (a) **‘Agreement’ or ‘Contract’** means the agreement entered into between the Purchaser / Owner and the Supplier, including all attachments and appendices thereto and all documents incorporated by reference therein, as modified, reinstated or amended from time to time.
 - (b) **‘Completion Schedule’ or ‘Delivery Schedule’** means a schedule approved by the Owner for completion of all obligations of the Supplier under the Agreement.
 - (c) **‘Contract Documents’** mean all the documents referred to in the Agreement for discharging the requisite obligations by respective party.
 - (d) **‘Contract Price’** means the price payable to the Supplier under the Contract for the full and proper performance of all its contractual obligations.
 - (e) **‘Day’, ‘Month’ or ‘Year’** means calendar day, calendar month or calendar year.
 - (f) **‘Engineer In-charge’** means an authorized representative of the Purchaser / Owner, if any, to which the Purchaser / Owner has entrusted various tasks in relation to the carrying out of his Project and in particular the implementation of the relevant Agreement. The Engineer is fully empowered to represent the Purchaser / Owner. For avoidance of doubt, Consultant may be an Engineer. In case the Agreement does not specify the intervention by the Engineer, the rights and obligations are exercised and borne by the Purchaser / Owner, mutatis mutandis.
 - (g) **‘Effective Date’** means a date on which Supplier’s obligations will commence and thereupon Delivery Schedule and/or Completion Schedule will be drawn up.
 - (h) **‘Goods’** means all of the equipment, machinery, and/or other materials which the Supplier is required to supply to the Purchaser / Owner under the Agreement.
 - (i) **‘GCC’** means the General Conditions of the Contract contained in this section.
 - (j) **‘Inspector’** means any person or outside Agency nominated by Purchaser / Owner to inspect equipment, stage wise as well as final, before despatch, at Supplier’s works and/or on receipt at Site as per terms of the Agreement.
 - (k) **‘Notification of Award’** means date which is earlier of either a Fax of Intent (FOI) or Letter of Intent (LOI) or Purchase Order (PO) or Letter of Award (LOA) issued to a successful bidder for award of the work pursuant to bidding process.
 - (l) **‘Purchaser’ or ‘Owner’** shall mean Maharashtra Natural Gas Ltd. (MNGL), a company incorporated in India having its registered office at Plot No.27, A Block, 1st Floor, PMPML Bus Depot Commercial Building, Shivajinagar, Pune – 411005, India. The term OWNER includes its successors & assigns.
 - (m) **‘Services’ or ‘Ancillary Services’** means those services ancillary to the supply of the Goods, such as transportation and insurance, and any other incidental services, such as installation, commissioning, provision of technical assistance,

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- training and other such obligations of the Supplier covered under the scope of the Agreement.
- (n) **‘Site’ or ‘Purchaser’s stores’** means the place or places named in tender document.
 - (o) **‘SCC’** means the Special Conditions of the Contract forming a part of the Contract Documents.
 - (p) **‘Supplier’ or ‘Seller’ or ‘Contractor’ or ‘Vendor’** means the individual person or firm or body corporate supplying the Goods and/or Services under the Agreement.
 - (q) **‘FOT’** – means that the Goods or supply items or services shall be delivered and done at site(s) warehouses or places mentioned by the Purchaser on FOT (Free on Terminal) basis.

2.0 APPLICATION


- 2.1 These General Conditions of Contract shall apply to the extent that they are not superseded by provisions of the Contract Agreement.

3.0 CONTRACTOR TO INFORM

- 3.1 The Contractor / Supplier / 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 Contractor / Supplier / Seller of his responsibility to fulfil his obligation under the Contract.

4.0 SCOPE OF CONTRACT

- 4.1 Scope of the CONTRACT shall be as defined in the Purchase Order / Contract specifications, drawings and Annexure thereto. For provisions not covered under the Purchase Order / Contract, provisions of General Conditions of Contract (GCC) and Special Conditions of Contract (SCC) of the tender document against which the Purchase Order / Contract has been placed shall prevail.
- 4.2 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.
- 4.3 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


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manner and supply the same in prescribed time to the entire satisfaction of Purchaser.

- 4.4 The Seller shall furnish 2 nos. copies in English language of Technical documents, final drawings, preservation instructions, operation and maintenance manuals, test certificates, spare parts catalogues for all equipment's to the Purchaser.
- 4.5 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.
- 4.6 All dimensions and weight should be in metric system.
- 4.7 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.
- 4.8 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.
- 4.9 Specifications, design and drawings issued to the Seller along with RFQ and Contract are not sold or given but loaned. These remain property of Purchaser / Consultant or its assigns and are subject to recall by Purchaser / Consultant. 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 / Consultant. All such details shall be kept confidential.
- 4.10 Seller shall pack, protect, mark and arrange for despatch of equipment as per instructions given in the Contract.

5.0 INTERPRETATION OF CONTRACT DOCUMENTS

- 5.1 Notwithstanding the sub-divisions of the contract documents into separate sections and volumes every part of each shall be deemed to be supplementary to and complementary of every other part and shall be read with and into the Contract so far as it may be practicable to do so.
- 5.2 Where any portion of the General Condition of Contract is repugnant to or at variance with any provisions of the Special Conditions of Contract then, unless a different intention appears the provisions of the Special Conditions of Contract

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shall be deemed to override the provisions of the General Conditions of Contract and shall to the extent of such repugnancy, or variations, prevail.

6.0 COUNTRY OF ORIGIN


- 6.1 For purpose of this Clause, 'origin' means the place where the Goods were mined, grown, or produced. Goods are produced when, through manufacturing, processing, or substantial and major assembly of components, a commercially recognized new product results that is substantially different in basic characteristics or in purpose or utility from its components.
- 6.2 The origin of Goods and services may be different from the nationality of the Supplier.

7.0 STANDARDS

- 7.1 The Goods supplied under this Agreement shall conform to the standards mentioned in the Technical Specifications and when no applicable standard is mentioned, to the authoritative standards appropriate to the Goods' in country of origin. Such standards shall be the latest issued by the concerned institution.

8.0 CONFIDENTIALITY

- 8.1 The Supplier cannot, without agreement of the Purchaser, disclose nor enable third parties to benefit from the documents drawn up in the course of his obligations under the Agreement or information received from the Purchaser / Consultant / Engineer / Inspector.
- 8.2 Further, Supplier is not allowed to publish copy or transmit to third parties the documents that are transmitted to him by Purchaser or Consultant or Engineer or Inspector. The Purchaser or Consultant retains the right to claim damages from the supplier in the case where these documents have been used without such written consent.
- 8.3 However, these obligations do not apply to documents for which it can be demonstrated that,
- ☐ Such documents were already public before these were communicated to the other party, or have become public since without any fault or negligence of the party concerned, or
 - ☐ Such documents were already in its possession without having obtained them directly or indirectly from the other party, or
 - ☐ Such documents were obtained from an independent source that had neither direct nor indirect secrecy commitment to the other party.

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- 8.4 Regarding the application of this clause, the experts appointed by the Purchaser / Engineer are not considered as third parties, and for this reason they have to respect, towards the Supplier, the same obligations as the Purchaser in these matters.
- 8.5 Any document, other than the Agreement itself as enumerated in GCC Clause 1.1 (a), shall remain the property of the Purchaser and shall be returned (all copies) to the Purchaser on completion of the Supplier's obligations under the Agreement.
- 8.6 The Seller shall not, without the Purchaser's / Consultant'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 as far as may be necessary for purpose of such performance.

9.0 CONTRACT OBLIGATIONS

- 9.1 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.
- 9.2 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.
- 9.3 Any neglect or omission or failure on the part of the Contractor in obtaining necessary and reliable information upon the foregoing or any other matters affecting the Contract shall not relieve him from any risks or liabilities or the entire responsibility from completion of the works at the scheduled rates and times in strict accordance with the Contract.
- 9.4 Any change in layout due to site conditions or technological requirement shall be binding on the Contractor and no extra claim on this account shall be entertained.

10.0 MODIFICATION IN CONTRACT

- 10.1 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 / Consultant 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

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performance of contract in any manner except to the extent mutually agreed through a modification of contract.

- 10.2 Purchaser / Consultant 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.

11.0 DELAYS BY OWNER OR HIS AUTHORISED AGENTS


- 11.1 In case the Contractor's performance is delayed due to any act or omission directly attributable to Owner or his authorized agents, then the Contractor shall be given due extension of time for the completion of the Work, to the extent such omission on the part of the Owner has caused delay in the Contractor's performance of his Work against written request by contractor and after Owner's verification.
- 11.2 No adjustment in Contract Price shall be allowed for reasons of such delays and extensions granted, except when contractor is requested by Owner to maintain the agreed time schedule of completion by engaging additional Contractor's personnel for additional time beyond stipulated working hours as also on Sundays and Holidays and achieve the completion date / interim targets.

12.0 PATENT RIGHTS

- 12.1 The Supplier shall alone bear the liability and costs of any prejudicial consequence of any infringement of all or part of the patents, industrial trademarks, designs and models relating to the Goods.

Therefore, the Supplier shall make the arrangements at his own expense with the holders and pay the royalties, obtain the necessary licenses and authorizations, failing which he agrees to modify the Goods to the extent needed to avoid any such infringement.

- 12.2 In case of legal action or proceedings for infringement against the Owner, the Supplier undertakes to:
- ☐ Stand up for the Owner in the defence of his rights and interests;
 - ☐ Save Purchaser harmless of any legal, financial and other consequences as may result to him from the legal action or proceedings;
 - ☐ Bear all the damages and interests as may be due to the holders of the patents, industrial trademarks, designs and models, in principal, costs and interests;
 - ☐ Reimburse to the Purchaser, at the Purchaser's first request, the costs of any nature whatsoever, including the fees of lawyers, experts and

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technical advisers, etc. incurred due to or on the occasion of the legal action or proceedings;

- To modify if need to be and without delay, the incriminated Goods / equipment, or have it replaced, free of charge, by equivalent Goods / equipment free of any infringement. Supplier alone shall bear all the costs, risks and liability that result thereof including the costs of dismantling, erecting, adapting or modifying such Goods/ equipment and starting up, etc.

12.3 In case of legal action or proceedings for infringement brought against the Purchaser, the Supplier has the right to participate in the Owner's defence. Any transaction with the third party in such cases shall be discussed and jointly agreed by the parties, wherever feasible.

12.4 The modifications to be brought to the Goods must have the prior consent of the Purchaser. This consent cannot in any way lessen the obligations of the Supplier that result from the present article, also in cases when new legal action or proceedings are initiated following the modifications that were made.

13.0 CONTRACT-CUM-EQUIPMENT PERFORMANCE BANK GUARANTEE


13.1 Within 21 days from the receipt of notification of award of the Contract / Purchase Order, the Seller shall furnish Performance Guarantee to the Purchaser in the form of Demand Draft or Bank Guarantee from any Nationalized / Scheduled bank, in the format provided in the Tender Document.

13.2 The performance guarantee shall be denominated in the currency of the Contract.

13.3 The Performance Bank Guarantee shall be valid for a duration of 90 days beyond the expiry of Contract period / Defect Liability Period / Warranty Period, whichever later. The claim period of the Performance Bank Guarantee (BG) shall be further one month beyond the validity of the BG. 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.


13.4 The CPBG shall be refunded after successful completion of the contract and after adjustment of any and all dues of the MNGL which may arise during the execution of the contract and a confirmation that contractor has cleared all its dues pertaining to the contract and all liabilities etc., in addition indemnifying MNGL against any future claims, if any.

13.5 The Company shall have the right to forfeit the security deposit in case of non-satisfactory performance of the contract.

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14.0 INSPECTIONS AND TESTS

- 14.1 The Supplier will submit to Purchaser the Quality Assurance Plan (QAP) regarding design, manufacture and testing of all the items required under the Agreement within 15 days of Notification of Award. Purchaser will then review the QAP and inform the Seller, the stages when the Purchaser / Inspector / Engineer would witness the tests and/or inspect the Goods under manufacturing, beyond which the progress of the specified activity / manufacturing will not proceed, without written approval. Such points during the progress of work under the Agreement shall be called as Customer Hold Points (CHP's)
- 14.2 The Seller will inform Purchaser fifteen (15) Days in advance for readiness of material for all such identified CHP's.
- 14.3 The Purchaser or its representative shall have the right to inspect and / or to test the Goods to confirm their conformity to the requirements of the Agreement at no extra cost to the Purchaser. SCC and / or the Technical Specifications shall specify what inspections and tests the Purchaser requires and to the extent feasible, where they are to be conducted. All costs for such inspections and tests except the cost of travel, boarding and lodging of the Purchaser's representative / Inspector shall be to the account of the Supplier. The Purchaser shall notify the Supplier in writing, in a timely manner, of the identity of any such representatives, (if outside of Purchaser's organisation) retained by it for these purposes.
- 14.4 The inspections and tests may be conducted on the premises of the manufacturer or Supplier or its sub-supplier(s), at point of delivery, and / or at the Goods' final destination. If conducted on the premises of the manufacturer or Supplier or its sub-supplier(s), all reasonable facilities and assistance, including access to drawings and production data, shall be provided by the Supplier to the inspectors at no charge to the Owner.
- 14.5 Should any inspected or tested Goods fail to conform to the Specifications, the Owner may reject the Goods, and the Supplier shall either replace the rejected Goods meeting the Specification requirements or make alterations necessary to meet Specification requirements free of cost to the Purchaser.
- 14.6 Nothing mentioned in this Inspection and Tests clause shall in any way release the Supplier from any warranty or other obligations under the Agreement.
- 14.7 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

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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 till the rejected materials are finally disposed-off.

15.0 ADDITIONAL TEST

- 15.1 The Purchaser can also request for additional tests which were not identified and specified in the QAP, but considers necessary to ensure the quality of the raw materials or of the manufacturer.
- 15.2 In any case, additional tests shall be designed so as to require a minimum of time. Provided further before starting these additional tests, the Supplier defines and justifies, to the Purchaser's satisfaction, the possible effects of the duration of these tests on the contractual time-limits / schedule(s).
- 15.3 The Supplier places at the disposal of the Purchaser, or of the chosen official or approved organization, the tools and/or items of general use, which belong to him as well as the staff necessary for the additional tests decided by the Purchaser.
- 15.4 Should these additional tests reveal unacceptable faults, taking into account the features asked for and the Specifications that entail the repair or rejection of the relevant item or components, the Supplier will be responsible of the ensuing delays, inasmuch as these tests have been made in the shortest possible time. He shall bear, in such case, any costs he has had to incur for the carrying out of the tests.
- 15.5 If, on the other hand, the additional tests do not reveal, in the opinion of the Purchaser, unacceptable faults as indicated above, the cost borne by the supplier for the carrying out of these tests will be invoiced to the Owner, after prior justification, and the Supplier may be entitled to reasonable extension of the time limit.

16.0 PACKING

- 16.1 The Supplier shall provide such packing of the Goods as is required to prevent their damage or deterioration during transit to their final destination, as indicated in the Agreement. The packing shall be sufficient to withstand, without limitation, rough handling during transit and tropical humid conditions as exposure to extreme temperatures, salinity and precipitation during transit, and open storage. Further the size and weights of the packing cases shall take into consideration,

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where appropriate, the remoteness of the Goods' final destination and the absence of heavy handling facilities at all points in transit.

- 16.2 The packing, marking and documentation within and outside the packages shall comply strictly with such special requirements as shall be expressly provided for in the Agreement, including additional requirements, if any, specified in the SCC, and in any subsequent instructions of the Purchaser.

17.0 DISPATCH INSTRUCTIONS


At least fifteen (15) Days before the expected dispatch date, the Supplier shall obtain authorization from the Purchaser / Consultant to go ahead with the dispatching, after ensuring compliance to other requirements of the Agreement.

18.0 DELIVERY AND DOCUMENTS

- 18.1 Delivery of the Goods shall be made by the Supplier in accordance with the Delivery Schedule specified in the Agreement. The details of shipping and/or other documents are to be furnished by the Supplier.
- 18.2 The delivery terms are binding and essential and consequently, no delay is allowed without the written approval of Purchaser / Consultant. Any request concerning delay will be void unless accepted by Purchaser / Consultant through a modification to the Contract.
- 18.3 Delivery time shall include time for submission of drawings for approval, incorporation of comments, if any, and final approval of drawings by Purchaser / Consultant
- 18.4 In the event of delay in delivery, Price Reduction Schedule shall apply.
- 18.5 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.
- 18.6 The Seller should comply with the Packing, Marking and Shipping Documentation Specifications enclosed.

19.0 TRANSPORTATION

- 19.1 Where the Supplier is required under the Scope of the Contract to transport the Goods to a specified place of destination or to Site, the Supplier shall transport to such place of destination or site, as the case may be, including insurance and storage, if required. The Contract Price will include costs of all such transportation.

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19.2 The Supplier shall select such carrier which could deliver the Goods in requisite time. In such case, Supplier shall be required to check (i) Age of the carrier; (ii) scheduled and actual maintenance; (iii) payment of relevant fees; (iv) pending claims, if any; (v) past accident records etc., so as to ensure safe and timely transportation of the Goods.

19.3 In case delay occurs for reasons not attributable to Purchaser alone, the Supplier shall, if directed by Purchaser, adapt a specific way of delivery of Goods (air freight or likewise) at destination, the additional cost which will be borne by the Supplier. If such specific way of delivery is required by Purchaser to pre-pone the deliveries, nevertheless, Supplier will arrange the same and difference of justified transportation charges will also be borne by the Purchaser.

19.4 Supplier has to make necessary arrangement to deliver and load/unload the Goods to MNGL designated sites at his own arrangement after intimation of erection, installation, testing and commissioning by the MNGL Engineer-In-charge.


20.0 GUARANTEE/ WARRANTY

20.1 The Supplier warrants that the Goods supplied under the Agreement are new, unused, of the most recent or current models and that they incorporate all recent improvements in design and materials unless provided otherwise in the Contract Documents. The Supplier further warrants that all Goods supplied under this Agreement shall have no defect, arising from design, materials, or workmanship (except when the design and / or material is required by the Purchaser's specifications and the Supplier has given his disclaimer of warranty obligations with respect to such requirement) or from any act or omission of the Supplier, that may develop under normal use of the supplied Goods in the conditions prevailing in the place of use / destination.

20.2 This warranty shall remain valid for at least twelve (12) months from the date of successful commissioning of individual equipment or Eighteen (18) Months after the date of last shipment whichever is earlier or as specified under the Special Conditions of Contract. However, if warranty period exceeds due to any defect observed in the equipment at site and the time taken in rectification and commissioning, the warranty will stand extended for at least another 12 months from the date of completion of rectification free of cost.

20.3 Bidder will assume responsibility for obtaining manufacturer's warranty for all bought out items and maintain sufficient stock of spares at each site to meet urgent requirements.

20.4 After the successful completion of Test run, Warranty phase will start and system taking over certificate shall be issued by the Owner.

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- 20.5 The Owner shall promptly notify the Supplier in writing of any claims arising under this warranty.
- 20.6 Upon receipt of such notice, the Supplier shall, within a reasonable period, repair or replace the defective Goods or parts thereof, free of cost to the Purchaser, deliver at the appropriate destination. The Supplier may take over the replaced parts / Goods at the time of their replacement. No claim whatsoever shall lie on the Purchaser for the replaced parts / goods thereafter. In the event of any correction of defects or replacement of defective material during the warranty period, the warranty for the corrected / replaced Goods or item or material shall be extended to a further period of twelve (12) Months from the date of such repair/replacement if put to use immediately or eighteen (18) Months.
- 20.7 If the Supplier, having been notified, fails to remedy the defect(s) within a reasonable period, the Purchaser may proceed to take such remedial action as may be necessary, at the Supplier's risk and expense and without prejudice to any other rights which the Purchaser may have against the Supplier under the Agreement.

21.0 LATENT DEFECT

If any latent defect (a defect which could not have manifested itself in the normal course of inspection and testing as per relevant codes, test procedures and contract specifications and normal usage as per industry practice will be referred to as latent defect) surfaces within five years of putting the Goods or parts thereof into operation, the Supplier shall repair or replace such Goods or parts, as the case may be, within technically reasonable period to the satisfaction of the Purchaser and without any additional liability on the Purchaser, whatsoever.

22.0 PAYMENT TERMS

- 22.1 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 fulfilment of other obligations stipulated in the Contract.
- 22.2 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 along with exchange rates used in such calculations these exchange rates shall be maintained.


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22.3 General Notes:

- (a) All foreign currency payments to foreign bidder shall be released through an irrevocable Letter of Credit, which shall be opened through Government of India Nationalised 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 Fax of Intent together with Performance Guarantee as applicable.
- (b) 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.
- (c) Payment shall be released within 45 days after receipt of relevant documents complete in all respects.
- (d) 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 bidder.
- (e) Unless otherwise specifically stated in bid document, all payments shall be made in the currency quoted.
- (f) No interest charges for delay in payments, if any, shall be payable by Purchaser.
- (g) In case of Indian bidder, variation, if any, on account of customs duty on their built-in-import content, as per terms of tender 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 tender document, shall be passed on to the Purchaser along with invoicing itself.
- (h) 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.

23.0 PRICES AND PRICE BASIS

Prices charged by the Supplier for Goods delivered and Services performed under the Agreement shall be on firm price basis and not vary from the prices quoted by the Supplier in its bid, with the exception of any price adjustments authorized in the tender document. Prices quoted by the Bidder, shall remain firm and fixed and valid until completion of the Contract and will not be subject to variation on any account except as per provisions of the tender document only.

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24.0 FALL CLAUSE

- 24.1 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, as the case may be, sells the materials of identical description to any Persons / Organizations including the Purchaser or any Department of the Central Govt. or any Department 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.
- 24.2 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 Department 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.
- 24.3 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.
- 24.4 The supplier shall furnish the following certificate to the concerned Paying Authority along with 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 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 Dept. of Central Govt. or any Deptt. of State Govt. or any Statutory Undertaking of the Central or State Govt. as the case may be upto the date of bill / during the currency of the order whichever is later, at a price lower than the price charged to MNGL under the order".

Such a certificate shall be obtained, except for quantity of items / goods / materials categories under exceptions mentioned above, of which details shall be furnished by the supplier.

25.0 ASSIGNMENT

The Supplier shall not assign, in whole or in part, any of its obligations to be performed under this Agreement to any third party, except with the Owner's prior written consent.


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26.0 SUB-CONTRACTING

- 26.1 The Supplier shall notify the Owner in writing of all subcontracts awarded under this Agreement if not already notified in the Supplier's bid and incorporated in the Agreement. Such notification and incorporation shall not relieve the Supplier from any liability or obligation under the Agreement. Such sub-contract shall be limited to certain bought-out items and sub-assemblies, which are not in line of Supplier's manufacturing or proposed manufacturing unit of authorized Supplier.
- 26.2 Such purchases and subcontracted items shall have to be necessarily in full compliance with the terms and conditions of the Agreement and do not relieve the Supplier of any of his contractual obligations. The Supplier shall be solely responsible for any action, deficiency or negligence of his sub-contractors.
- 26.3 For any subcontract, the Purchaser is entitled to demand from the Supplier, for approval of the list subcontractors the Supplier intends to involve and of the orders he may entrust to them. The Purchaser may further demand that proposals of competitors be produced for him to examine. Approval by the Owner cannot give rise to any legal bond between the Purchaser and the sub-contractors and leaves full responsibility only to the Supplier.
- 26.4 In the event where the warranty agreed between the Supplier and his sub-Suppliers exceeds in scope or in period those required under the Agreement, the Supplier undertakes to make the Purchaser the full and direct beneficiary of such warranty.

27.0 TIME SCHEDULE & PROGRESS REPORTING

- 27.1 Time Schedule Network / Bar Chart
- 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.
 - 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.
 - The original issue and subsequent revisions of Seller's time schedule shall be sent to Purchaser.
 - The time schedule network / bar chart shall be updated at least every second month.
- 27.2 Progress Trend Chart / Monthly Report
- Seller shall report monthly to Purchaser, on the progress of the execution of Contract and achievement of targets set out in time bar chart.


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- (b) The progress will be expressed in percentages as shown in the progress trend chart attached to the Time Schedule specification.
- (c) The first issue of the Progress Trend Chart will be forwarded together with the time bar chart along with Contract confirmation.

- 27.3 Purchaser's / Consultant'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.
- 27.4 Irrespective of such inspection, Seller shall advise Consultant, with copy to Purchaser, at the earliest possible date of any anticipated delay in the progress.
- 27.5 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 / Consultant 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 / Consultant 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 / Consultant, the Purchaser / Consultant 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 / Consultant shall not be responsible for any loss that the Seller may incur and Seller shall not be entitled to any gain. Purchaser / Consultant shall, in addition, have the right to encash Performance Guarantee in full or part.

28.0 DELAYS IN THE SUPPLIER'S PERFORMANCE

- 28.1 Delivery of the Goods and performance of Services shall be made by the Supplier in accordance with the time schedule prescribed by the Purchaser in the Delivery Schedule.
- 28.2 If at any time during performance of the Agreement, the Supplier or its subcontractor(s) encounters conditions impeding timely delivery of the Goods and performance of Services, the Supplier shall promptly notify the Purchaser in writing of the fact of the delay, its likely duration and its cause(s). As soon as practicable after receipt of the Supplier's notice, the Purchaser shall evaluate the situation and may at its discretion extend the Supplier's time for performance, with or without levy of Price Reduction Schedule, in which case the extension shall be ratified by the parties by amendment of Agreement.

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- 28.3 Except as provided under GCC Clause – “Force Majeure” or for the reasons solely attributable to the Purchaser, a delay by the Supplier in the performance of its delivery obligations shall render the Supplier liable to the imposition of Price Reduction Schedule (PRS) unless an extension of time is agreed upon pursuant to above sub-clause (ii) without the application of PRS.

29.0 PRICE REDUCTION SCHEDULE (PRS)

- 29.1 Time is the essence of the Contract. In case the Contractor fails to complete the Work within the Contractual Completion period, then, unless such failure is due to Force Majeure as defined herewith or due to Owner's defaults, the Contractor shall pay to the Owner, by way of compensation for delay and not as penalty, a sum @ ½% (half per cent) per complete week of delay of the value of the “supply portion for the quantity” OR “the work portion” that is delayed per complete week subject to maximum of 10% (Ten Per Cent) of the total contract value.
- 29.2 The parties agree that this is a genuine pre-estimate of the loss/damage which will be suffered on account of delay/breach on the part of the Contractor and the said amount will be payable on demand without there being any proof of the actual loss or damages caused by such delay/breach. The decision of Owner in regard to the actual delay shall be final and binding on the Contractor. All sums payable by way of compensation shall be considered as reasonable compensation without reference to the actual loss or damage which shall have been sustained.
- 29.3 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. 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.

30.0 TERMINATION FOR DEFAULT

- 30.1 Except for the cases provided for in Clause” Force Majeure”, if the Supplier fails to execute the work or any part thereof with such diligence as will ensure its completion within the time specified in the contract or extension thereof or fails to perform any of his obligation under the contract or in any manner commits a breach of any of the provisions of the contract it shall be open to the owner at its option by written notice to the supplier
- (a) TO DETERMINE THE CONTRACT in which event the Contract shall stand terminated and shall cease to be in force and effect on and from the date appointed by the Owner on that behalf, where upon the Contractor shall stop forthwith any of the Contractor's work then in progress, except

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such Work as the Owner may, in writing, require to be done to safeguard any property or WORK, or installations from damage, and the Owner, for its part, may take over the work remaining unfinished by the Contractor and complete the same through a fresh Contractor or by other means, at the risk and cost of the Contractor, and any of his sureties if any, shall be liable to the Owner for any excess cost occasioned by such work having to be so taken over and completed by the Owner over and above the cost as worked out in terms of the contract.

- (b) WITHOUT DETERMINING THE CONTRACT to take over the work of the Contractor or any part thereof and complete the same through a fresh Contractor or by other means at the risk and cost of the Contractor and any of his sureties are liable to the Owner for any excess cost over and above the cost as worked out in terms of the contract, occasioned by such works having been taken over and completed by Owner.

- 30.2 Before determining the Contract, provided in the judgment of the Owner, the default or defaults committed by the Contractor is/are curable and can be cured by the Contractor if an opportunity is given to him, then the Owner may issue notice in writing calling the Contractor to cure the default within such time specified in the notice.
- 30.3 The Owner shall also have the right to proceed or take action as per above, in the event that the Contractor becomes bankrupt, insolvent, compounds with his creditors, assigns the Contract in favour of his creditors or any other person or persons, or being a company or a corporation goes into voluntary liquidation, provided that in the said events it shall not be necessary for the Owner to give any prior notice to the Contractor.
- 30.4 Termination of the Contract as provided for above shall not prejudice or affect the rights of the Owner which may have accrued up to the date of such termination.

31.0 OWNER MAY DETERMINE / TERMINATE CONTRACT

- 31.1 Owner shall, at any time, be entitled to determine and terminate the Contract, in whole or in part for any cause whatsoever. A notice in writing from the Owner to the Contractor shall be issued giving 30 (Thirty) days' time for such determination including the reason thereof.
- 31.2 The Contractor upon receipt of such notice shall discontinue the Work on the date and to the extent specified in the notice, make all reasonable efforts to obtain cancellation of all orders and contracts to the extent they are related to works terminated and upon terms satisfactory to Owner, stop all further sub-contracting or purchasing activity related to the works terminated and assist the

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Owner in maintenance, protection and disposition of the works acquired under the Contract by the Owner.

32.0 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.

33.0 TERMINATION FOR OWNER'S CONVENIENCE

- 33.1 The Owner, by written notice sent to the Contractor, may terminate the Agreement, in whole or in part, at any time for its convenience. The notice of termination shall specify that termination is for the Owner's convenience, the extent to which performance of the Contractor under the Agreement is terminated, and the date upon which such termination becomes effective.
- 33.2 The Goods that are complete and ready for shipment / dispatch as on the date of Contractor's receipt of notice of termination shall be accepted by the Owner on the terms and prices mutually agreed at that time.
- 33.3 For the remaining Goods, the Owner may elect:
- (a) To have any portion completed and delivered at the Agreement terms and prices and / or
 - (b) To cancel the remainder and pay to the Contractor an agreed amount for partially completed Goods and Services and for materials and parts previously procured by the Contractor; and/or
 - (c) To pay any reasonable and demonstrable otherwise non-recoverable expenses incurred by the Contractor.
- 33.4 MNGL reserves the right to award the contract for a shorter duration than the specified or foreclose it with adequate advance notice not less than 30 days due to change in its business requirement.

34.0 FORCE MAJEURE

- 34.1 For purposes of this clause, 'Force Majeure' means an event beyond the control of the Supplier or Purchaser and not involving the Supplier's fault or negligence and not foreseeable, all having impact on the performance of the respective obligations as detailed hereinafter. Such events may include, but are not restricted to:
- a) War, whether declared or not, civil war, unrest and revolution, piracy, terrorism, sabotage;

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- b) Natural disasters such as tornadoes, earthquakes, tidal waves, floods, destruction by lightning, etc.
- c) Explosions, fires, destruction of machinery, plant and installations of any nature
- d) Arbitrary action, if any of the Government of India or a relevant State;
- e) Refusal by government authority of Government of India to grant the necessary permits needed to carry out the Agreement, provided such refusal is not the result of the doing of the parties.
- f) Boycotts, strikes and lock-outs of any nature, disruptive, occupation of plant and premises, work stoppages occurring at the premises of the party requesting to be relieved of its liability, so long such cause is not effected by such party's controlled administration or employees.

34.2 Should any one or more of the events referred to in this clause occur, affecting the performance of the obligations of either of the parties, under the Agreement, such party shall notify to the other party the existence of a cause for force majeure as soon as it has knowledge of such event but not later than fifteen (15) Days from such date the event has arisen. The notification shall contain the details regarding the nature, starting date, presumed end date, as well as the estimated effects of the case of force majeure or other cause of force majeure on the obligations of the party which has incurred the event.

34.3 As soon as the cause for exoneration has ended, the party, the performance of which has been affected shall notify, in writing, to the other party the precise date of the end of the cause of force majeure and the extent, with justification, to which it has actually been affected in the performance of its obligations. It adds to this statement the necessary certificates issued by an authorised entity.


34.4 Any case of force majeure suspends the carrying out of the obligations affected. However, the party which claims force majeure shall show every diligence towards reducing as much as feasible the effects thereof. It is exonerated only for the minimum period, which may (in no event exceed the period of existence of the force majeure itself) have actually occurred as a result of the force majeure.

34.5 The parties may request that the Agreement be deemed cancelled if it's carrying out has become totally impossible.

35.0 SETTLEMENT OF DISPUTES

35.1 The rules of procedure for arbitration proceedings shall be as per Indian Arbitration and Conciliation Act 1996 or as amended.

35.2 If any dispute or difference arising between the Parties in respect of or concerning or connected with the interpretation or implementation of this Agreement or otherwise arising out of this Agreement, the parties hereto shall


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promptly and in good faith negotiate with a view to bring out and amicable resolution and settlement.

- 35.3 If, after thirty (30) days, the parties have failed to resolve their dispute or difference by such mutual consultation, then either the Owner or the Supplier may give notice to the other party of its intention to commence arbitration, as hereinafter provided, as to the matter in dispute, and no arbitration in respect of this matter may be commenced unless such notice is given.
- 35.4 Maharashtra Natural Gas Limited will nominate three independent persons who can be the Sole Arbitrator and intimate the same to Vendor. The Vendor needs to choose one person from the said nominees as Sole Arbitrator. If Vendor fails to choose the arbitrator within thirty (30) days from receipt of a nomination by Maharashtra Natural Gas Limited, Maharashtra Natural Gas Limited will have right to choose the Sole Arbitrator.
- 35.5 The Arbitration proceedings shall be held in Pune and shall be conducted in English Language. The decision of such arbitration shall be binding and conclusive upon the Parties. The Parties to the arbitration shall equally share the costs and expenses of any such arbitration.
- 35.6 It is hereby clarified that the Courts at Pune alone shall have jurisdiction to try and entertain any and all suits or other proceedings in respect of, relating to or otherwise arising out of this Agreement.
- 35.7 Notwithstanding any reference to arbitration herein, the parties shall continue to perform their respective obligations under the Agreement unless they otherwise agree. The WORK under the CONTRACT shall continue during the Arbitration proceedings and no payment due or payable to the Seller shall be withheld on account of such proceedings.

36.0 LIMITATION OF LIABILITY

- 36.1 Except in cases of wilful negligence or wilful misconduct, and in the case of infringement, the Supplier shall not be liable to the Purchaser, whether in contract, tort, or otherwise, for any indirect or consequential loss or damage, loss of use, loss of production, or loss of profits provided that this exclusion shall not apply to any obligation of the Supplier to pay Price Reduction to the Purchaser and the aggregate liability of the Supplier to the Purchaser, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price, provided that this limitation shall not apply to the cost of repairing or replacing defective equipment.

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37.0 PUBLICITY AND ADVERTISEMENT

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

38.0 GOVERNING LANGUAGE

The agreement shall be written in English language unless specified otherwise in the SCC. All correspondence and other documents pertaining to the agreement which are exchanged by the parties shall be written in the same language. Printed literature in other language shall only be considered, if it is accompanied by an English translation. In case, any document/brochure etc. is written in any other language then its English translation shall govern.

39.0 APPLICABLE LAW


The Contract shall be governed and interpreted in accordance with laws of India and Courts at Pune shall have exclusive jurisdiction.

40.0 NOTICES

- 40.1 Any notice given by one party to the other pursuant to this Agreement shall be sent to the other party in writing by registered mail and confirmed in writing to the other party's address specified in the Agreement.
- 40.2 A notice shall be effective when delivered or on the notice's effective date, whichever is later.


41.0 TAXES, DUTIES AND LEVIES

- 41.1 The Contractor agrees to and does hereby accept full and exclusive liability for the payment of any and all Taxes, Duties now in force and hereafter increased, imposed or modified from time to time in respect of Works and materials and all contributions and taxes for unemployment compensation, insurance and old age pensions or annuities now or hereafter imposed by any Central or State Government authorities which are imposed with respect to or covered by the wages, salaries, or other compensations paid to the persons employed by the Contractor. The Contractor shall be responsible for the compliance with all obligations and restrictions imposed by the Labour Law or any other law affecting employer-employee relationship. The Contractor further agrees to comply and to secure the compliance of all Sub-Contractors with all applicable Central, State, Municipal and local law and regulation, and requirement of any central, State or Local Government agency or authority. Contractor further agrees to defend,

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indemnify and hold Owner harmless from any liability or penalty which may be imposed by the Central, State or Local authorities by reason of any violation by Contractor or Sub-Contractor of such laws, regulations or requirements and also from all claims, suits or proceedings that may be brought against the Owner arising under, growing out of, or by reason of the work provided for by this Contract, by third parties, or by Central or State Government authority or any administrative sub-division thereof.

- 41.2 Owner shall directly pay the Customs Duty and Tax to concerned Authorities in case of foreign bidders.
- 41.3 Owner shall make from contractor's bills such tax deductions as are required as per rules and regulations in force from time to time.
- 41.4 Bidder shall be entirely responsible for scope of work, all taxes, GST, license fees, any other duty on services or any other tax payable and/ or other levies etc. imposed by Central, state, municipal and local law and regulatory agency or authority. The rate in SOR is inclusive of all the above referred taxes/duties.
- 41.5 Any statutory variation in GST within the contractual period for the SOR items shall be to MNGL's account. However, in case the contractual completion period gets extended for reasons solely attributable to contractor, the statutory variation shall be limited to contractual completion period only.
- 41.6 Any new taxes & duties, if imposed by the State / Central Govt. of India after due date of bid submission but before the Contractual Delivery Date, shall be paid / reimbursed to the contractor on submission of copy of notification(s) issued from State / Central Govt. Authorities along with submission of documentary evidence for proof of payment of such taxes / duties to State / Central Govt. Authorities and after ascertaining it's applicability with respect to the contract.
- 41.7 Returns and details required to be filled under GST laws & rules should be timely filed by Supplier of Goods / Service Provider with requisite details to enable the Owner to avail tax credits including input tax credit. Payments to Service Provider claiming GST amount will be made provided the above formalities are fulfilled. Further, MNGL may seek copies of challan and certificate from Chartered Accountant of Supplier / Service Provider for deposit of GST collected from Owner. Any loss or nonavailability of input tax credit by the Owner due to non-compliance of applicable tax laws (including but not limited to GST laws in force or otherwise) or for any reason which is not attributable to MNGL, then MNGL shall not be obligated or liable to pay or reimburse GST charged in the invoice(s) and an amount equivalent to any tax liability accruing to the Owner and/or to the extent of any loss accrued to the Owner together with all penalties, costs, liabilities, dues, fees and interest if any, shall be deducted from the payment due to the Vendor or shall be reimbursed by the Vendor, as the case may be, till such

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default is either rectified or made good by the Vendor and the Owner is satisfied that it is in a position to claim valid input tax credit within the time-lines as per applicable laws.

41.8 Supplier of Goods / Service Provider providing taxable service shall issue an Invoice / Bill, as the case may be as per rules / regulation of GST. GST, if applicable, shall be paid after verifying GST Registration number. Each item's cost and GST as applicable shall be provided in all the invoices along with GST registration no. & HSN/SAC codes for the services provided.

41.9 In case of statutory variation in GST, other than due to change in turnover, payable on the contract value during contract period, the Supplier of Goods / Services (Service Provider) shall submit a copy of the 'Government Notification' to evidence the rate as applicable on the Bid due date and on the date of revision. In case GST is not applicable to the vendor at the time of Contract / Order placement, as per turnover criteria, GST due to change in turnover is not payable. If applicable in future, the same shall be borne by vendor.

In case of delay in completion period beyond the contractual date, for reasons attributable to contractor, any increase in these rates or any new taxes and duties introduced during the period beyond the contractual completion date shall be borne by the contractor, whereas any decrease shall be passed on to MNGL.


The base date for the purpose of applying statutory variation shall be the Bid Due Date.

41.10 Claim for payment of GST / Statutory variation, should be raised within two (02) months from the date of issue of 'Government Notification' for payment of differential GST, otherwise claim in respect of above shall not be entertained for payment of arrears.

41.11 Beyond the contract period, in case MNGL is not entitled for input tax credit of GST, then any increase in the rate of GST beyond the contractual delivery period shall be to Service Provider's account whereas any decrease in the rate GST shall be passed on to the Owner.

41.12 Beyond the contract period, in case MNGL is entitled for input tax credit of GST, then statutory variation in applicable GST on supply and on incidental services, shall be to MNGL's account.

41.13 MNGL will prefer to deal with registered supplier of goods / services under GST. All Vendors shall have GST registration in the concerned State from where he intends to supply the goods. Therefore, bidders are requested to get themselves registered under GST, if not registered yet.

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41.14 In case CBEC (Central Board of Excise and Customs) / any equivalent Central Government agency / State Government agency brings to the notice of MNGL that the Supplier of Goods / Service Provider has not remitted the amount towards GST collected from MNGL to the government exchequer, then MNGL shall have the right to put that Supplier of Goods / Service Provider under Holiday List.

41.15 Bidders are required to strictly consider the following key points while preparing the bid document as the following shall be applicable in all awarded Contracts and Purchase Orders:

- (a) If prior to the placement of award, vendor realizes that the actual applicable rates of taxes are higher than the GST rates quoted in the bid against any particular HSN Code, then the vendor shall do reverse calculation and reduce the “basic unit price” of the product / service accordingly to match the “total price inclusive of taxes” of that product / service.


Whereas, in case the vendor realizes that the actual applicable rates of taxes are lower than the GST rates quoted in the bid against any particular HSN Code, then the vendor shall reduce the “GST rate” of the product / service accordingly without changing the “basic unit price” of that product / service and the invoices shall be raised as per the actual applicable GST.

- (b) The tax rates shall only be changed under statutory variation if there is a change in the GST rates after the due date of bid submission as per government notification in the applicable HSN code which is quoted in the bid only and not in any other HSN Code. The differential tax amount will be paid / recovered depending upon whether the revised rate notified by government has increased /decreased as compared to the existing rates.

42.0 TIME FOR PERFORMANCE

42.1 The effective date of Contract shall be the date of Notification of Award (Fax of Intent) or as mentioned therein. The completion period specified in the Bid Document shall be reckoned from such date of effectiveness.

42.2 Contractor shall furnish bar charts specifying intermediate milestones to achieve the final completion period as per contract. The bar chart agreed shall be for reference purpose only & shall in no way release the contractor’s responsibility to complete the work within the completion period.


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43.0 TRANSFER OF TITLE

- 43.1 The title of Ownership in respect of equipment, materials etc. supplied by Contractor for incorporation in permanent works for execution of contract shall pass on to Owner on the date of issue of completion certificate.
- 43.2 However, Owner shall have the lien on all such equipment, materials, etc. at any time during the performance of the contract after the date on which Owner releases any advance payment towards the said equipment, materials, etc. and contractor shall thereafter be bound to use the same only for the purpose intended under the contract.
- 43.3 Ownership of goods supplied by domestic / foreign seller will transfer to purchaser on receipt of Goods at MNGL stores.

44.0 CONTRACTOR REMAINS LIABLE TO PAY COMPENSATION IF ACTION NOT TAKEN UNDER CLAUSE ENTITLED TERMINATION FOR DEFAULT

- 44.1 In any case in which any of the powers conferred upon the Owner by the clause entitled "Termination for Default" hereof shall have become exercisable and the same had not been exercised, the nonexercised thereof shall not constitute a waiver of any of the conditions hereof and such powers shall notwithstanding be exercisable in the event of any further case of default by the Contractor for which by any clause or clauses hereof he is declared liable to pay compensation amounting to the whole of his Performance guarantee and the liability of the Contractor for past and future Compensation shall remain unaffected.
- 44.2 In the event of the Owner putting in force the power vested in him under the preceding clause he may, if he so desires, take possession of all or any tools, and plants, materials and stores in or upon the works or the site thereof belonging to the Contractor or procured by him and intended to be used for the execution of the Work or any part thereof paying or allowing for the same in account at the Contract prices or in case of these not being applicable at current market prices to be certified by the Engineer-In-Charge may give notice in writing to the Contractor or his authorized agent, requiring him to remove such tools, plant, materials or stores from the premises (within a time to be specified in such notice), and in the event of the Contractor failing to comply with any such requisition, the Engineer-In-Charge may remove them at the Contractor's expense or sell them by auction or private sale on account of the Contractor and at his risk in all respects without any further notice as to the date, time or place of the expenses of any such removal and the amount of the proceeds and expenses of any such sale shall be final and conclusive against the Contractor.

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45.0 CHANGE IN CONSTITUTION

The prior approval, in writing, of the Owner shall be obtained before any change is made in the constitution of the contractor. If prior approval is not obtained, the Contract shall be deemed to have been allotted in contravention of Clause entitled "sub-letting of works" hereof and the same action may be taken and the same consequence shall ensure as provided in the said clause.

46.0 MEMBERS OF THE OWNER NOT INDIVIDUALLY LIABLE

No Director, or Official or employee of the Owner shall in any way be personally bound or liable for the acts or obligations of the Owner under the Contract or answerable for any default or omission in the observance or performance of any of the acts, matters or things which are herein contained.


47.0 CONTRACTOR TO INDEMNIFY THE OWNER

47.1 The Contractor shall indemnify the Owner and every member, officer and employee of the Owner, also the Engineer-In-Charge and his staff against all actions, proceedings, claims, demands, costs and expenses whatsoever arising out of all actions, proceedings, claims, demands, costs and expenses which may be made against the Owner for or in respect of or arising out of any failure by the Contractor in the performance of his obligations under the Contract. The Owner shall not be liable for or in respect of consequence of any accident or injury to any workmen or other person in the employment of the Contractor or his Sub-Contractor and Contractor shall indemnify and keep indemnified the Owner against all such damages and compensations and against all claims, damages, proceedings, costs, charges and expenses whatsoever in respect thereof or in relation thereof.

47.2 Should the Owner have to pay any money in respect of such claims or demands as aforesaid the amount so paid and the costs incurred by the Owner shall be charged to and paid by the Contractor and the Contractor shall not be at liberty to dispute or question the right of the Owner to make such payments notwithstanding the same may have been made without the consent or authority or in law or otherwise to the contrary.

48.0 SAFETY REGULATIONS

In respect of all labour, directly or indirectly employed in the Work the Contractor shall at his own expense arrange for all the safety provisions and abide by all labour laws, safety codes, and all fire and statutory regulation and keep owner indemnified in respect thereof.

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49.0 OWNER MAY DO PART OF WORK

Upon failure of the Contractor to comply with any instructions given in accordance with the provisions of this Contract the Owner has the alternative right, instead of assuming charge of entire Work, to place additional labour force, tools, equipment's and materials on such parts of the Work, as the Owner may designate or also engage another Contractor to carry out the Work. In such cases, the Owner shall deduct from the amount which otherwise might become due to the Contractor, the cost of such Work and materials with fifteen percent (15%) added to cover all Owners charges and should the total amount thereof exceed the amount due to the Contractor, the Contractor shall pay the difference to the Owner.

50.0 POSSESSION PRIOR TO COMPLETION

The Engineer-In-Charge shall have the right to take possession of or use any completed or partially completed Work or part of the Work. Such possession or use shall not be deemed to be an acceptance of any work completed in accordance with the Contract agreement. If such prior possession or sue by the Engineer-In-Charge delays the progress of Work, equitable adjustment in the time of completion will be made and the Contract agreement shall be deemed to be modified accordingly.


51.0 DEFECTS IN WORK

51.1 DEFECTS PRIOR TO TAKING OVER

If at any time, before the Work is taken over, the Engineer-In-Charge shall:

- (a) Decide that any work done or materials used by the Contractor or by any Sub-Contractor is defective or not in accordance with the Contract, or that the works or any portion thereof are defective, or do not fulfil the requirements of Contract (all such matters being hereinafter, called "Defects" in this clause), and
- (b) As soon as notice is given to the Contractor in writing of the said decision, specifying particulars of the defects alleged to exist or to have occurred, then the Contractor shall at his own expenses and with all speed make good the defects so specified.

In case Contractor shall fail to do so, the Owner may take, at the cost of the Contractor, such steps as may in all circumstances, be reasonable to make good such defects. The expenditure so incurred by the Owner will be recovered from the amount due to the Contractor. The decision of the Engineer-in-Charge with regard to the amount to be recovered from the Contractor will be final and

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binding, on the Contractor. As soon as the WORK have been completed in accordance with the Contract (except in minor respects that do not affect their use for the purpose for which they are intended and except for maintenance thereof and have passed the tests on completion, the Engineer-In-Charge shall issue a certificate (hereinafter called Completion Certificate) in which he shall certify the date on which the Work have been so completed and have passed the said tests and the Owner shall be deemed to have taken over the Work on the date so certified. If the Work has been divided into various groups in the Contract, the Owner shall be entitled to take over any group or groups before the other or others and there upon the Engineer-In-Charge shall issue a Completion Certificate which will, however, be for such group or groups so taken over only. In such an event if the group/section/part so taken over is related to the integrated system of the work, no withstanding date of grant of Completion Certificate for group/section/part, the period of liability in respect of such group/section/part shall extend 12 (twelve) months from the date of completion of Work.


51.2 DEFECTS AFTER TAKING OVER:

In order that the Contractor could obtain a Completion Certificate he shall make good, with all possible speed, any defect arising from the defective materials supplied by the Contractor or workmanship or any act or omission of the Contractor that may have been noticed or developed, after the works or groups of the works has been taken over, the period allowed for carrying out such Work will be normally one month. If any defect be not remedied within a reasonable time, the Owner may proceed to do the Work at Contractor's risk and expense and deduct from the final bill such amount as may be decided by the Owner.

If by reason of any default on the part of the Contractor a Completion Certificate has not been issued in respect of any portion of the Work within one month after the date fixed by the Contract for the completion of the Work, the Owner shall be at liberty to use the Work or any portion thereof in respect of which a completion certificate has not been issued, provided that the Work or the portion thereof so used as aforesaid shall be afforded reasonable opportunity for completing these works for the issue of Completion Certificate.

52.0 REPLACEMENT OF DEFECTIVE PARTS AND MATERIALS

- 52.1 If during the progress of the Work, Owner shall decide and inform in writing to the Contractor, that the Contractor has manufactured any plant or part of the plant unsound or imperfect or has furnished plant inferior to the quality specified, the Contractor on receiving details of such defects or deficiencies shall at his own expenses within 7 (seven) days of his receiving the notice, or otherwise within such time as may be reasonably necessary for making it good, proceed to alter, re-construct or remove such work and furnish fresh equipment upto the standards of the specifications. In case the Contractor fails to do so, Owner may

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on giving the Contractor 7 (seven) days' notice in writing of his intentions to do so, proceed to remove the portion of the Work so complained of and at the cost of Contractor perform all such works or furnish all such equipment's provided that nothing in the clause shall be deemed to deprive the Owner of or affect any rights under the Contract, the Owner may otherwise have in respect of such defects and deficiencies.


- 52.2 The Contractor's full and extreme liability under this clause shall be satisfied by the payments to the Owner of the extra cost, of such replacements procured including erection/installation as provided for in the Contract; such extra cost being the ascertained difference between the price paid by the Owner for such replacements and the Contract Price portion for such defective plants and repayments of any sum paid by the Owner to the Contractor in respect of such defective plant. Should the Owner not so replace the defective plant the Contractor's extreme liability under this clause shall be limited to the repayment of all such sums paid by the Owner under the Contract for such defective plant.

53.0 DEFENCE OF SUITS:

If any action in court is brought against the Owner or an officer or agent of the Owner, for the failure, omission or neglect on the part of the Contractor to perform any acts, matters, covenants or things under the Contract, or damage or injury caused by the alleged omission or negligence on the part of the Contractor, his agents, representatives or his Sub-Contractor's, or in connection with any claim based on lawful demands of Sub-Contractor's workmen, suppliers or employees, the Contractor, shall in such cases indemnify and keep the Owner and/or their representatives harmless from all losses, damages, expenses or decrees arising out of such action.

54.0 PACKING, FORWARDING AND SHIPMENT

- 54.1 The Contractor, wherever applicable, shall, after proper painting, pack and crate all items in such a manner as to protect them from deterioration and damage during rail and road transportation to the Site and storage at the Site till the time of erection. The Contractor shall be held responsible for all damages due to improper packing.
- 54.2 The Contractor shall notify Owner of the date of each shipment from his works and expected date of arrival at the Site for the information of Owner.
- 54.3 The Contractor shall also give all shipping information concerning the weight, size and content of each packing including any other information Owner may require.

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- 54.4 Fragile articles shall be packed with special precaution and shall bear the marking like 'Fragile Handle with Care and/or 'this side up' etc. Items shipped in bundle must be securely tied with steel wire or straps at suitable intervals.
- 54.5 All delicate surfaces on equipment/materials shall be carefully protected and painted with protective paint/compound and wrapped to prevent rusting and damage.
- 54.6 Attachments and parts of equipment and small pieces shall be packed in wooden cases with adequate protection inside the case and wherever possible should be sent along with the major equipment. Each item shall be tagged so as to identify it with the main equipment and part number and reference number shall be indicated.
- 54.7 All protrusions shall be suitably protected and openings shall be blocked by wooden covers.
- 54.8 Wherever required, equipment/material shall be packed in polythene bags and silica gel or similar dehydrating compound shall be put inside the bags for protecting them.


55.0 DEDUCTIONS FROM THE CONTRACT PRICE

All costs, damages or expenses which Owner may have paid or incurred for which under the provisions of the Contract, the Contractor is liable/will be liable, will be deducted from contractors bills or from any moneys due or becoming due to the Contractor.

56.0 COMPLETION CERTIFICATE

Application for Completion Certificate:

- 56.1 When the Contractor fulfils his obligation under the contract he shall be eligible to apply for Completion Certificate in respect of the Work by submitting the completion documents along with such application for Completion Certificate.
- 56.2 The Engineer-In-Charge shall normally issue to the Contractor the Completion Certificate within one month after receiving an application thereof from the Contractor after verifying from the completion documents and satisfying himself that the Work has been completed in accordance with and as set out in the construction and erection drawings and the Contract Documents.
- 56.3 The Contractor, after obtaining the Completion Certificate, is eligible to present the final bill for the Work executed by him under the terms of Contract.

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56.4 Issue of Completion Certificate:

56.5 Within one month of the completion of the Work in all respects, the Contractor shall be furnished with a certificate by the Engineer-In-Charge of such completion, but neither Completion Certificate shall be given nor shall the Work be deemed to have been executed until all scaffolding, surplus materials and rubbish is cleared off the Site completely. The Work will not be considered as complete and taken over by the Engineer-In-Charge, until all the Temporary Work, labour and staff colonies etc. Constructed are removed and worksite cleared to the satisfaction of the Engineer-In-Charge.

56.6 If the Contractor shall fail to comply with the requirements of this clause on or before the date fixed for the completion of the Work, the Engineer-In-Charge may at the expense of the Contractor remove such scaffolding, surplus materials and rubbish and dispose of the same as he thinks fit and clean off such dirt as aforesaid, and the Contractor shall forthwith pay the amount of all expenses so incurred and shall have no claim in respect of any such scaffolding or surplus materials as aforesaid except for any sum actually realised by the sale thereof.

57.0 FINAL DECISION AND FINAL CERTIFICATE


Upon the expiration of the Defect Liability Period and subject to the Engineer-In-Charge being satisfied that the WORK has been duly completed by the Contractor and performed all his obligations under the Contract, the Engineer-In-Charge shall (without prejudice to the rights of Owner to retain the provisions of relevant clause thereof) otherwise give a certificate herein referred to as the Final Certificate to that effect and the Contractor shall be not considered to have fulfilled the whole of his obligations under the Contract until Final Acceptance Certificate shall have been given by the Engineer-In-Charge notwithstanding any previous entry upon the Work and taking possession, working or using of the same or any part thereof by the Owner.

58.0 CERTIFICATE AND PAYMENTS ON EVIDENCE OF COMPLETION

Except the Final Certificate no other certificates or payment against a certificate or on general account shall be taken to be an admission by Owner of the due performance of the Contract or any part thereof or of occupancy or validity of any claim by the Contractor.

59.0 REPEAT ORDER

In case of Annual Rate Contract (ARC), 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.

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60.0 INSURANCE


Contractor shall at his own expense arrange secure and maintain insurance with reputable insurance companies to the satisfaction of the Owner as follows:

Contractor at his cost shall arrange, secure and maintain insurance as may be necessary and to its full value for all such amounts to protect the works in progress from time to time and the interest of Owner against all risks as detailed herein. The form and the limit of such insurance, as defined herein together with the under writer works thereof in each case should be as acceptable to the Owner. However, irrespective of work acceptance, the responsibility to maintain adequate insurance coverage at all times during the period of Contract shall be that of Contractor alone. Contractor's failure in this regard shall not relieve him of any of his responsibilities and obligations under Contract.

Any loss or damage to the equipment, during ocean transportation, port/custom clearance, inland and port handling, inland transportation, storage, erection, testing and commissioning till such time the work is taken over by Owner, shall be to the account of Contractor. Contractor shall be responsible for preferring of all claims and make good for the damage or loss by way of repairs and/or replacement of the parts of the work damaged or lost. Contractor shall provide the Owner with a copy of all insurance policies and documents taken out by him in pursuance of the Contract. Such copies of documents shall be submitted to the Owner immediately upon the Contractor having taken such insurance coverage. Contractor shall also inform the Owner at least 60 (Sixty) days in advance regarding the expiry cancellation and/or changes in any of such documents and ensure revalidation/renewal etc., as may be necessary well in time.

Statutory clearance, if any, in respect of foreign supply required for the purpose of replacement of equipment lost in transit and/or during Testing & Commissioning, shall be made available by the Owner. Contractor shall, however be responsible for obtaining requisite licenses, port clearances and other formalities relating to such import. The risks that are to be covered under the insurance shall include, but not be limited to the loss or damage in handling, transit, theft, pilferage, riot, civil commotion, weather conditions, accidents of all kinds, fire, war risk (during ocean transportation only) etc. The scope of such insurance shall cover the entire value of supplies of equipment, plants and materials to be imported from time to time.


All costs on account of insurance liabilities covered under Contract will be to Contractor's account and will be included in Value of Contract. However, the Owner may from time, during the currency of the Contract, ask the Contractor in writing to limit the insurance coverage risk and in such a case, the parties to the Contract will agree for a mutual settlement, for reduction in Value of Contract to the extent of reduced premium amounts.

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Contractor as far as possible shall cover insurance with Indian Insurance Companies, including marine Insurance during ocean transportation.

61.0 COMPLIANCE OF LAWS

- 61.1 The contractor deploying contract labour shall obtain license from appropriate licensing authority as per prevailing rules & regulation and as modified from time to time during contract period.
- 61.2 The contractor (which shall include the contracting firm / company) shall be solely liable to obtain and to abide by all necessary licenses from the concerned authorities as provided under the various Labour Laws / legislations including labour license from the competent authority under the Contract Labour ("Regulation & Abolition") Act 1970 and Acts made thereafter.
- 61.3 The Contractor shall also be bound to discharge obligations as provided under various statutory enactments including the Employees Provident Fund and Miscellaneous Provisions Act 1952, ESI Act 1948, Contract Labour ("Regulation & Abolition") Act 1970, Minimum Wages Act 1948, payment of wages Act 1936, Workmen's Compensation Act 1923 and other relevant Acts, Rules & Regulations in force from time to time.
- 61.4 The Contractor shall be responsible for necessary contributions towards PF, Family Pension, ESIC or any other statutory payments to Government Agencies as applicable under the laws in respect of the contract and of personnel deployed by the contractor for rendering services to Owner and shall deposit the required amount with the concerned statutory authorities on or before due dates. The contractor shall obtain a separate PF number from the concerned Regional Provident Fund Commissioner and submit necessary proof of having deposited the employees as well as the Owner's contribution to the Provident Fund. The contractor shall also be responsible for payment of any administration / inspection charges thereof, wherever applicable, in respect of personnel deployed by him relating to the work of Owner.
- 61.5 The Contractor shall not engage / deploy any person of less than 18 years under this contract, and the person(s) to be deployed should be physically and mentally fit.
- 61.6 The installations where job is to be carried out are live and have hydrocarbon environment. Contractor shall comply with all safety and security rules and regulations and other rules laid down by Owner for its operation. Contractor shall follow best Engineering practice and relevant international safety standards. It shall be duty / responsibility of the Contractor to ensure the compliance of fire safety, security and other operational rules and regulations by his personnel.

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Disregard to these rules by the Contractor's personnel will lead to the termination of the Contract in all respects and shall face penal / legal consequences.


- 61.7 Personnel protective items like safety helmets, safety shoes, hand gloves, eye protection, cotton working overalls / dresses (not synthetic materials) and other required materials for the safety of the contractor's personnel shall be arranged by the contractor himself. However firefighting equipment shall be arranged by Owner.
- 61.8 The Contractor shall arrange for life insurance for all his personnel deployed on the job as per the relevant Acts, rules and regulations, etc. In case by virtue of provisions of Workers Compensation Act, 1923 or any other law in force, Owner has to pay compensation for a workman employed by the Contractor due to any cause whatsoever, the amount so paid shall be recovered from the dues payable to the Contractor and/or security deposit with Owner. General third party insurance for CNG Station shall be arranged by Owner.

62.0 THE ENGINEER-IN-CHARGE

- 62.1 Issue the contractor from time to time during the running of the Contract such further instructions as shall be necessary for the purpose of proper and adequate execution of the Contract and the Contractor shall carry out and bound by the same.
- 62.2 During the currency of this Contract, Owner can increase and / or decrease the number of the services required & quantity of work /services shown in from the Schedule of Rates.
- 62.3 Order the Contractor to remove or replace any workmen whom the Owner considers incompetent or unsuitable and opinion of the Owner representative as to the competence of any workman engaged by the contractor shall be final and binding on the Contractor. Key personnel can be deployed at site only after getting approval from the Owner.

63.0 INDEMNITY


Contractor shall exclusively be liable for non-compliance of the provisions of any act, laws rules and regulations having bearing over engagement of workers directly or indirectly for execution of Contract and the Contractor hereby undertake to indemnify the Owner against all actions, suits, proceedings, claims, damages demands, losses, etc. which may arise under Minimum Wages Act 1948, payment of wages Act 1936, Workmen's Compensation Act 1923, Personnel Injury (Compensation Insurance) Act, ESI Act, Fatal accident Act, Industrial Dispute Act, Shops and Establishment Act, Employees Provident Fund Act, Family Pension and deposit Linked Insurance schemes or any other act or

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statutes not herein specifically mentioned but having direct or indirect application for the persons engaged under this contract.

64.0 LABOUR LAWS

- 64.1 No labour below the age of 18 (eighteen) years shall be employed on the Work.
- 64.2 The Contractor shall not pay less than what is provided under law to labourers engaged by him on the Work.
- 64.3 The Contractor shall at his expense comply with all labour laws and keep the Employer indemnified in respect thereof.
- 64.4 The Contractor shall pay equal wages for men and women in accordance with applicable labour laws.
- 64.5 If the Contractor is covered under the Contract labour (Regulation and Abolition) Act, he shall obtain a licence from licensing authority (i.e. office of the labour commissioner) by payment of necessary prescribed fee and the deposit, if any, before starting the Work under the Contract. Such fee/deposit shall be borne by the Contractor.
- 64.6 The Contractor shall employ labour in sufficient numbers either directly or through Sub- Contractor's to maintain the required rate of progress and of quality to ensure workmanship of the degree specified in the Contract and to the satisfaction of the Engineer-In-Charge.
- 64.7 The Contractor shall furnish to the Engineer-In- Charge the distribution return of the number and description, by trades of the work people employed on the works. The Contractor shall also submit on the 4th and 19th of every month to the Engineer-In-Charge a true statement showing in respect of the second half of the preceding month and the first half of the current month (1) the accidents that occurred during the said fortnight showing the circumstances under which they happened and the extent of damage and injury caused by them and (2) the number of female workers who have been allowed Maternity Benefit as provided in the Maternity Benefit Act 1961 on Rules made thereunder and the amount paid to them.
- 64.8 The contractor shall comply with the provisions of the Payment of Wage Act 1936, Employee Provident Fund Act 1952, Minimum Wages Act 1948, Employers Liability Act 1938, Workmen's Compensation Act 1923, Industrial Disputes Act 1947, the Maternity Benefit Act 1961, Contract Labour Regulation and Abolition Act 1970, Employment of Children Act 1938 and any modifications thereof or any other law relating thereto and rules made thereunder from time to time.

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- 64.9 The engineer-in-charge shall on a report having been made by an Inspecting Officer as defined in Contract Labour (Regulation and Abolition) Act 1970 have the power to deduct from the money due to the contractor any sum required or estimated to be required for making good the loss suffered by a worker or workers by reason of non- fulfilment of the Conditions of the Contract for the benefit of workers, non-payment of wages or of deductions made from his or their wages which are not justified by the terms of the Contract or non-observance of the said regulations.
- 64.10 The contractor shall indemnify the employer against any payments to be made under and for the observance of the provisions of the aforesaid acts without prejudice to his right to obtain indemnity from his Sub-Contractor's. In the event of the contractor committing a default or breach of any of the provisions of the aforesaid acts as amended from time to time, of furnishing any information or submitting or filling and form/ register/ slip under the provisions of these acts which is materially incorrect then on the report of the inspecting officers, the contractor shall without prejudice to any other liability pay to the employer a sum not exceeding rs.50.00 as liquidated damages for every default, breach or furnishing, making, submitting, filling materially incorrect statement as may be fixed by the engineer-in- charge and in the event of the contractor's default continuing in this respect, the liquidated damages may be enhanced to rs.50.00 per day for each day of default subject to a maximum of one percent of the estimated cost of the work put to tender. The engineer-in-charge shall deduct such amount from bills or contract performance security of the contractor and credit the same to the welfare fund constitute under these acts. The decision of the engineer-in-charge in this respect shall be final and binding

Implementation of Apprentices Act, 1961:

- 64.11 The contractor shall comply with the provisions of the apprentice's act, 1961 and the rules and orders issued thereunder from time to time. If he fails to do so, his failure will be a breach of the contract and the engineer-in-charge may, at his discretion, cancel the contract. The contractor shall also be liable for any pecuniary liability arising on account of any violation by him of the provisions, of the act.

Contractor to indemnify the employer:

- 64.12 The contractor shall indemnify the employer and every member, office and employee of the employer, also the engineer-in-charge and his staff against all actions, proceedings, claims, demands, costs and expenses whatsoever arising out of or in connection with the matters referred to in clause and elsewhere and all actions, proceedings, claims, demands, costs and expenses which may be made against the employer for or in respect of or arising out of any failure by the contractor in the performance of his obligations under the contract document.


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The employer shall not be liable for or in respect of or arising out of any failure by the contractor in the performance of his obligations under the contract document. The employer shall not be liable for or in respect of any demand or compensation payable by law in respect or in consequence of any accident or injury to any workmen or other person. In the employment of the contractor or his sub-contractor the contractor shall indemnify and keep indemnified the employer against all such damages and compensations and against all claims, damages, proceedings, costs, charges and expenses whatsoever in respect thereof or in relation thereto.

- 64.13 Payment of claims and damages: should the employer have to pay any money in respect of such claims or demands as aforesaid the amount so paid and the costs incurred by the employer shall be charged to and paid by the contractor and the contractor shall not be at liberty to dispute or question the right of the employer to make such payments notwithstanding the same, may have been made without the consent or authority or in law or otherwise to the contrary.
- 64.14 In every case in which by virtue of the provisions of section 12, sub-section (i) of workmen's compensation act, 1923 or other applicable provision of workmen compensation act or any other act, the employer is obliged to pay compensation to a workman employed by the contractor in execution of the work, the employer will recover from the contractor the amount of the compensation so paid, and without prejudice to the rights of employer under section 12, sub- section (2) of the said act, employer shall be at liberty to recover such amount or any part thereof by deducting it from the contract performance security or from any sum due to the contractor whether under this contract or otherwise. The employer shall not be bound to contest any claim made under section 12, sub-section (i) of the said act, except on the written request of the contractor and upon his giving to the employer full security for all costs for which the employer might become liable in consequence of contesting such claim.


Health and sanitary arrangements for workers:

- 64.15 In respect of all labour directly or indirectly employed in the works for the performance of the contractor's part of this agreement, the contractor shall comply with or cause to be complied with all the rules and regulations of the local sanitary and other authorities or as framed by the employer from time to time for the protection of health and sanitary arrangements for all workers.
- 64.16 The contractor shall provide in the labour colony all amenities such as electricity, water and other sanitary and health arrangements. The contractor shall also provide necessary surface transportation to the place of work and back to the colony for their personnel accommodated in the labour colony.

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SECTION – IV

SPECIAL CONDITIONS OF CONTRACT (SCC)

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SPECIAL CONDITIONS OF THE CONTRACT (SCC)

The following Special Conditions of Contract shall supplement the General Conditions of Contract. Whenever there is an ambiguity, conflict and contradiction between SCC and GCC, the provisions herein shall prevail over those in the General Conditions of the Contract. The corresponding clause number of the GCC is indicated in parentheses.

1.0 DEFINITIONS

Following clauses of GCC are modified as below:


- 1.1 GCC Clause 1.0.
GCC 1.1 (m) The Purchaser is: Maharashtra Natural Gas Limited, 2nd Floor, Pride Purple Coronet, Baner Road, Baner, Pune – 411045

2.0 INSPECTIONS AND TESTS (GCC Clause 10.0)

In addition to GCC clause no.10, following is added,

Inspection and tests prior to shipment of Goods and at final acceptance shall be as specified in Technical Specifications. However, without prejudice to the provisions of Technical specifications following shall hold good:

- 2.1 The Purchaser or its representative shall have the right to inspect and/ or to test the material to confirm their conformity to the specifications.
- 2.2 The inspections and tests may be conducted on the premises of the Seller or his subcontractor (s) at point of Delivery and/or at the final destination. When conducted on the premises of the Seller or his subcontractor(s), all reasonable facilities and assistance including access to the production data shall be furnished to the Purchaser's representatives at no charge to the Purchaser.
- 2.3 The Purchaser's right to inspect, test and where ever necessary reject the material after the material's arrival in the Purchaser's place shall in no way be limited to or waived by reason of the material having previously been inspected, tested and passed by the Purchaser or their representative prior to the material shipment from the country of origin.
- 2.4 The Purchaser or appointed Third Party Inspection Agency (TPIA) shall carry out the final inspection at supplier's works as per approved ITP. TPIA charges shall be borne by Purchaser. However, successful bidders shall make necessary arrangement for inspection at their own cost.

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3.0 REGISTRATION OF THE CONTRACT WITH STATUTORY AUTHORITIES

3.1 Deleted

4.0 PROJECT SCHEDULING AND MONITORING SYSTEM

4.1 General

The Contractor shall attend Management Level Review Meeting once in a month or as and when required with agenda of progress achieved and major hold-ups at Owner's office. Monthly Review Meeting will be held at OWNER'S OR CONTRACTOR'S office with agenda of progress and holds in engineering, procurement and construction programme for next month.


4.2 Expediting, Inspection and Testing

Contractor shall be responsible for all expediting and inspection. Copies of Contractor's expediting and inspection reports shall be forwarded periodically to Owner for information. Contractor shall ensure the Owner's right of inspection in contractor's shop during the manufacturing or fabrication of equipment and other components. Contractor shall inform Owner promptly of any problems encountered in regards to quality or delivery and of steps taken by the Contractor to overcome such problems. Contractor shall furnish schedule of dates for factory tests of all supply items enabling Owner or its authorised representative to witness the tests.

Immediately after award of work, Contractor shall submit the QAP, Inspection and Test plan, in line with contract requirement, for approval. Owner will bear expenses of their representative for visiting any inspection and expediting.

4.3 In no eventuality, any deviation from the above specified mode of inspection will be acceptable and the equipment(s) shall be tested as a package for their faithful performance at the shop floor as per the ordered parameter and in no circumstances shall be allowed to be tested in pieces or stages or at places during the factory inspection by third party Inspection Agency/the Owner/Consultant.

4.4 **Dispatch of Supply:** In no case, the material shall be dispatched from the supplier's premises unless the inspection done by the third party / consultant on behalf of the owner is duly accepted and acknowledged by the Owner and due "despatch clearance" is issued by the Owner. Owner reserves the right to reject the material if it is not found to be complying to Guaranteed parameters and other technical specifications of the contract.

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For obtaining despatch clearance, bidder shall send all documents including IRN to Engineer-in-charge and C&P, MNGL.

5.0 RECORDS OF CONTRACT DOCUMENTS


- 5.1 The Contractor shall keep on each site at least three copies of each and every drawing, specifications and Contract Document in excess of his own requirement and those copies shall be available at all times for use by the Owner's Representative and by any other person authorised by the Owner's representative.

6.0 INTELLECTUAL PROPERTY – SECRECY

- 6.1 Neither the Owner nor the Contractor nor their personnel, agents nor any sub-contractor shall divulge to any one (other than persons designated by the party disclosing the information) any information designated in writing as confidential and obtained from the disclosing party during the course of execution of the works so long as and to the extent that the information has not become part of the public domain. This obligation does not apply to information furnished or made known to the recipient of the information without restriction as to its use by third parties or which was in recipient's possession at the time of disclosure by the disclosing party. Upon completion of the works or in the event of termination pursuant to the provisions of the Contract, Contractor shall immediately return to the Owner all drawings, plans, specifications and other documents supplied to the contractor by or on behalf of the Owner or prepared by the Contractor solely for the purpose of the performance of the works, including all copies made thereof by the Contractor.

7.0 STATUTORY APPROVALS

- 7.1 The approval from any authority required as per statutory rules and regulations of Central/State Government shall be the Contractor's responsibility unless otherwise specified in the bid document. The application on behalf of the Owner for submission to relevant authorities along with copies of required certificates complete in all respects shall be prepared and submitted by the Contractor well ahead of time so that the actual construction/commissioning of the work is not delayed for want of the approval/inspection by concerned authorities. The inspection of the works by the authorities shall be arranged by the Contractor and necessary co-ordination and liaison work in this respect shall be the responsibility of the Contractor. However statutory fees paid, if any, for all inspections and approvals by such authorities shall be reimbursed at actual by the Owner to the Contractors on production of documentary evidence.
- 7.2 Any change/addition required to be made to meet the requirements of the statutory authorities shall be carried out by the Contractor free of charge. The

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inspection and acceptance of the work by statutory authorities shall however, not absolve the Contractor from any of his responsibilities under this Contract.

8.0 WATER AND POWER SUPPLY

- 8.1 Water and Power supply may be provided during testing & commissioning of compressor by the Owner at Owner's premises, based on the availability of the water and power supply. However, if water and power supply is not available at site, same shall be made available by the vendor at its own cost for commissioning and testing of the package.

9.0 LABOUR LICENCE


- 9.1 Before starting of work, Contractor shall obtain a license from concerned authorities under the Contract Labour (Abolition and Regulation) Act 1970 and amendment thereof, if any, and furnish copy of the same to Owner. Licence shall be valid till the validity of contract.

10.0 PROVIDENT FUND

- 10.1 The Contractor shall strictly comply with the provisions of Employees Provident Fund Act and register themselves with RPFC before commencing work. The Contractor shall deposit Employees and Employers contributions to the RPFC every month. The contractor shall furnish along with each running bill, the challan/receipt for the payment made to the RPFC for the preceding months.
- 10.2 In case the RPFC's challan/ receipt, as above, is not furnished, Owner shall deduct 16 (Sixteen) % of the payable amount from Contractor's running bill and retain the same as a deposit. Such retained amounts shall be refunded to contractor on production of RPFC challan/receipt for the period covered by the related running bill.

11.0 CO-ORDINATION WITH OTHER AGENCIES

- 11.1 The Contractor's responsibility covers the co-ordination of all the works involved and the expenses of site mobilization and demobilization including clearing activities. The quoted rates for various items are deemed to have appropriately catered for these and no separate claim whatsoever is admissible.
- 11.2 Work shall be carried out in such a manner that the work of other agencies operating at the site is not hampered due to any action/inaction of the contractor. Proper co-ordination with other agencies shall be Contractor's responsibility.

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12.0 INCOME TAX

- 12.1 Income Tax along with surcharge of Income Tax as applicable at the prevailing rate on the gross amount billed shall be deducted from the Contractor's bills as per applicable laws in India and Tax Deduction at Source (TDS) certificate shall be issued.
- 12.2 Any reduction in Taxes and duties at the time of supply shall be passed on to Owner. However, any increase in rate of taxes and duties and imposition of any new levy/ tax at the time of supply after contractual completion period shall be borne by Contractor.

13.0 ADVANCE

- 13.1 No advance shall be paid under the contract.

14.0 TERMS OF PAYMENTS

- 14.1 Payment towards Supply (Compressor Package)

Through direct payment within 30 days from date of receipt of invoice.


- i) **90% (Ninety 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) **10% (Ten Percent) Payment** shall be released after successful completion of installation, Testing and Commissioning of each compressor package at the site and Acceptance thereof by the OWNER and after successful Performance Acceptance Test at site and acceptance by owner for each compressor.

In case Installation, Testing & Commissioning and Performance Acceptance Test could not be executed within 120 days from the date of receipt of compressors at site/ store due to reasons attributable to Purchaser, the 10% payment shall be released against submission of undertaking for the same.

- 14.2 Payment towards Transportation charges.

100% payment towards Transportation shall be payable after receipt of material at MNGL site / store.

- 14.3 Payment against Installation, Testing & Commissioning:

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100% payment towards Testing & Commissioning shall be payable within 45 working days (Forty-Five working days) after submission of invoice duly certified by the Engineer-In-Charge.

14.4 Payment against Performance Acceptance Test:

100% payment towards Field Performance Test shall be released within 45 days (Forty-five working days) after submission of invoice duly certified by the Engineer-In-Charge.

14.5 Payment against Operation & Comprehensive Maintenance:

On pro-rata monthly basis, against monthly invoices duly certified by Engineer-in-Charge within 45 (Forty-Five working days) working days from the date of submission of bills to the OWNER.

15.0 DELIVERY AND DOCUMENTS

15.1 Upon delivery of the Goods to the transporters/carriers, the Supplier shall notify the Purchaser/ Consultant through fax/mail the documents specified in clause 16 below. The bidder will also indicate likely date of arrival to the Purchaser/ Consultant.

15.2 The above documents shall be received by the Purchaser before arrival of the Goods and, if not received, the Supplier will be responsible for any consequent expenses.


15.3 The Bidder to ensure that Purchase order and Letter or Credit No (if applicable) must be appearing in LR/ GR/Bill of Lading/ Airway bill no., Invoices and Packing List. Bidders to also ensure that description of goods in all the despatch documents should be exactly same as per the Purchase Order.

15.4 Original Invoices shall be directed to following address for its further processing. The Suppliers shall send duplicate copy along with consignment.

Chief Manager (C&P)
Maharashtra Natural Gas Ltd.
2nd Floor, Pride Purple Coronet,
Baner Road, Baner,
Pune – 411045

16.0 SHIPMENT

16.1 The Bidder shall make shipment only after obtaining despatch clearance from Purchaser. For getting despatch clearance, bidder has to submit inspection

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release note issued by Third Party Inspection agency/ Purchaser's authorized representative to the Purchaser (CM – C & P).

17.0 OPERATION & COMPREHNSIVE MAINTENANCE REQUIREMENT

17.1 Sub-Letting

No part of supply portion of this contract nor any share or interest therein in any manner or extent, will be transferred, assigned, or sub-let, directly or indirectly to any person/firm or organization. However, Operation & Comprehensive Maintenance may be sublet after taking the due approval from MNGL.

17.2 Compliance of Laws

The contractor deploying 20 (twenty) or more workmen as contract labour shall have to obtain license from appropriate licensing authority, if required.


The contractor (which shall include the Contracting firm / company) shall be solely liable to obtain and to abide by all necessary licenses from the concerned authorities as provided under the various labour laws legislation's including labour license from the competent authority under the Contract Labour ("Regulation & Abolition") Act 1970 and Acts made thereafter.

The Contractor shall be responsible for necessary contributions towards PF, Family Pension, ESIC or any other statutory payments to Government Agencies as applicable under the laws in respect of the contract and personnel deployed by the contractor for rendering services to OWNER and shall deposit the required amount with the concerned statutory authorities on or before due dates. The contractor shall obtain a separate PF number from the concerned Regional Provident Fund Commissioner and submit necessary proof of having deposited the employees as well as the employer's contribution to the Provident Fund.

The contractor shall not engage /deploy any person of less than 18 years under this contract and the persons to be deployed should be physically and mentally fit.

The installations where job is to be carried out are live and have hydrocarbon environment. Contractor shall comply with all safety and security rules and regulations and other rules laid down by OWNER. It shall be the duty/responsibility of the contractor to ensure the compliance of fire, safety, security and other operational rules and regulations by his personnel. Disregard to these rules by the contractor's personnel will lead to the termination of the contract in all respects and shall face penal/legal consequences.

The contractor shall arrange for insurance of all this worker engaged on the job as per the relevant Acts, rules and regulations, etc. In case by virtue of provisions

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of worker's compensation Act, 1923 or any other law in force. OWNER has to pay compensation for a workman employed by the contractor due to any cause whatsoever the amount so paid shall be recovered from the dues payable to the contractor and /or security deposit.

17.3 The Engineer- In- Charge Shall Have Power To

- a) Issue the contractor from time to time during the running of the contract such further instructions as shall be necessary for the purpose of proper and adequate execution of the contract and the contractor shall carry out and bound by the same.
- b) During the concurrency of this contract, OWNER can increase and/or decrease the number of the services / technicians to meet contractual requirements.
- c) Order the contractor to remove or replace any workman whom the Owner considers incompetent or unsuitable and opinion of the Owner representative as to the competence of any workman engaged by the contractor shall be final and binding on the contractor.


17.4 Repatriation and Termination

OWNER shall reserve the right at any time during the concurrency of the contract, to terminate it by giving 30 days' notice to contractor, and upon expiry of such notice period the contractor shall vacate the site/office occupied by him immediately.

MNGL reserves the right to cancel / terminate the PO, if the bidder is unable to deliver the material within specified timeline (i.e. Delivery schedule for respective lot + 10 weeks i.e. Maximum allowable period) for the undelivered quantities.

17.5 Indemnity

Contractor shall exclusively be liable for non-compliance of the provision of any act, laws, rules and regulations having bearing over engagement of workers directly or indirectly for execution of work and the contractor hereby undertake to indemnify the Owner against all actions, suits, proceedings, claims, damages demands, losses, etc. which may arise under minimum wages act, payment of wages act, workman compensation act, personnel injury (compensation insurance) act ESI Act, Fatal Accident Act, Industrial Dispute Act, Shops and Establishment Act, Employees Provident Fund Act, Family Pension and deposit Linked Insurance Scheme or any other act or statutes not herein specifically mentioned but having direct or indirect application for the persons engaged under this contract. (A certificate to this effect shall be submitted by the contractor immediately on receipt of LOA).

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17.6 Loading

17.6.1 Loading on quoted prices shall be done as per tender Volume II of II.

17.7 Contractor's Responsibility

The contractor shall depute his Supervisor for supervision of the services to receive instructions from Engineer-in-Charge or his representative

17.8 Employment Liability of Contractor

The contractor shall indemnify OWNER & shall be solely and exclusively responsible for any liability arising due to any difference or dispute between him and his employer for the execution of this contract at any time during/after the contract period is over. All workmen engaged by the contractor shall be on his roll and be paid by him and OWNER shall have no responsibility towards them.


The contractor shall ensure and will be solely responsible for payment of wages and other dues latest by 7th of the following month to the personnel deployed by him in the presence of the Owner's representative.

The contractor shall be directly responsible and indemnify the Owner against all charges, claims, dues etc. arising out of disputes relating to the dues and employment of personnel deployed by him.

The contractor shall indemnify the Owner against all losses or damages caused to it on account of acts of the personnel deployed by the contractor. The contractor shall ensure regular and effective supervision of the personnel deployed by him.

The contractor shall be liable for making good all damages/losses arising out of loss or theft of each handled, leakage, pilferage of any office, furniture equipment fitting and fixtures what-so-ever as may be caused directly or indirectly by the engaged persons through him/work carried out by them.

During the concurrency of the job, if the work progress does not commensurate with the time elapsed in respect of any person/persons engaged by the contractor; the contractor shall be liable to pay the compensation to the Owner as may be considered reasonable by the Owner.

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18.0 SPECIAL NOTES

18.1 Warranty Period

The warranty shall remain valid for twelve (12) months from the date of successful performance test of compressor package at site. However, if performance test doesn't get carried out, within Ninety days (90 days) or 400 hrs of commercial operation (whichever is earlier), for reasons directly attributable to client/purchaser, then warranty period shall start from the date of completion of 30 days or 400 hours of successful commercial operation subject to issue of certificate by MNGL for the commencement of commercial operation.

OR

Eighteen (18) months from the date of delivery of last compressor of each lot at MNGL store / site, whichever is earlier.


18.2 Operation & Comprehensive Maintenance Period

Bidder shall provide Operation & Comprehensive Maintenance during warranty period. Warranty period shall be as defined in tender document. Further bidder shall provide operation & comprehensive maintenance during warranty period & further 4 (Four) years from the date of end of warranty period. However, maximum duration of contract for operation & comprehensive maintenance during warranty and post warranty period shall be limited to 66 months from the date of receipt of last Compressor of each lot at MNGL store / site.

In case a compressor package is commissioned after six months from the receipt of last package of that lot for any reason attributable to Purchaser, the operation & comprehensive maintenance rates for that particular period (year) will be applicable. First year rates of Operation & Comprehensive maintenance will be valid during the warranty period. Rates for second, third, fourth & fifth year will be valid for each year from the date of expiry of warranty period. The total validity of AMC shall however be limited to 66 months from the date of receipt of last compressor package of each lot at MNGL store / site.

In case a compressor package is commissioned after six months from the date of receipt of last package of lot for any reason attributable to Purchaser, the operation & comprehensive maintenance rates applicable for that particular period (year) will be applicable.

The comprehensive maintenance period may be extended beyond the above-defined period for another 5 years on sole discretion of MNGL as per tender terms.

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- Bidder shall provide preventive maintenance schedule based on running hours/ periodicity of the compressor package.
- Old spares removed during any type of maintenance activity will be submitted to MNGL by vendor. However, vendor will have to take care for disposal of consumables like waste oil, O Rings, Gaskets, Grease, Waste cloth etc. Waste oil collection and disposal in safe manner shall be done by the vendor only.

18.3 Delivery Terms and Schedule

As defined in IFB


18.4 Contract Cum Equipment Performance Bank Guarantee

Within thirty (30) Days of receipt of the respective Purchase Order, the successful bidder shall furnish to the Purchaser the Contract-Cum-Equipment Performance Bank Guarantee (CPBG) as follows:

- A. **For Supply, installation & commissioning and Performance Acceptance Test:** equivalent to 3% of respective Purchase Order value inclusive of all taxes, duties and charges towards supply, packing & forwarding, Transportation, Installation, Commissioning & PAT.
- B. **For Operation and Comprehensive Maintenance Services:** CPBG equivalent to 3% of total Purchase Order value for operation and comprehensive maintenance inclusive of all taxes, duties and charges on yearly basis (annualized i.e. total order value divided by Operation & maintenance period).

If the material supplied by contractor does not meet the guaranteed parameters and other requirement as per technical specification of contract consistently during operation at site, MNGL will revoke the Contract Cum Equipment Bank Guarantee, at its sole discretion.

The CPBG on a non-judicial stamp paper as per the pro forma enclosed of appropriate value in the form of DD or BG from Nationalized/Scheduled bank shall be valid for 90 days beyond the expiry of contract period. The claim period of CPBG shall be 01 months beyond the expiry date of BG validity. The CPBG shall be refunded after successful completion of the contract and after adjustment of any and all dues of the MNGL which may arise during the execution of the contract and a confirmation that contractor has cleared all its dues pertaining to the contract and all liabilities etc., in addition indemnifying MNGL against any future claims, if any.

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The Company shall have the right to forfeit the security deposit in case of non-satisfactory performance of the contract.

19.0 PRICE REDUCTION SCHEDULE

19.1 In case there is delay in delivery of goods / completion of the work/services attributable to the supplier / contractor / service provider, the supplier / contractor / service provider shall pay as compensation for delay and not as penalty in form of price reduction as detailed here under.

19.2 If the supplier / contractor / service provider fails to deliver any or all of goods or performance of the work/service within the time period(s) specified in the Order, MNGL shall without prejudice to any other remedy(s) under the Order, reduce the contract value by a sum calculated as mentioned below:

Supply portion: @ ½ % (Half Per Cent) per week of delay or part thereof of the value of item being supplied of which default in delivery has taken place

Installation, Testing and Commissioning and Performance Acceptance Test: @½ % (Half Per Cent) per week of delay or part there of the value of work that has been delayed.


Maximum PRS will be 10% of value of each Purchase Order of Supply, Installation, Testing and Commissioning and Performance Acceptance Test.

The contract value to be considered for application of PRS shall be inclusive of all taxes and duties.

Also, a grace period of 15 days shall be provided in lieu of drawing approvals. PMC/ Owner to approve the drawings in 15 days from date of submission. Any delay beyond 15 days will be added to delivery period of the successful bidder.

19.3 The parties agree that this is a genuine pre-estimate of the loss / damage which will be suffered on account of delay / breach on the part of the Contractor and the said amount will be payable on demand without there being any proof of the actual loss or damages caused by such delay / breach. The decision of Owner in regard to the actual delay shall be final and binding on the Contractor. All sums payable by way of compensation shall be considered as reasonable compensation without reference to the actual loss or damage which shall have been sustained.

19.4 In case of delay in performance / delivery on the part of Contractor, the invoice / document value shall be reduced proportionately for the delay and payment shall be released accordingly. In the event the invoice value is not reduced proportionately for the delay, the Purchaser may deduct the amount so payable by Contractor, from any amount falling due to the Contractor or by recovery against the Performance Guarantee.

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20.0 REGISTRATION OF THE CONTRACT WITH STATUTORY AUTHORITIES (FOR FOREIGN BIDDER)

20.1 Deleted.

21.0 REASONABILITY OF RATES

Since the tender is for long term requirement requiring the successful bidder to operate and maintain the supplied equipment comprehensively over a period of 66 months after receipt of last equipment of each lot at site, bidder is advised to quote reasonable rates for all the line items which are workable and sustainable for execution of the contract. Following points must be considered while submitting the offer,

- 21.1 The requirement under operations is to deploy one semi-skilled person in each shift throughout the year. The bidder to quote rates for operations portion based on their internal working however, should ensure compliance of minimum wage requirement in respective state and all other statutory compliances during tenancy of contract.
- 21.2 Similarly, cost of comprehensive maintenance should also be quoted keeping in view both the factors i.e. manpower requirement for maintenance system and spares required for comprehensive maintenance as per tender.
- 21.3 The quotes towards Annual CAMC and Operations charges are required to be quoted in the price bid format. The individual charges quoted towards Annual CAMC & Operations shall be **minimum 6% (Six) of basic supply price of Compressor.**


If prices quoted for Annual CAMC & Operations for any year is less than the minimum percentage described as above, then the bid will be rejected.

22.0 PERIOD OF CLAIM ARISING OUT OF CONTRACT

The Supplier/ contractor shall submit to MNGL, any claim arising out of the contract or otherwise within a period of 30 days from the date of cause of action of the said claim. The supplier/ contractor shall be deemed to have waived its rights to claim the same, if not raised within 30 days of cause of action of said claim. The said claim, if not raised within 30 days, cannot be taken up at any forum by the supplier/ contractor including arbitration. This provision shall be incorporated in the bid documents as terms & conditions of contract.

23.0 INSURANCE

23.1 Transit insurance will be in bidder's scope.

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24.0 CORRESPONDING ADDRESS

24.1 Purchaser:

Chief Manager (C&P)
Maharashtra Natural Gas Limited,
2nd Floor, Pride Purple Coronet,
Baner Road, Baner,
Pune – 411045
Telephone : +91 (020) 25611190
Email : gasaid@mngl.in, manan.gupta@mngl.in

25.0 DOCUMENT PRECEDENCE

In case of an irreconcilable conflict between Indian or other applicable standards, General Conditions of Contract, Special Conditions of Contract, Specifications, Drawings or Schedule of Rates and any other portion of Bidding Document the following shall prevail to the extent of such irreconcilable conflict in order of precedence.


1. Letter of Acceptance
2. Schedule of Rates as enclosures to Letter of Acceptance
3. Special Conditions of Contract
4. Job / Particular Specifications
5. Scope of Work
6. Drawings
7. Technical / Material Specifications
8. General Conditions of Contract
9. Indian Standards
10. Other applicable Standards

26.0 REPEAT ORDER

In case of Annual Rate Contract (ARC), 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.

27.0 FORCE MAJEURE

In the event of either party being rendered unable by Force Majeure to perform any obligations required to be performed by them under the contract, the relative obligation of the party affected by such Force Majeure shall upon notification to the other party be suspended for the period during which Force Majeure event lasts. The cost and loss sustained by the either party shall be borne by respective parties.


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- (i) The term "Force Majeure" as employed herein shall mean acts of God, earthquake, war (declared or undeclared), revolts, riots, fires, unprecedented floods, rebellions, explosions, hurricane, sabotage, civil commotions and acts and regulations of respective Government of the two parties, namely the owner and the contractor, any national / state level strike affecting manufacturing, transportation and imposition of ban affecting supply of goods.
- (ii) Upon the occurrence of such cause(s) and upon its termination, the party alleging that it has been rendered unable as aforesaid thereby, shall notify the other party in writing immediately but not later than 7 (seven) days of the alleged beginning and ending thereof, giving full particulars and satisfactory evidence in support of its claim.
- (iii) Time for performance of the relative obligation suspended by the Force Majeure shall then stand extended by the period for which such cause lasts provided it has adversely affected the overall completion schedule.
- (iv) If deliveries of bought out items and/or works to be executed by the contractor are suspended by Force Majeure conditions lasting for more than 1 (one) month, the parties to the contract shall hold discussions to resolve the situation mutually.
- (v) If during the concurrence of the contract there shall be an out-break of war whether declared or not, in that part of the World which whether financially or otherwise materially affects the execution of the work, the contractor shall unless and until the contract is terminated under the provisions in this clause continue to use his best endeavor to complete the execution of the work, provided always that the owner shall be entitled, at any time after such outbreak of war to terminate the contract by giving notice in writing to the contractor and upon such notice being given the contractor shall, save as to the rights of the parties under this clause and to the operation of the clauses entitled Settlement of Dispute and Arbitration hereof, be terminated but without prejudice to the right of either party in respect of any antecedent breach thereof.
- (vi) If the contract shall be terminated under the provisions of the above clause, the contractor shall with all reasonable diligence remove from the site all the contractor's equipment and shall remove similar facilities of his sub-contractors.

28.0 TERMINATION AND FAILURE CLAUSE

28.1 Time and date of delivery shall be the essence of the contract.

28.2 If the contractor/ supplier fails to complete the work / deliver the entire quantity of goods ordered or a part thereof within the period agreed to for such part or total

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quantity as per the delivery / time schedule or at any time repudiates the contract before the expiry of such period, the purchaser may without prejudice to any other right or remedy available to him recover damages for breach of the contract in form of recovering the compensation / Price Reduction Schedule / termination of the contract whichever is in the interest of the company, in accordance with the provision of contract

28.3 Termination of the contract as provided for above shall not prejudice or affect the rights of the owner, which may have accrued up to the date of such termination.


28.4 Termination and failure may also attract provisions of Holiday Listing Policy.

29.0 TERMINATION FOR DEFAULT

29.1 The following provisions shall be applicable:

Except for the cases of Force Majeure, if the Contractor fails to execute the work or any part thereof with such diligence as will ensure its completion within the time specified in the contract or extension thereof or fails to perform any of his obligation under the contract or in any manner commits a breach of any of the provisions of the contract, it shall be open to the owner at its option by written notice to the Contractor:

- i. To determine the contract in which event the Contract shall stand terminated and shall cease to be in force and effect on and from the date appointed by the Owner on that behalf, where upon the Contractor shall stop forthwith any of the Contractor's work then in progress, except such Work as the Owner may, in writing, require to be done to safeguard any property or Work, or installations from damage, and the Owner, for its part, may take over the work remaining unfinished by the Contractor and complete the same through a fresh Contractor or by other means, at the risk and cost of the Contractor, and any of his sureties if any, shall be liable to the Owner for any excess cost occasioned by such work having to be so taken over and completed by the Owner over and above the cost as worked out in terms of the contract.
- ii. Without determining the contract to take over the work of the Contractor or any part thereof and complete the same through a fresh Contractor or by other means at the risk and cost of the Contractor and any of his sureties are liable to the Owner for any excess cost over and above the cost as worked out in terms of the contract, occasioned by such works having been taken over and completed by Owner.
- iii. Before determining the Contract, provided in the judgment of the Owner, the default or defaults committed by the Contractor is/are curable and can

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be cured by the Contractor if an opportunity is given to him, then the Owner may issue notice in writing calling the Contractor to cure the default within such time specified in the notice.


29.2 The Owner shall also have the right to proceed or take action as per above, in the event that the Contractor becomes bankrupt, insolvent, compounds with his creditors, assigns the Contract in favour of his creditors or any other person or persons, or being a company or a corporation goes into voluntary liquidation, provided that in the said events it shall not be necessary for the Owner to give any prior notice to the Contractor.

29.3 Termination of the Contract as provided for above shall not prejudice or affect the rights of the Owner which may have accrued up to the date of such termination.

29.4 Failure by Contractor

Following provisions pertaining to execution of work shall be applicable:


- (i) Failure by the contractor to comply with the provisions of the contract: Owner has reserved an option to determine the contract, the security deposit furnished by the contractor is liable to be forfeited as also the excess cost which may become payable by the owner in getting the work executed, through an alternative agency, may be recovered from the contractor.
- (ii) Failure of contractor to execute the work as per contract: If pursuant to award of work, the contractor fails to commence work in a manner described in the contract or if the contractor fails to execute the work in conformity with the documents and if the contractor fails to execute work in accordance with the time schedule or if the contractor substantially suspends work for a period of 14 days without authority of Engineer In-charge or if the contractor fails to carry out and execute the work to the satisfaction of the Engineer In-charge or if contractor fails to supply sufficient or suitable construction plant, temporary works, labour, materials or things or if the contractor commits, suffer or permit any breach of any of the provision of the contract on his part to be performed or observed or persist in any of the above mentioned breaches of the contract for 14 days after notice in writing shall have been given to the contractor by the Engineer In-charge requiring such breach to be remedied or if the contractor shall abandon the work or if the contractor during the continuance of the contract shall become bankrupt, make any arrangement or composition with his creditors, or permit any execution to be levied or go into liquidation whether compulsory or voluntary, not being merely a voluntary liquidation for the purpose of amalgamation or

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reconstruction; then, in each of the above mentioned cases the owner shall have the power to enter upon the work and take possession thereof and all materials, temporary works, construction plants and stock thereon and to revoke the contractor's license to use the same and to complete the work by his agents, other contractors or work men or to relate the same upon any terms and to such other person, firm or corporation as the owner in his absolute discretion may think proper to employ and for the purpose aforesaid to use or authorize the use of any materials, temporary work, construction plant and stock as aforesaid without making payment or allowance to the contractor for the said materials other than such as may be certified in writing for the Engineer In charge to be reasonable.

The above provisions expressly provide for owner's right to take possession on site and work in whatever condition the same exists at the time of breach or breaches as listed herein above may have been committed by the contractor. The clause further provides that in getting the job executed any additional payments or extra cost incurred shall be recovered from the dues of the contractor.

- (iii) Owner may do part of work: In case the contractor shall fail to comply with any instructions given in accordance with the provisions of contract, owner has the alternative right instead of assuming charge of entire work to place additional labour force, tools, equipment and materials on such parts of the work as the owner may designate or also engage another contractor to carry out the work. In such a case the owner shall deduct from the amount which otherwise might become due to the contractor the cost of such work and material with 10% added to cover all departmental charges and should the total amount thereof exceed the amount due to the contractor, the contractor is contractually bound to pay the difference to the owner.
 - (iv) Replacement of defective parts and materials: Owner reserves right to make good, alter, reconstruct or remove such works as may be found to be defective or unsound or imperfect or inferior to the quality specified. The owner is required to give a notice to the contractor for 7 days to remove any defects or deficiencies, pointed out in the said notice and upon failure of the contractor to do so to proceed with the above mentioned remedies. In the event of the owner taking charge of repairs / replacements as aforesaid, the cost incurred thereon becomes recoverable from the contractor.
- 29.5 The clause under reference further provides for the contractor's full and extreme liability to be satisfied by the payments to the owner of extra costs of such replacements procured including erection / installation as provided for in the contract; such extra cost being the ascertained difference between the price paid

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by the owner for such replacements and the contract price portion for such defective plants and repayments of any sum payable by the owner to the contractors in respect of such defective plant.


- 29.6 In terms of the aforementioned provisions of the contract MNGL, in exercise of its rights under the contract, may come across situations, where it may have to take a part of work off from the contractor and get the same done through an alternative agency. However, such off-loading of work can be in part or it can be for the entire work awarded to the contractor and the decision in this regard would rest on various factors having major effect on such decision. Some of the factors are the progress of work at site, poor mobilization of resources, frequent defects in the executed work, financial constraints of the contractor and ill behaviour of the representatives of the contractor.
- 29.7 The contractual conditions amply provide for recovery of any sums spent in excess of contract value for getting the work executed through an alternative agency.
- 29.8 Inspection and Rejection of goods by Consignee When goods are rejected by consignee, the supplier shall be intimated promptly with the details of such rejected goods with reasons, also giving locations where such goods are lying at the risk and cost of the party. The party will be called upon either to remove the goods or to give instructions to its disposal within 14 days and in case of dangerous and perishable goods within 48 hours failing which the consignee will return the goods to the party on freight to pay or dispose it at the site on contractor's risk and cost. The purchaser shall be entitled to recover handling and storage charges for the period during which the rejected goods are not removed @ 5% of the value of goods for each month or part of a month till the rejected goods are finally disposed off.

30.0 RESOLUTION OF DISPUTE (ARBITRATION)

Except as otherwise provided in the Contract where decision of Engineer-in-Charge is final and binding on the contractor, in the event of any claims, disputes or differences arising out of or in connection with this Agreement, the same shall be settled through Arbitration as provided hereunder. The disputing Party shall serve a written notice of dispute to the other Party within fifteen (15) days of arising of such claim, dispute or difference.

Pursuant to such notice, the Parties hereto shall promptly and in good faith attempt to resolve such claim or dispute or difference through discussions and negotiations with a view to bring out an amicable resolution and settlement.

If the said claim or dispute or difference is not resolved through discussions and negotiations within thirty (30) days from the written notice of dispute, then either

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Party may give notice in writing to the other Party of its intention to commence arbitration proceedings, as hereinafter provided, as to the matter in dispute, difference or claim, and no arbitration proceedings in respect of this matter shall commence unless such written notice of arbitration is served upon the other Party.

The Arbitral Tribunal shall comprise of a one (1) Arbitrator. The Arbitrator shall be nominated by Supplier / Contractor / Service Provider from a list provided by MNGL of three (3) persons from its panel of arbitrators. Depending on the nature of the claim or dispute, the list of persons from MNGL shall comprise of persons with the requisite technical expertise and relevant experience.

Supplier / Contractor / Service Provider waives any and all of its objections to the said persons being former employees of MNGL or of any other public sector entity or with regard to such persons holding shares in the Company.

If Supplier / Contractor / Service Provider fails to nominate the Sole Arbitrator within a period of fifteen (15) days from receipt of such list of persons by MNGL, then it shall be construed to be a waiver in respect of the said persons on part of Supplier / Contractor / Service Provider and MNGL shall be free to nominate one (1) of the persons from the said list to be the Sole Arbitrator.

The arbitration proceedings shall be held in accordance with the provisions of the Indian Arbitration and Conciliation Act, 1996, as amended from time to time. The seat of the arbitration proceedings shall be in Pune and shall be conducted in English Language.


The decision of such arbitration proceedings shall be binding and conclusive upon the Parties.

The fees of the Arbitral Tribunal shall be determined as per 4th Schedule of the Arbitration and Conciliation Act, 1996, as amended from time to time, and the Parties to the arbitration proceedings shall equally share the costs and expenses of any such arbitration proceedings.

Notwithstanding any reference to arbitration herein, the Parties shall continue to perform their respective obligations under the Agreement unless they otherwise mutually agree in writing.

31.0 GROUNDS OF TERMINATION

MNGL shall be at liberty to terminate the contracts at its sole discretion on any of the following grounds:

| | |
|--|--|
|  <p>MAHARASHTRA NATURAL GAS LIMITED</p> | <p>TENDER FOR ANNUAL RATE CONTRACT FOR SUPPLY, INSTALLATION, TESTING, COMMISSIONING, OPERATION AND COMPREHENSIVE MAINTENANCE OF 1200 SCM H GED CNG 3-STAGE COMPRESSOR PACKAGES</p> <p>Bid No.: MNGL/CP/2022-23/215</p> |
|--|--|

- (i) If the contractor has got the contract by fraudulent means or suppression of material fact, which would have bearing on the award of contract.
- (ii) The contractor goes insolvent
- (iii) If the continuance of the business is stopped by any court of law or any authority of Government.
- (iv) In case the contractor is the company and has been wound up by the court.
- (v) In case of proprietorships firm, if the firm gets dissolved.
- (vi) In case of partnership firm, if the partner goes mentally insane.
- (vii) The contractor breaches any of the provision of the contract then MNGL shall have liberty to terminate the contract.

The termination of the contract should be done after following the due process as per provisions of the contract.

32.0 SUBLETTING AND ASSIGNMENT

The contractor shall not, save with previous consent in writing of the owner i.e. MNGL, 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.

33.0 APPLICABLE LAW


The contract shall be governed and interpreted in accordance with laws of India and court of competent jurisdiction of Pune shall have exclusive jurisdiction to try such suits.

34.0 ISSUE OF ESSENTIALITY CERTIFICATE

No essentiality certificate shall be issued by MNGL.

35.0 WITHHOLDING, ACCOUNTING AND TAX REQUIREMENTS

Contractor/ supplier agrees for withholding from wages and salaries of its agents' servants or employees all sums required to be withheld by the laws of Republic of India or any other agency having jurisdiction over the area where Contractor/ supplier is conducting operations and to pay the same promptly and directly when due to the proper authority. Contractor/ supplier further agrees to comply with all accounting and reporting requirements of any Nation having jurisdiction over the subject matter hereof and to conform to such laws and regulations and to pay the cost of such compliance. If requested, Contractor/ supplier will furnish the evidence of payment of applicable taxes, in the country (ies) of the

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|  <p>MAHARASHTRA NATURAL GAS LIMITED</p> | <p>TENDER FOR ANNUAL RATE CONTRACT FOR SUPPLY, INSTALLATION, TESTING, COMMISSIONING, OPERATION AND COMPREHENSIVE MAINTENANCE OF 1200 SCMH GED CNG 3-STAGE COMPRESSOR PACKAGES</p> <p>Bid No.: MNGL/CP/2022-23/215</p> |
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Contractor/ supplier's and his sub-contractor/ supplier(s) and expatriate employees.

36.0 FALL CLAUSE

Fall clause shall be applicable for this tender as per relevant clause in GCC.

37.0 LIEN

Contractor/ supplier shall ensure that the Scope of Supply supplied under the Contract shall be free from any claims of title /liens from any third party. In the event of such claims by any party, Contractor/ supplier shall at his own cost defend, indemnify and hold harmless Owner or its authorized representative from such disputes of title/liens, costs, consequences etc.

38.0 COORDINATION WITH OTHER AGENCIES

Work shall be carried out in such a manner that the work of other agencies operating at the site is not hampered due to any action of the Contractor/ supplier. Proper coordination with other agencies will be Contractor/ suppliers responsibility. In case of any dispute, the decision of Engineer-in-Charge shall be final and binding on the Contractor/ supplier.

39.0 STORAGE AND PRESERVATION


Contractor shall be fully responsible for safe custody, storage and preservation of all the supplies and materials/equipment required for carrying out the work until handing over of the complete facility to the Purchaser at site at no extra cost.

If required, materials /equipment shall be stored in Purchaser's designated store till further handing over the supplies, materials / equipment to contractor for installation, testing, erection of the equipment.

After taking over the equipment/materials from purchaser, contractor shall be fully responsible for safe custody, storage, insurance and preservation of all the supplies and materials/equipment required for carrying out the work until handing over of the complete facility to the Purchaser.

Further, activities like loading/ unloading at store as well as at site, re-transportation of material, equipment, tools & tackles etc. until handing over of the complete facility to the Purchaser shall be arranged by contractor and in case of re-transportation, payment shall be made as per SOR items relevant for the same.

Note : After unloading at site/ store & processing of documents, compressor watch & guard and insurance will be in scope of MNGL. However, preservation

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|  <p>MAHARASHTRA NATURAL GAS LIMITED</p> | <p>TENDER FOR ANNUAL RATE CONTRACT FOR SUPPLY, INSTALLATION, TESTING, COMMISSIONING, OPERATION AND COMPREHENSIVE MAINTENANCE OF 1200 SCM H GED CNG 3-STAGE COMPRESSOR PACKAGES</p> <p>Bid No.: MNGL/CP/2022-23/215</p> |
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will be in scope of vendor including guarantee/ warranty as per clause no. 20.0 of GCC

40.0 LOCAL CONDITION

It will be imperative for each bidder to fully inform himself of all local conditions and factors which may have any effect on the execution of the works covered under these documents and specifications. In their own interest the Bidders are requested to familiarize themselves with the Income Tax Act. 1961, the Companies Act 1956, Custom Act 1962 and other related Acts and Laws prevalent in India. The Owners shall not entertain any request for clarification from the Bidders, regarding such local conditions.

It must be understood and agreed that such factors may have properly been Investigated and considered while submitting the bids. No claim for financial Adjustment to the Contract awarded under these specifications and documents will be entertained by the Owner. Neither any Change in the time schedule of the Contract nor any financial adjustment arising therefore shall be permitted by the Owner which are based on the lack of such clear information to its effect, the cost or time schedule.


The activities listed in the scope of proposal in this document as well as in the price break-up shall be only broad categories and shall in no way absolve the Bidder in executing and completing of the turnkeys' philosophy of the Owner within the quoted Lumpsum price. Any item/equipment/services/ activities/ taxes/duties, if not specifically identified in the Bid document or in the offer but is necessary for the completion of work, shall be deemed to be included in the quoted Lumpsum price and no extra charges are payable by the Owner.

The Purchaser/Consultant will not provide any power and water connection and the Contractor/ supplier shall obtain necessary power and water connection from relevant authority and will pay its uses charges. Purchaser will not own the responsibility for providing the land.

Other terms and condition will be applicable as specified elsewhere in **General Condition of Contract and Instruction to bidder.**

41.0 DEDUCTION AT SOURCE

Bidder may note that if any tax is deductible at source as Permanently Indian Income Tax Law, the same will be so deducted before releasing any payment of the bidders. Accordingly, bidder shall have the responsibility to check and include such provisions of taxes in their prices.


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|  <p>MAHARASHTRA NATURAL GAS LIMITED</p> | <p>TENDER FOR ANNUAL RATE CONTRACT FOR SUPPLY, INSTALLATION, TESTING, COMMISSIONING, OPERATION AND COMPREHENSIVE MAINTENANCE OF 1200 SCMH GED CNG 3-STAGE COMPRESSOR PACKAGES</p> <p>Bid No.: MNGL/CP/2022-23/215</p> |
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Owner will release the payment to the Contractor/ supplier after effecting deductions as per applicable law in force & after offsetting all dues to the Owner payable by the Contractor under the Contract.

42.0 SEPERATE CONTRACTS FOR SUPPLY, INSTALLATION, COMMISSIONING, TESTING AND OPERATIONS & COMPREHENSIVE MAINTENANCE


Two separate contracts shall be issued to successful bidders against this tender as below:

- i) Supply, Installation, Commissioning, Testing
- ii) Operations & comprehensive maintenance Services

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|  <p>MAHARASHTRA NATURAL GAS LIMITED</p> | <p>TENDER FOR ANNUAL RATE CONTRACT FOR SUPPLY, INSTALLATION, TESTING, COMMISSIONING, OPERATION AND COMPREHENSIVE MAINTENANCE OF 1200 SCMH GED CNG 3-STAGE COMPRESSOR PACKAGES</p> <p>Bid No.: MNGL/CP/2022-23/215</p> |
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SECTION – V

FORMS & FORMATS

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|  MAHARASHTRA NATURAL GAS LIMITED | TENDER FOR ANNUAL RATE CONTRACT FOR SUPPLY, INSTALLATION, TESTING, COMMISSIONING, OPERATION AND COMPREHENSIVE MAINTENANCE OF 1200 SCMH GED CNG 3-STAGE COMPRESSOR PACKAGES Bid No.: MNGL/CP/2022-23/215 |
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|  MAHARASHTRA NATURAL GAS LIMITED | TENDER FOR ANNUAL RATE CONTRACT FOR SUPPLY, INSTALLATION, TESTING, COMMISSIONING, OPERATION AND COMPREHENSIVE MAINTENANCE OF 1200 SCMH GED CNG 3-STAGE COMPRESSOR PACKAGES Bid No.: MNGL/CP/2022-23/215 |
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FORM F-1
BIDDER'S GENERAL INFORMATION
(Information must be provided on bidder's letterhead)

To,
M/s MAHARASHTRA NATURAL GAS LIMITED
2nd Floor, Pride Purple Coronet,
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: _____

| | |
|---|--|
|  MAHARASHTRA NATURAL GAS LIMITED | TENDER FOR ANNUAL RATE CONTRACT FOR SUPPLY, INSTALLATION, TESTING, COMMISSIONING, OPERATION AND COMPREHENSIVE MAINTENANCE OF 1200 SCMH GED CNG 3-STAGE COMPRESSOR PACKAGES Bid No.: MNGL/CP/2022-23/215 |
|---|--|

- 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 name 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)

Note:

- 1 The above required information is required on the bidder's letterhead.
- 2 Bidders have to 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**

| | |
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|  MAHARASHTRA NATURAL GAS LIMITED | TENDER FOR ANNUAL RATE CONTRACT FOR SUPPLY, INSTALLATION, TESTING, COMMISSIONING, OPERATION AND COMPREHENSIVE MAINTENANCE OF 1200 SCMH GED CNG 3-STAGE COMPRESSOR PACKAGES Bid No.: MNGL/CP/2022-23/215 |
|---|--|

**FORM F-2
BID BOND PROFORMA / PROFORMA FOR EMD IN THE FORM OF BG**

Bank Guarantee No.:

Date:

To
M/s MAHARASHTRA NATURAL GAS LIMITED
2nd Floor, Pride Purple Coronet,
Baner Road, Baner,
Pune – 411045

TENDER NO. _____ FOR CARRYING OUT _____
WHEREAS..... (HEREINAFTER CALLED 'THE Bidder') has
submitted his Bid dated..... for carrying out of
(Herein after called 'The Bid') KNOW ALL MEN by these presents that WE
..... (hereinafter called 'The Bank') are bound unto
MAHARASHTRA NATURAL GAS LIMITED, 2nd Floor, Pride Purple Coronet, Baner
Road, Baner, Pune – 411045 (herein after called 'MNGL') in the sum of
..... for which payment well and truly made to MNGL, the BANK
binds itself its successor and assigns by these presents. Sealed with the Common Seal
of the said BANK this day of2023.

THE CONDITIONS of this obligation are:

1. If the Bidder withdraws his Bid during the period of Bid validity specified by the Bidder on the Bid Form; or
2. If the Bidder, having been notified of the acceptance of his bid by MNGL during the period of bid validity
 - a) Fails or refuses to execute the Contract Form, if required: or
 - b) Fails or refuses to furnish the PERFORMANCE SECURITY in accordance with the Instructions to the Bidder.

We undertake to pay MNGL up to the above amount upon receipt of its first written demand, without MNGL having to substantiate its demand, provided that in its demand MNGL will note the amount claimed by it is due to it owing to the occurrence of one or both of the two conditions specifying the occurred condition or conditions.


The Guarantee will remain in force up to and including 60 days after the period of bid validity and any demand in respect thereof should reach the BANK not later than the above date.

(Signature of the BANK)

(Signature of the Witness)

Name & address of Witness:

Date:

| | |
|--|--|
|  <p>MAHARASHTRA NATURAL GAS LIMITED</p> | <p>TENDER FOR ANNUAL RATE CONTRACT FOR SUPPLY, INSTALLATION, TESTING, COMMISSIONING, OPERATION AND COMPREHENSIVE MAINTENANCE OF 1200 SCM GED CNG 3-STAGE COMPRESSOR PACKAGES</p> <p>Bid No.: MNGL/CP/2022-23/215</p> |
|--|--|

BID BOND PROFORMA / PROFORMA FOR EMD IN THE FORM OF "LETTER OF CREDIT"

To,
M/s MAHARASHTRA NATURAL GAS LIMITED
2nd Floor, Pride Purple Coronet,
Baner Road, Baner,
Pune – 411045

Sub: ANNUAL RATE CONTRACT FOR SUPPLY, INSTALLATION, TESTING,
COMMISSIONING, OPERATION AND COMPREHENSIVE MAINTENANCE OF 1200
SCMH GED CNG 3-STAGE COMPRESSOR PACKAGES


Tender no: MNGL/CP/2022-23/215

Irrevocable and confirmed Letter of Credit No. Amount: Rs. ____

Validity of this Irrevocable: (in India)
Letter of Credit (2 months beyond validity of Offer)

Dear Sir,

1. You are here by authorized to draw on (Name of Applicant with full address) for a sum not exceeding available by your demand letter (draft) on them at sight drawn for Rs..... accompanied by a certificate by MNGL, with the Tender No. duly incorporated therein, that one or more of the following conditions has/have occurred, specifying the occurred condition(s):
 - (i) The Bidder withdraws its Bid during the period of Bid validity or any extension thereof duly agreed by the Bidder.
 - (ii) The Bidder varies or modifies its Bid in a manner not acceptable to MNGL during the period of bid validity or any extension thereof duly agreed by the Bidder.
 - (iii) The Bidder, having been notified of the acceptance of its Bids,
 - (a) Fails or refuses to execute the Supply Order/Contract
 - (b) Fails or refuses to furnish the Contract Performance Guarantee within 30 days before expiry of Bid Security.
 - (c) Fails to accept arithmetic corrections as per tender conditions.
2. This Irrevocable Letter of Credit has been established towards Bid Security Tender No for..... (Item)


| | |
|--|--|
|  MAHARASHTRA NATURAL GAS LIMITED | TENDER FOR ANNUAL RATE CONTRACT FOR SUPPLY, INSTALLATION, TESTING, COMMISSIONING, OPERATION AND COMPREHENSIVE MAINTENANCE OF 1200 SCMH GED CNG 3-STAGE COMPRESSOR PACKAGES Bid No.: MNGL/CP/2022-23/215 |
|--|--|

3. We hereby guarantee to protect the Drawers, Endorsers and bonafide holders from any consequences, which may arise in the event of the non-acceptance or non-payment of Demand Letter (draft) in accordance with the terms of this credit.
4. This Credit is issued subject to the Uniform Customs and Practices for Documentary Credits (1993 Revised) International Chamber of Commerce Brochure No. 500.
5. Please obtain reimbursement as under:
6. All foreign as well as Indian bank charges will be on the account of M/s.
(Applicant)

FOR

Authorized Signature
(Original Bank)

Counter Signature

| | |
|--|--|
|  MAHARASHTRA NATURAL GAS LIMITED | TENDER FOR ANNUAL RATE CONTRACT FOR SUPPLY, INSTALLATION, TESTING, COMMISSIONING, OPERATION AND COMPREHENSIVE MAINTENANCE OF 1200 SCMH GED CNG 3-STAGE COMPRESSOR PACKAGES Bid No.: MNGL/CP/2022-23/215 |
|--|--|

**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 ANNUAL RATE CONTRACT FOR SUPPLY, INSTALLATION, TESTING, COMMISSIONING, OPERATION AND COMPREHENSIVE MAINTENANCE OF 1200 SCMH GED CNG 3-STAGE COMPRESSOR PACKAGES Bid No.: MNGL/CP/2022-23/215 |
|--|--|

**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 ANNUAL RATE CONTRACT FOR SUPPLY, INSTALLATION, TESTING, COMMISSIONING, OPERATION AND COMPREHENSIVE MAINTENANCE OF 1200 SCMH GED CNG 3-STAGE COMPRESSOR PACKAGES Bid No.: MNGL/CP/2022-23/215 |
|--|--|

**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 ANNUAL RATE CONTRACT FOR SUPPLY, INSTALLATION, TESTING, COMMISSIONING, OPERATION AND COMPREHENSIVE MAINTENANCE OF 1200 SCMH GED CNG 3-STAGE COMPRESSOR PACKAGES Bid No.: MNGL/CP/2022-23/215 |
|--|--|

**FORM F-5
DEVIATION FORM
(On Bidder's letter head)**

To,
M/s MAHARASHTRA NATURAL GAS LIMITED
2nd Floor, Pride Purple Coronet,
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 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./ Cls. 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 are fully complied by the bidder.

(Signature of the bidder)

| | |
|---|---|
|  MAHARASHTRA NATURAL GAS LIMITED | TENDER FOR ANNUAL RATE CONTRACT FOR SUPPLY, INSTALLATION, TESTING, COMMISSIONING, OPERATION AND COMPREHENSIVE MAINTENANCE OF 1200 SCM GED CNG 3-STAGE COMPRESSOR PACKAGES Bid No.: MNGL/CP/2022-23/215 |
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**FORM F-6
DECLARATION ON TENDER DOCUMENT DOWNLOADED
(on Bidder's letter head)**

No.

Date:

To,
M/s MAHARASHTRA NATURAL GAS LIMITED
2nd Floor, Pride Purple Coronet,
Baner Road, Baner,
Pune – 411045


Subject: TENDER FOR ANNUAL RATE CONTRACT FOR SUPPLY, INSTALLATION, TESTING, COMMISSIONING, OPERATION AND COMPREHENSIVE MAINTENANCE OF 1200 SCM GED CNG 3-STAGE COMPRESSOR PACKAGES, Corrigendum & Reply to bidder's queries etc.

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 tender terms & conditions are acceptable to us and any deviation other than mentioned in deviation Form F-5 is not to be taken into account.

Yours faithfully,

Signature
Name & Designation
For and on behalf of

| | |
|--|---|
|  <p>MAHARASHTRA NATURAL GAS LIMITED</p> | <p>TENDER FOR ANNUAL RATE CONTRACT FOR SUPPLY, INSTALLATION, TESTING, COMMISSIONING, OPERATION AND COMPREHENSIVE MAINTENANCE OF 1200 SCMH GED CNG 3-STAGE COMPRESSOR PACKAGES</p> <p>Bid No.: MNGL/CP/2022-23/215</p> |
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**FORM F-7
PROFORMA FOR LETTER OF AUTHORITY**

No.

Date:

To,
M/s MAHARASHTRA NATURAL GAS LIMITED
2nd Floor, Pride Purple Coronet,
Baner Road, Baner,
Pune – 411045

Subject: TENDER FOR ANNUAL RATE CONTRACT FOR SUPPLY, INSTALLATION, TESTING, COMMISSIONING, OPERATION AND COMPREHENSIVE MAINTENANCE OF 1200 SCMH GED CNG 3-STAGE COMPRESSOR PACKAGES

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.

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|  <p>MAHARASHTRA NATURAL GAS LIMITED</p> | <p>TENDER FOR ANNUAL RATE CONTRACT FOR SUPPLY, INSTALLATION, TESTING, COMMISSIONING, OPERATION AND COMPREHENSIVE MAINTENANCE OF 1200 SCMH GED CNG 3-STAGE COMPRESSOR PACKAGES</p> <p>Bid No.: MNGL/CP/2022-23/215</p> |
|---|---|

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


To,
M/s MAHARASHTRA NATURAL GAS LIMITED
2nd Floor, Pride Purple Coronet,
Baner Road, Baner,
Pune – 411045

Subject: TENDER FOR ANNUAL RATE CONTRACT FOR SUPPLY, INSTALLATION, TESTING, COMMISSIONING, OPERATION AND COMPREHENSIVE MAINTENANCE OF 1200 SCMH GED CNG 3-STAGE COMPRESSOR PACKAGES

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


We also confirm that we have not been put on holiday / ban by any Government Organization / Public Sector or their joint ventures/ MNGL for any forgery, Corrupt or Fraudulent Practice or unethical behaviour.

SEAL AND SIGNATURE OF BIDDER

| | |
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|  <p>MAHARASHTRA NATURAL GAS LIMITED</p> | <p>TENDER FOR ANNUAL RATE CONTRACT FOR SUPPLY, INSTALLATION, TESTING, COMMISSIONING, OPERATION AND COMPREHENSIVE MAINTENANCE OF 1200 SCMH GED CNG 3-STAGE COMPRESSOR PACKAGES</p> <p>Bid No.: MNGL/CP/2022-23/215</p> |
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**Form F-9
DETAILS OF LITIGATION
(on Bidder's letter head)**

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

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|  MAHARASHTRA NATURAL GAS LIMITED | TENDER FOR ANNUAL RATE CONTRACT FOR SUPPLY, INSTALLATION, TESTING, COMMISSIONING, OPERATION AND COMPREHENSIVE MAINTENANCE OF 1200 SCMH GED CNG 3-STAGE COMPRESSOR PACKAGES Bid No.: MNGL/CP/2022-23/215 |
|---|--|

**FORM F- 10
COVERING LETTER
(ON LETTER HEAD)**

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: (Signature)

Date: Name of Authorised Signatory
Membership No.

Encl.: As above

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

| | |
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|  MAHARASHTRA NATURAL GAS LIMITED | TENDER FOR ANNUAL RATE CONTRACT FOR SUPPLY, INSTALLATION, TESTING, COMMISSIONING, OPERATION AND COMPREHENSIVE MAINTENANCE OF 1200 SCM GED CNG 3-STAGE COMPRESSOR PACKAGES Bid No.: MNGL/CP/2022-23/215 |
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**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.

| | |
|---|---|
|  <p>MAHARASHTRA NATURAL GAS LIMITED</p> | <p>TENDER FOR ANNUAL RATE CONTRACT FOR SUPPLY, INSTALLATION, TESTING, COMMISSIONING, OPERATION AND COMPREHENSIVE MAINTENANCE OF 1200 SCMH GED CNG 3-STAGE COMPRESSOR PACKAGES</p> <p>Bid No.: MNGL/CP/2022-23/215</p> |
|---|---|

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"

| | |
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|  MAHARASHTRA NATURAL GAS LIMITED | TENDER FOR ANNUAL RATE CONTRACT FOR SUPPLY, INSTALLATION, TESTING, COMMISSIONING, OPERATION AND COMPREHENSIVE MAINTENANCE OF 1200 SCMH GED CNG 3-STAGE COMPRESSOR PACKAGES Bid No.: MNGL/CP/2022-23/215 |
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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/service s 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:

[Sign. Of authorized signatory of bidder]


Date:

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 orders)
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.

| | |
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|  <p>MAHARASHTRA NATURAL GAS LIMITED</p> | <p>TENDER FOR ANNUAL RATE CONTRACT FOR SUPPLY, INSTALLATION, TESTING, COMMISSIONING, OPERATION AND COMPREHENSIVE MAINTENANCE OF 1200 SCM GED CNG 3-STAGE COMPRESSOR PACKAGES</p> <p>Bid No.: MNGL/CP/2022-23/215</p> |
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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 ANNUAL RATE CONTRACT FOR SUPPLY, INSTALLATION, TESTING, COMMISSIONING, OPERATION AND COMPREHENSIVE MAINTENANCE OF 1200 SCMH GED CNG 3-STAGE COMPRESSOR PACKAGES Bid No.: MNGL/CP/2022-23/215 |
|---|--|

**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) |
| | | | | | | |
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Bidder shall submit this form along with relevant document with proper numbering.

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

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|  <p>MAHARASHTRA NATURAL GAS LIMITED</p> | <p>TENDER FOR ANNUAL RATE CONTRACT FOR SUPPLY, INSTALLATION, TESTING, COMMISSIONING, OPERATION AND COMPREHENSIVE MAINTENANCE OF 1200 SCMH GED CNG 3-STAGE COMPRESSOR PACKAGES</p> <p>Bid No.: MNGL/CP/2022-23/215</p> |
|---|---|

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


To,
M/s MAHARASHTRA NATURAL GAS LIMITED
2nd Floor, Pride Purple Coronet,
Baner Road, Baner,
Pune – 411045

**Subject: TENDER FOR ANNUAL RATE CONTRACT FOR SUPPLY, INSTALLATION,
TESTING, COMMISSIONING, OPERATION AND COMPREHENSIVE MAINTENANCE
OF 1200 SCMH GED CNG 3-STAGE COMPRESSOR PACKAGES**

| Sr. No. | Section / Tender page no. | Clause no. | Subject | Bidder's Query |
|---------|------------------------------|------------|---------|----------------|
| | | | | |
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NOTE: The Pre-Bid Queries may be sent by e-mail, before pre-bid meeting due date, to MNGL. Editable copy of queries may be enclosed while sending signed pre bid queries.

SEAL AND SIGNATURE OF BIDDER


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|  MAHARASHTRA NATURAL GAS LIMITED | TENDER FOR ANNUAL RATE CONTRACT FOR SUPPLY, INSTALLATION, TESTING, COMMISSIONING, OPERATION AND COMPREHENSIVE MAINTENANCE OF 1200 SCMH GED CNG 3-STAGE COMPRESSOR PACKAGES Bid No.: MNGL/CP/2022-23/215 |
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**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 |


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|  MAHARASHTRA NATURAL GAS LIMITED | TENDER FOR ANNUAL RATE CONTRACT FOR SUPPLY, INSTALLATION, TESTING, COMMISSIONING, OPERATION AND COMPREHENSIVE MAINTENANCE OF 1200 SCMH GED CNG 3-STAGE COMPRESSOR PACKAGES Bid No.: MNGL/CP/2022-23/215 |
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| | | |
|----|---|-------|
| 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 tender document | Agree |
| 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 |

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|  MAHARASHTRA NATURAL GAS LIMITED | TENDER FOR ANNUAL RATE CONTRACT FOR SUPPLY, INSTALLATION, TESTING, COMMISSIONING, OPERATION AND COMPREHENSIVE MAINTENANCE OF 1200 SCMH GED CNG 3-STAGE COMPRESSOR PACKAGES Bid No.: MNGL/CP/2022-23/215 |
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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"). |

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|  <p>MAHARASHTRA NATURAL GAS LIMITED</p> | <p>TENDER FOR ANNUAL RATE CONTRACT FOR SUPPLY, INSTALLATION, TESTING, COMMISSIONING, OPERATION AND COMPREHENSIVE MAINTENANCE OF 1200 SCMH GED CNG 3-STAGE COMPRESSOR PACKAGES</p> <p>Bid No.: MNGL/CP/2022-23/215</p> |
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Note:

1. Bidder may attach any other docs, not in above list but relevant to this tender, at the specified link on the e-tendering portal.
2. Bidder has to upload the file as asked above on e-tender portal in .pdf format by keeping the file name as provide 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 describe in bid document) of the bidder.
4. 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.

Bidder have to 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.

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|  <p>MAHARASHTRA NATURAL GAS LIMITED</p> | <p>TENDER FOR ANNUAL RATE CONTRACT FOR SUPPLY, INSTALLATION, TESTING, COMMISSIONING, OPERATION AND COMPREHENSIVE MAINTENANCE OF 1200 SCMH GED CNG 3-STAGE COMPRESSOR PACKAGES</p> <p>Bid No.: MNGL/CP/2022-23/215</p> |
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Form F-17
CONTRACT PERFORMANCE BANK GUARANTEE
(To be stamped in accordance with Stamp Act)

To,
M/s MAHARASHTRA NATURAL GAS LIMITED
2nd Floor, Pride Purple Coronet,
Baner Road, Baner,
Pune – 411045

Dear Sir,

M/s _____ have been awarded the
work of _____ for Maharashtra Natural Gas
Limited, PUNE vide Purchase Order No. _____ dated _____.


The Contracts 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 guarantee executed by
Nationalized Bank, undertaking full responsibility to indemnify Maharashtra Natural Gas
Limited, 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 Limited 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

| | |
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|  <p>MAHARASHTRA NATURAL GAS LIMITED</p> | <p>TENDER FOR ANNUAL RATE CONTRACT FOR SUPPLY, INSTALLATION, TESTING, COMMISSIONING, OPERATION AND COMPREHENSIVE MAINTENANCE OF 1200 SCMH GED CNG 3-STAGE COMPRESSOR PACKAGES</p> <p>Bid No.: MNGL/CP/2022-23/215</p> |
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_____ 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.

Sheet 2 of 2


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.

| | |
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|  <p>MAHARASHTRA NATURAL GAS LIMITED</p> | <p>TENDER FOR ANNUAL RATE CONTRACT FOR SUPPLY, INSTALLATION, TESTING, COMMISSIONING, OPERATION AND COMPREHENSIVE MAINTENANCE OF 1200 SCMH GED CNG 3-STAGE COMPRESSOR PACKAGES</p> <p>Bid No.: MNGL/CP/2022-23/215</p> |
|---|---|

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 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

| | |
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|  <p>MAHARASHTRA NATURAL GAS LIMITED</p> | <p>TENDER FOR ANNUAL RATE CONTRACT FOR SUPPLY, INSTALLATION, TESTING, COMMISSIONING, OPERATION AND COMPREHENSIVE MAINTENANCE OF 1200 SCMH GED CNG 3-STAGE COMPRESSOR PACKAGES</p> <p>Bid No.: MNGL/CP/2022-23/215</p> |
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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 MAHARASHTRA NATURAL GAS LIMITED
2nd Floor, Pride Purple Coronet,
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

| | |
|--|--|
|  MAHARASHTRA NATURAL GAS LIMITED | TENDER FOR ANNUAL RATE CONTRACT FOR SUPPLY, INSTALLATION, TESTING, COMMISSIONING, OPERATION AND COMPREHENSIVE MAINTENANCE OF 1200 SCMH GED CNG 3-STAGE COMPRESSOR PACKAGES Bid No.: MNGL/CP/2022-23/215 |
|--|--|

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)

| | |
|--|---|
|  MAHARASHTRA NATURAL GAS LIMITED | TENDER FOR ANNUAL RATE CONTRACT FOR SUPPLY, INSTALLATION, TESTING, COMMISSIONING, OPERATION AND COMPREHENSIVE MAINTENANCE OF 1200 SCM H GED CNG 3-STAGE COMPRESSOR PACKAGES Bid No.: MNGL/CP/2022-23/215 |
|--|---|

ANNUAL RATE CONTRACT FOR SUPPLY, INSTALLATION, TESTING, COMMISSIONING, OPERATION AND COMPREHENSIVE MAINTENANCE OF 1200 SCM H GAS ENGINE DRIVEN CNG 3-STAGE COMPRESSOR PACKAGES

SECTION – VI SCHEDULE OF RATES

(Following are the format of the SORs for reference. The bidders are supposed to fill in the SORs, available on the e-tendering portal in the prescribed format.)

Note:


1. Scope of Supply, Work and other terms and conditions are strictly as per bid document.
2. Bidder to clearly indicate 'Quoted' / 'Not Quoted' against each SOR line item in the price column in the un-priced Schedule of Rates and submit the same in Un-priced part of the bid. Bidder to submit Price part of above Schedule of Rates in their Priced Bid.
3. Bidder must quote the price in Schedule of Rates format only. Bid submitted with changed format / description is liable to be rejected.
4. Bidder to quote price for each SOR line item.
5. Quoted rates are firm and fixed till complete execution of the entire contract.
6. Purchaser reserves the right to decrease/increase the Scope of Work as per provision of Bid document before & after award of contract.
7. Bidder must quote for complete scope as detailed in the bid document, bids submitted for part scope shall be considered as non-responsive and liable to be rejected.
8. Rates for Annual CAMC & Operations to be quoted within range as defined in clause no. 21 of SCC of Volume I of II of tender document
9. Bidder are advised to refer complete item description given in MR while quoting prices.
10. Notes given in Material Requisition must be referred by the bidder prior to filling price in SOR.

Tender Inviting Authority: Maharashtra Natural Gas Ltd.,Pune

Name of Work: "ANNUAL RATE CONTRACT FOR SUPPLY, INSTALLATION, TESTING, COMMISSIONING, OPERATION AND COMPREHENSIVE MAINTENANCE OF 1200 SCMH GED CNG 3-STAGE COMPRESSOR PACKAGES."

Tender No: MNGL/CP/2022-23/215


| <div> <div>Name of the Bidder/ Bidding Firm / Company :</div> <div></div> </div> | | | | | | | | | | |
|---|--|----------|---------------|--|--|--|------------|-------------------|----------------------------------|-----------------------|
| <div> <div>PRICE SCHEDULE / SCHEDULE OF RATES (SOR)</div> <div>(This BOQ template must not be modified/replaced by the bidder and the same should be uploaded after filling the relevant columns, else the bidder is liable to be rejected for this tender. Bidders are allowed to enter the Bidder Name and Values only)</div> </div> | | | | | | | | | | |
| NUMBER # | TEXT # | NUMBER # | TEXT # | NUMBER # | NUMBER | NUMBER | NUMBER | NUMBER | NUMBER # | TEXT # |
| Sl. No. | Item Description | Quantity | Units | Unit Price Ex-works including cost of imported raw material/ components & Customs Duty thereon, pkg/ fwd, but excluding Goods & Service Tax on finished goods Rs. P | Per Unit Freight upto Project Site by Road Including Transit Insurance | Per Unit Goods & Service Tax (GST) applicable in % | GST in Rs. | Per Unit FOT Site | TOTAL AMOUNT With Taxes in Rs. P | TOTAL AMOUNT In Words |
| 1 | 2 | 4 | 5 | 13 | 14 | 15 | 16 | 17 | 53 | 55 |
| 1.01 | Design, Engineering, Manufacturing, Supply (including packaging and forwarding, insurance, custom clearance, handling and unloading at port as well as at MNGL's stores / site of Skid mounted Gas Engine driven CNG Compressor Package with explosion proof electric & control panel of 1200 Sm3/h at 16 Bar (range 16 to 19 kg/cm2(g) with discharge pr. 255 kg/cm2(g) with 9 bank Priority panel. | 10 | Nos. | | | | - | 0.00 | 0.00 | INR Zero Only |
| 1.02 | Re-transportation of package & accessories if delivered at store to respective site including loading & unloading, transit insurance within Pune GA. | 10 | Nos. | | | | - | 0.00 | 0.00 | INR Zero Only |
| 1.03 | String test of complete compressor package along with Gas Engine and accessories at packagers' factory | 10 | Nos. | | | | - | 0.00 | 0.00 | INR Zero Only |
| 1.04 | Special tools & tackles (list & Price of each tools & tackles to be furnished by the bidder) | 10 | Set | | | | - | 0.00 | 0.00 | INR Zero Only |
| 1.05 | Design, Engineering, Manufacturing, Supply (including packaging and forwarding, insurance, custom clearance, handling and unloading at port as well as MNGL Stores / Site at Pune) of Screw type air compressor of capacity 7.5 kW, discharge pressure approx 13 kg/cm2g, 1000 water litre capacity air receiver and air dryer along with all accessories and auxiliaries. | 10 | Nos. | | | | - | 0.00 | 0.00 | INR Zero Only |
| 1.06 | Installation, commissioning & Field performance test of Compressor Package including air compressor at site. | 10 | Nos. | | | | - | 0.00 | 0.00 | INR Zero Only |
| 1.07 | Lump sum Annual operation charges per Compressor Package including air compressor for 1st year warrantee period inclusive of all manpower etc. | 10 | Nos. | | | | - | 0.00 | 0.00 | INR Zero Only |
| 1.08 | Lump sum Annual operation charges per Compressor Package including air compressor for second year i.e. after first year of warranty period inclusive of all manpower etc. | 10 | Nos. | | | | - | 0.00 | 0.00 | INR Zero Only |
| 1.09 | Lump sum Annual operation charges per Compressor Package including air compressor for third year i.e. after first year of warranty period & second year AMC inclusive of all manpower etc. | 10 | Nos. | | | | - | 0.00 | 0.00 | INR Zero Only |
| 1.10 | Lump sum Annual operation charges per Compressor Package including air compressor for fourth year i.e. after first year of warranty period & second & third year of AMC inclusive of all manpower etc. | 10 | Nos. | | | | - | 0.00 | 0.00 | INR Zero Only |
| 1.11 | Lump sum Annual operation charges per Compressor Package including air compressor for fifth year i.e. after first year of warranty period & second, third and fourth year of AMC inclusive of all manpower etc. | 10 | Nos. | | | | - | 0.00 | 0.00 | INR Zero Only |
| 1.12 | Lump sum Annual Maintenance charges per Compressor Package including air compressor for 1st year warrantee period inclusive of all manpower, spare and lubricant etc. | 10 | Nos. | | | | - | 0.00 | 0.00 | INR Zero Only |
| 1.13 | Lump sum Annual Maintenance charges per Compressor Package including air compressor for second year i.e. after first year of warranty period inclusive of all manpower, spare and lubricant, etc. | 10 | Nos. | | | | - | 0.00 | 0.00 | INR Zero Only |
| 1.14 | Lump sum Annual Maintenance charges per Compressor Package including air compressor for third year i.e. after first year of warranty period & second year AMC inclusive of all manpower, spare and lubricant, etc. | 10 | Nos. | | | | - | 0.00 | 0.00 | INR Zero Only |
| 1.15 | Lump sum Annual Maintenance charges per Compressor Package including air compressor for fourth year i.e. after first year of warranty period & second & third year of AMC inclusive of all manpower, spare and lubricant, etc. | 10 | Nos. | | | | - | 0.00 | 0.00 | INR Zero Only |
| 1.16 | Lump sum Annual Maintenance charges per Compressor Package including air compressor for fifth year i.e. after first year of warranty period & second, third and fourth year of AMC inclusive of all manpower, spare and lubricant, etc. | 10 | Nos. | | | | - | 0.00 | 0.00 | INR Zero Only |
| Total in Figures | | | | | | | | | 0.00 | INR Zero Only |
| Quoted Rate in Words | | | INR Zero Only | | | | | | | |

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|---|---|
|  <p>MAHARASHTRA NATURAL GAS LIMITED</p> | <p>TENDER FOR ANNUAL RATE CONTRACT FOR SUPPLY, INSTALLATION, TESTING, COMMISSIONING, OPERATION AND COMPREHENSIVE MAINTENANCE OF 1200 SCMH GED CNG 3-STAGE COMPRESSOR PACKAGES</p> <p>Bid No.: MNGL/CP/2022-23/215</p> |
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VOLUME-II OF II

C O N T E N T


| Sl. No. | Description |
|----------------|---|
| SECTION-I | MATERIAL REQUISITION & TECHNICAL SPECIFICATION FOR 1200 SCMH GAS ENGINE DRIVEN CNG 3-STAGE COMPRESSOR |

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|  MAHARASHTRA NATURAL GAS LIMITED | TENDER FOR ANNUAL RATE CONTRACT FOR SUPPLY, INSTALLATION, TESTING, COMMISSIONING, OPERATION AND COMPREHENSIVE MAINTENANCE OF 1200 SCM/H GED CNG 3-STAGE COMPRESSOR PACKAGES Bid No.: MNGL/CP/2022-23/215 |
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SECTION – I
MATERIAL REQUISITION
(MR No.: MNGL/CNG/2022-23/GED_COMPRESSOR/01)

Project : CNG & City Gas Distribution for Pune City
Item : GAS ENGINE DRIVEN CNG COMPRESSOR
Tender No. : MNGL/CP/2022-23/215
SOR A : PUNE GA


| Item No. | Description | Unit | Qty. | Remark |
|----------|---|------|------|--------|
| 1.01 | Design, Engineering, Manufacturing, Supply (including packaging and forwarding, insurance, custom clearance, handling and unloading at port as well as at MNGL's stores / site of Skid mounted Gas Engine driven CNG Compressor Package with explosion proof electric & control panel of 1200 Sm ³ /h at 16 Bar (range 16 to 19 kg/cm ² (g) with discharge pr. 255 kg/cm ² (g) with 9 bank Priority panel. | No. | 10 | |
| 1.02 | Re-transportation of package & accessories if delivered at store to respective site including loading & unloading, transit insurance within Pune GA. | No. | 10 | |
| 1.03 | String test of complete compressor package along with Gas Engine and | No. | | |
| 1.04 | Special tools & tackles (list & Price of each tools & tackles to be furnished by the bidder) | Set | | |
| 1.05 | Design, Engineering, Manufacturing, Supply (including packaging and forwarding, insurance, custom clearance, handling and unloading at port as well as MNGL Stores / Site at Pune) of Screw type air compressor of capacity 7.5 kW, discharge pressure approx. 13 kg/cm ² g, 1000 water liter capacity air receiver and air dryer along with all accessories and auxiliaries. | No. | | |
| 1.06 | Installation, commissioning & Field performance test of Compressor Package including air compressor at site. | No. | 10 | |
| 1.07 | Lump sum Annual operation charges per Compressor Package including air compressor for 1st year warrantee period inclusive of all manpower etc. | No. | 10 | |
| 1.08 | Lump sum Annual operation charges per | No. | 10 | |

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|  MAHARASHTRA NATURAL GAS LIMITED | TENDER FOR ANNUAL RATE CONTRACT FOR SUPPLY, INSTALLATION, TESTING, COMMISSIONING, OPERATION AND COMPREHENSIVE MAINTENANCE OF 1200 SCMH GED CNG 3-STAGE COMPRESSOR PACKAGES Bid No.: MNGL/CP/2022-23/215 |
|--|--|

| | | | | |
|------|---|-----|----|--|
| | Compressor Package including air compressor for second year i.e. after first year of warranty period inclusive of all manpower etc. | | | |
| 1.09 | Lump sum Annual operation charges per Compressor Package including air compressor for third year i.e. after first year of warranty period & second year AMC inclusive of all manpower etc. | No. | 10 | |
| 1.10 | Lump sum Annual operation charges per Compressor Package including air compressor for fourth year i.e. after first year of warranty period & second & third year of AMC inclusive of all manpower etc. | No. | 10 | |
| 1.11 | Lump sum Annual operation charges per Compressor Package including air compressor for fifth year i.e. after first year of warranty period & second, third and fourth year of AMC inclusive of all manpower etc. | No. | 10 | |
| 1.12 | Lump sum Annual Maintenance charges per Compressor Package including air compressor for 1st year warrantee period inclusive of all manpower, spare and lubricant etc. | No. | 10 | |
| 1.13 | Lump sum Annual Maintenance charges per Compressor Package including air compressor for second year i.e. after first year of warranty period inclusive of all manpower, spare and lubricant, etc. | No. | 10 | |
| 1.14 | Lump sum Annual Maintenance charges per Compressor Package including air compressor for third year i.e. after first year of warranty period & second year AMC inclusive of all manpower, spare and lubricant, etc. | No. | 10 | |
| 1.15 | Lump sum Annual Maintenance charges per Compressor Package including air compressor for fourth year i.e. after first year of warranty period & second & third year of AMC inclusive of all manpower, spare and lubricant, etc. | No. | 10 | |
| 1.16 | Lump sum Annual Maintenance charges per Compressor Package including air compressor for fifth year i.e. after first year of warranty period & second, third and fourth year of AMC inclusive of all manpower, spare and lubricant, etc. | No. | 10 | |

Notes:

1. Inspection shall be carried out by Owner or its authorized consultant/ TPI at owners cost.
2. Delivery location of the Compressors may change as per requirement and the same shall be intimated to the supplier before dispatch.

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|---|--|
|  MAHARASHTRA NATURAL GAS LIMITED | TENDER FOR ANNUAL RATE CONTRACT FOR SUPPLY, INSTALLATION, TESTING, COMMISSIONING, OPERATION AND COMPREHENSIVE MAINTENANCE OF 1200 SCMH GED CNG 3-STAGE COMPRESSOR PACKAGES Bid No.: MNGL/CP/2022-23/215 |
|---|--|

**TECHNICAL SPECIFICATION
NO. MNGL/TS/GED _ Compressor
FOR
GAS ENGINE DRIVEN CNG 3-STAGE
COMPRESSOR**

**DETAILED TECHNICAL SPECIFICATION & SCOPE OF WORK FOR GAS ENGINE DRIVEN CNG
COMPRESSOR (1200 SCMH)**

1.0 GENERAL

This specification along with applicable codes as referred describe the minimum requirements for Design, engineering, manufacturing, inspection, testing, packaging, supply, erection & commissioning including Field Performance Test at site along with one year operation & maintenance during warranty period and operation and maintenance for Four subsequent years of "1200 SCMH GAS ENGINE DRIVEN RECIPROCATING CNG COMPRESSOR PACKAGES" as required for dispensing CNG to vehicles at various locations. Various parts of this specification shall be read in conjunction with each other and in case where the different parts of this specification differ the more stringent requirement shall govern.

Any additional work/equipment or technical requirement not mentioned in the specification but required to make the offered system complete in accordance with the specification or required for safe operation, shall be deemed to be included in the offer and provided by the bidder, without any additional payment.

Bidder shall be responsible for supply, erection, commissioning, and field trial run. Noise level test and performance test of all packages at sites. The field trial run of the Gas Engine Compressor will be for minimum of 4 hours in which satisfactory performance of the package together with all accessories auxiliaries and controls shall be established for satisfactory performance for specified operating conditions.

The bidder must keep the compressors operational round the clock and all the expenditures including spares and consumables, oil etc. to make the compressors operational shall have to be borne by the bidder. The power required to run the compressors will be provided by MNGL. The contractor shall always maintain the compressors in sound mechanical condition. The contractor shall rectify the defects notified by MNGL immediately and should submit all the history log sheets and spares availability status along with the report in the format mutually agreed between MNGL and the bidder.

Periodic inspections of Safety Valves. Transmitters. Pressure vessel gauge and any other equipment as per statutory norms of Factory Act 1948. SMPV and Gas Cylinder Rules shall have to be carried out by the bidder at his own cost during the period of maintenance by the bidder. The inspections must be carried out by competent persons as per advice of Engineer-in-Charge and certificates have to be submitted to MNGL.

1.1 O&M REQUIREMENTS

The contractor must follow the OPERATION & MAINTENANCE REQUIREMENT as stated below but not limited to and ensure to provide trouble free services as defined in the bid documents.

i. Accommodation/Transportation/Medical

The contractor shall make his own arrangement for the accommodation of his personnel at respective locations and subsequent transportation arrangement for them from their place of residence to workplace or any other place as required and owner shall have no obligation in this respect.

ii. Discipline

The contractor shall be responsible for the discipline and good behavior of all his personnel deployed in the services contracted out and should any complaint be received against any of his employee, he shall arrange to replace such persons within 24 hours of notice issued by the Engineer-in-Charge. The decision of the Engineer –in-Charge in this matter shall be final and binding on the contractor.

iii. Gate pass / Identity Card

The contract shall arrange to supply / renew identity card to his workforce at his own cost, if so, required by OWNER for security or for any other reasons. Those contractor's personnel shall be required to carry their respective identity cards while on duty and produce on

demand.

iv. Right to Get Services Carried Out Through Other Agencies

Nothing contained herein shall restrict OWNER from accepting similar service from other agencies, at its discretion and at the risk and cost of the contractor, if the contractor fails to provide the said services any time.

The maintenance services shall be provided in terms of shift pattern or the round the clock basis as mentioned in the bid document.

v. MNGL will notify the start date for operation and Comprehensive Maintenance services

- After the successful completion of test run & commissioning, system taking over certificate shall be issued by the owner.
- The contractor shall deploy adequate number of technicians / supervisors / Engineers / helpers as well as tools, spares, consumables and equipment for smooth and proper maintenance of the Compressor supplied in terms of the contract. In case required to meet operational requirements, the contractor shall augment the same as per direction of Engineer-in-Charge. Contractor to depute following persons before starting maintenance of the compressor package.

| Manpower | Qualification | Nos. | Remarks |
|---|---|------|--|
| Operator | 12 th pass with ITI (min 2yrs relevant Exp.) | 4 | Site wise requirement |
| Supervisor (Safety & Maintenance) | Diploma in Mechanical/ Instrumentation/ Electrical/ Safety (min 4yrs relevant exp.) | 1 | GA wise requirement |
| Technician Compressor | ITI (min. 5 yrs. relevant exp.) | 3 | GA wise Requirement (fitter, Inst., Elect.) |
| Technician Gas Engine | ITI (min. 5 yrs. relevant exp.) | 1 | GA wise requirement |
| Helper | ITI (min 1yr. relevant exp.) | 2 | GA wise requirement |

Note: This tender is intended for Pune GA

- The contractor is required to carry out all services as mentioned in the Scope of Services and Schedule of Rates on all the 365 days including Sunday and all Holiday & around the clock.
- The contractor shall allow weekly rest and daily working hours to his workmen as per the relevant Act/Law/and Rule made there under. However, no work shall be left incomplete/unattended on any holiday/weekly rest. Technician/operators provided shall have minimum qualification of ITI. Contract in person or his authorized representative shall provide the services on daily basis to interact with Engineer-in- charge and deployed workman.
- The work force deployed by the contractor for maintenance service of Compressors, shall be of sound relevant technical professional expertise which is otherwise also essential from the safety point of view of the personnel of the contractor as well as for the installation.
- Contractor must ensure the safety of man and machine all the times. Damages of equipment due to negligence will be recovered as per the decision of Engineer-in-Charge, which will be final.
- Regarding work completion, the decision of the Engineer-In-Charge will be final and binding.
- The contractor shall make his own arrangements to provide all facilities like boarding and transport etc. to his workmen.
- All personnel of the contractor entering on work premises shall be properly and neatly dressed and shall wear uniform, badges while working on premises of the Owner including work sites.

- Contractor shall maintain proper record of his working employee's attendance and payment made to them.
- The contractor's representative/supervisor shall report daily to the Shift-in-Charge for day to day working.
- All the safety rules and regulations prevailing and applicable from time to time at the installations as directed by OWNER will be strictly adhered to by the contractor.
- It will be the responsibility of the contractor to pay as per the minimum wages of the appropriate state-government applicable under the Minimum Wage Act 1948.
- The services shall be provided in terms of shift pattern on the round the clock basis. The contractor is responsible to provide effective and efficient services in all shifts and assure that there is no disruption in the services for want of any resources.
- The contractor shall establish a central control room to operate 24 hours, seven days a week where complaint regarding non-performance of the Compressors in terms of the contract can be lodged. Further, the contractor shall deploy adequate number of technicians/ supervisors / engineers at various site offices in consultation with Engineer-in-Charge to provide trouble free maintenance of the Compressors.
- All arrangements for communication from control room to the contract person working on job under the services shall be the responsibility of the contractor, viz. cell phone / walky-talky.
- The successful bidder shall indemnify the Owner from any claim of the contract labor.
- The bidders / contractor who fail to furnish any proof in respect of separate PF Code/No of the concerned RPF Commissioner / Authority their bids shall be liable for rejection.
- All the jobs mentioned under scope of services shall be carried out as per sound engineering practices, work procedure documentation, recommendation of the manufacturer and as per the guidelines/direction of engineer-in-charge of authorized representative.
- Summary of breakdown hour's station wise with analysis shall be submitted to CNG control room on a monthly basis both in hard and soft form as per MNGL format.
- The contractor must submit the following documents on monthly basis along with the bill:
 - ❖ Preventative maintenance compliance report for that month along with the detailed service report.
 - ❖ Details of the compressor breakdown, summary of break down hours for that month and the cumulative break down hours along with breakdown response time.
 - ❖ Compressor parameter log-book for the month.
 - ❖ Certificate to be given by the bidder stating that they have complied with all the labor regulations and are following the minimum wages act.

Comprehensive Operation and Maintenance of compressor packages during the warranty period.

- All spares, consumables, lubricating oil, coolant required for carrying out preventive/ any type of maintenance shall be in the scope of supplier during the warranty period. The warranty spares shall be supplied by the vendor during the warranty period as per warranty clause.
- All tools, tackles and fixtures required for carrying out the above maintenance of the compressor shall be in scope of the bidder. The scope will also include handling equipment like crane, forklift, chain pulley block, etc required during the any maintenances activity.
- Any correspondence required to be made with the principal company or OEM or various offices shall be made by the bidder or bidder's agent. All arrangements like phone, fax, computer, Internet etc required for above correspondences shall be arranged by the bidder at his own cost.
- The periodic maintenance required to be done as per OEM recommendation shall be taken up promptly. The bidder shall provide the detailed preventative maintenance schedule along with
 - a) Estimated down time required for each type of maintenance schedule.

- b) List of spares and their quantities required for each type of maintenance schedule per compressor.
 - c) Type and number of man days required for each type of maintenance schedule per compressor.
- The bidder shall plan such maintenances during non-peak hours and in consultancy with the Engineer In Charge (EIC) of MNGL. Any maintenance that needs to be taken up shall be well planned with due approval of the EIC.
 - The bidder shall use only OEM's certified spares during maintenances. All spares shall be kept in sealed OEM stamped packages. The packages shall be opened in front of MNGL representative during maintenance. In case, the schedule maintenance of the OEM manual recommends checking and replace parts like valve spring, valve plates, piston rings etc. after certain time interval, same shall replace or used further only on approval from the MNGL representative. However, any untoward consequences for non-replacement of such parts shall be the responsibility of the bidder and spares, repair required to put back the unit into operation will be to bidder's account.
 - All routine and periodic checks / inspections required to be done as per OEM recommendation shall be done by the bidder. Instruments required for above inspection like Vernier caliper, micrometer screw gauge, fill gauges, bore gauge etc. shall be in scope of the bidder and these instruments shall be calibrated every year.
 - The contractor shall submit a copy of the daily / weekly / fortnightly / monthly/ bimonthly / quarterly and yearly performance report to the EIC in both soft and hard form. All stationery including the printed material such as compressor parameter logbook, complaint logbook, service report, break down summary report etc. shall be in scope of the bidder.
 - All the maintenance / inspection job carried out by the bidder shall be recorded in a service report and the report of the same shall be jointly signed by MNGL representative and submitted immediately after carrying out the maintenance. Service report format shall be approved by MNGL.
 - The EIC will be final authority to take decision with regards to maintenance or replacement of parts or any disagreement between the bidder and MNGL, during the execution of the contract.
 - The bidder shall carryout calibration of gas detectors and flame detectors every six months or earlier as per requirement or instruction of EIC of MNGL. Also, yearly calibration of all instruments such as pressure gauges, transmitters, switches, mass flow meters etc. shall be in the scope of the bidder. In addition to the above all safety relief valves shall also be tested and calibrated every year.
 - Calibration shall be done from government-approved laboratories and shall be carried out at least 15 days prior to the calibration due date.
 - The bidder shall keep 1 set of safety relief valves in spare for the purpose of calibration.
 - The bidder shall carry out thickness testing of pressure vessels periodically i.e. every year or earlier as per Gas Cylinder rules 2016 / Static & Mobile Pressure Vessels Rules.

Comprehensive Operation and Maintenance of compressor packages after warranty period for 4 years:

- All spares, consumables, oil and lubricants required for carrying out the Operation and Maintenance of the complete compressor packages for 4 years period after warranty period including periodic breakdown and any other materials required for operation and maintenance of the compressor packages, shall be provided by the bidder.
- All tools, tackles including special tools and tackles and fixtures required for carrying out the above maintenance of the compressor shall be in scope of the bidder. The scope will also include handling equipment's like crane, forklift, chain pulley block, etc. required during the any maintenances activity.

- Any correspondence required to be made with the principal company or OEM or various offices shall be made by the bidder or bidder's agent. All arrangements like phone, fax, computer, internet etc required for above correspondences shall be arranged by the bidder at his own cost.
- The periodic maintenance required to be done as per OEM recommendation shall be taken up promptly. The bidder shall plan such maintenances during non-peak hours and in consultancy with the Engineer-In-Charge (EIC) of MNGL. Any maintenance that needs to be taken up shall be well planned with due approval of the EIC. The scope shall include preparation of maintenance schedule for carrying out the maintenance during the contract period.
- In case, the schedule maintenance of the OEM manual recommends checking and replace parts like valve spring, valve plates, piston rings etc. after certain time interval, same shall replace or used further only on approval from the MNGL representative.
- All routine and periodic checks / inspections required to be done as per OEM recommendation shall be done by the bidder. Instruments required for above inspection like Vernier caliper, micrometer screw gauge, fill gauge, bore gauge etc. shall be in scope of the vender.
- The contractor shall submit a copy of the daily / weekly / fortnightly / monthly / bimonthly / quarterly and yearly performance report to the EIC in both soft and hard form

1.2 CODES & STANDARDS

The design, construction, manufacture, supply, testing and other general requirements of the compressor package equipment shall be strictly in accordance with the data sheets, API and other Codes as applicable, and shall comply fully with relevant National/ International standards, Indian Electricity Act, Indian electricity rules, regulations of insurance association of india and Factories Act while carrying out work as per this specification.

Any modification suggested by the statutory bodies either during drawing approval or during inspection, if any shall be carried out by the bidder without any additional cost and delivery implications.

The following codes and standards (versions/revisions valid on the date of order) are referenced to & made part of specification:

API-11P (Second edition), API – 618/ Equivalent Industry Standard, Pressurized crankcase Design /Trunk Piston Design NFPA-37, OISD 179, NFPA-52: 2016, NFPA-37-2015: Standard for installation and use of Stationary combustion Engines and Gas Turbines, ASME B 31.3-2016-process piping, NFPA-496-2017: Standard for purged and pressurized enclosures for electrical equipment, NFPA-68-2013:standard on explosion protection by deflagration venting, NFPA 12-2015: Standard on Carbon dioxide extinguishing system, NFPA -70-2017: National Electrical code,

NFPA-12, IS: 6382, Gas Cylinder Rule-2016

IS: 5571, IS: 5572, IS: 5580, IS-325/IEC or EQV for electric motor.

ANSI, ASTM, NEC, NEMA Indian Electricity Rules, Indian Explosives Act, Delhi Factory Rules,1950 ASME Section VIII Div -1 – Design code for unfired pressure vessel

1.3 PRECEDENCE

In case of any conflict among the various documents of this requisition the following preferential order shall govern:

- 1.3.1 Data sheets/drawings
- 1.3.2 Technical specification
- 1.3.3 International standards/codes as applicable
- 1.3.4 Indian Standards / codes applicable

Compliance with this specification shall not relieve the bidder of the responsibility of furnishing equipment and accessories of proper design, material, and workmanship to meet the specified operating conditions.

No deviations to the technical requirements and to the scope of supply specified in this enquiry document shall normally be accepted and offers not in compliance to the same shall be rejected summarily. In case a deviation is required due to inherent design of the equipment offered, the Supplier shall list all such deviations at one place giving reasons thereon.

1.3.5 Bidder shall necessarily furnish the following along with the bid without which the offer shall be considered incomplete:

- (1) Proven Track Record Formats duly filled in along with general reference list shall be submitted for the earlier supplied CNG packages.
- (2) Checklist duly filled in with regards to scope of supply
- (3) Completely filled in Data Sheets of compressor, Gas Engines
- (4) Deviations if any to this Technical Specification
- (5) Tentative Lay out/key plan/General Arrangement indicating size of skids, center distance between skids and space required along with maintenance requirements
- (6) (a) Utilities requirements (b) Electrical Load summary
- (7) Catalogues of compressor, engine, instrumentation & controls
- (8) Certificate from compressor block manufacturer towards guaranteed shaft power required (inclusive of all compressor driven auxiliaries load) to deliver 1200 SCMH per hour compression (on given parameters) on above guaranteed shaft power along with any electric power consumption on account of separate motors for gas coolers and radiators fan, etc.to be submitted by bidders.

1.4 SCOPE OF SUPPLY FOR EACH COMPRESSOR PACKAGE:

The scope of work/services to be provided by the bidder shall be inclusive of but not limited to: Design, Engineering, Manufacture, assembly, testing at manufacturer's works, erection, commissioning, field trial runs and Equipment performance acceptance test along with associated electrical, instrumentation etc. as per bid document.

Each compressor Package shall be complete with:

- Lubricated and air-cooled Compressor with suction/discharge volume bottles (dampers) as applicable, for each stage (separators) with manual drains and automatic drain system, lube oil system, closed circuit air-cooled as required. In case there is change due to Manufacturer's standards, the same shall be evaluated for acceptance during detailed engineering.
- Gas engine complete with lube oil, closed cooling system, fuel (Natural Gas) supply module, inlet air intake system, exhaust system with silencer, stack etc.
- Gas engine start up air compressor with receiver, refrigerant type air drier and necessary controls.
- 4 nos. mass flow meters to measure the Natural Gas consumption at packages inlet, package discharge, fuel consumption at Gas Engine inlet and package loss / venting with online test arrangement. In case there is change due to Manufacturer's standards, the same shall be evaluated for acceptance during detailed engineering.
- Instrumentation and control system as specified on data sheets, P&ID including Local panel, Console/Local gauge boards, PLC with HMI.
- Common structural steel skid for the compressor-engine combination and for all auxiliary systems of maximum 3.5 m (width) x 5 m (length)/ 18 sq. mtr.

- Gas Inlet Pressure Regulator of 300 # class rating with an outlet discharge range of 10 kg/cm²g to 30 kg/cm² g adjustable. In case there is change due to Manufacturer's standards, the same shall be evaluated for acceptance during detailed engineering.
- Package mounted Duplex Suction gas filters with oil drain and temporary suction inline strainer at the compressor package inlet.
- Air-cooled heat exchanger for inter-stage and discharge gas as well as engine coolant.
- Suction Knockout Drums (KOD) as applicable with solenoid valve operated auto & manual drains. Demisters to be provided for each KOD. Vendor to ensure that KOD & coalescent filter shall be provided after the final discharge and before the mass flow meter. All drain lines shall be provided with level operated / time-based auto drain valves. In case there is change due to Manufacturer's standards, the same shall be evaluated for acceptance during detailed engineering.
- 9 banks for 1200 SCMH Priority Panel at Package Discharge.
- 2 way / 3 way valves with full flow ball valve for priority line.
- All interconnecting oil, gas, water, air piping within the compressor package.
- Impulse and pneumatic piping/Tubing for all valves, fittings as specified & required for mounting the instruments. Block and bleed valves/ brass type needle valve to be provided for Pressure gauges and pressure Transmitters.
- If applicable, Separate junction boxes for different type of signals like intrinsically safe signals, alarm, shutdowns, thermocouples, RTDs etc. for interfacing to local panel.
- NRV at final discharge.
- SRV for fuel line and air compressor should be provided.
- Structural supports within the compressor package for all piping, instruments etc.
- One no. relief valve at each stage discharge, first (1st) stage suction and Blow Down Vessel (BDV). In case there is change due to Manufacturer's standards, the same shall be evaluated for acceptance during detailed engineering.
- Coupling/V-belts/pulleys/direct.
- Y- type strainers, valves, sight flow indicators, check valves, auto & manual drain traps etc. as required for various auxiliary systems i.e. frame lube oil, cylinder lubrication system, cooling water systems etc. In case there is change due to Manufacturer's standards, the same shall be evaluated for acceptance during detailed engineering.
- Each package shall be provided with two nos. IR Type L.E.L. gas detector with display and two nos. UV - IR flame detectors to cover the enclosure effectively. In case there is separate compartment for Gas engine and compressor, each compartment should have atleast 2 nos. GD's and 2 nos. FD's i.e. total 4 nos. Gas Detector and 4 nos. Flame Detector for the package.
- Common CO₂ extinguishing system consisting of two cylinders, piping, valves and control systems (details are given at s.no.1.6).
- Inlet and outlet manual and automatic isolating valves for maintenance & emergency.
- Complete Erection, Testing & Commissioning of compressor packages.
- Training of four engineers in two batches at Packager's works. The travelling, boarding and lodging of MNGL's engineers shall be borne by MNGL. Each training module shall be for one-week span and shall cover the equipment constructional features, operational and maintenance procedures, practical hands-on experience on assembling, dismantling etc.
- Foundation structural drawing.

- Supply, Laying and Termination of following cables including all erection accessories like Lugs, Glands etc is included in the scope of bidder
 - Main incoming cables from owner PDB to main control panel of the compressor through Conduit/trenches.
 - Cables from owner's electronic earth pit (EE) for electronic circuit in the control panel, cables from owners main earthing ring to control panel body earth, instrumentation earthing for PLC, UPS and all interconnecting Cables including complete erection accessories like double compression cable, FLP gland, cable tags, Lugs, etc. as required. Conduit from PDB to Compressor control panel shall be made available by client & from control panel to different accessories / ESD/ units shall be in bidder scope. Bidder to consider distance of PDB in electrical room maximum 80 meters from compressor package & accessories for cable length consideration.
 - Cables from compressor to hooter and up to ESD push button in customer room (Length shall be considered as 100 meter).
- Shed structure (galvanized corrugated sheet) of 10' x 8' over the Control Panel to the Operator for operating the compressor. Total structure setup, fabrication & finishing shall be in bidder's scope.
- Handling of goods (Package & Accessories etc.) at all stages, loading and unloading facilities at designated storage of client, Re-transportation of the package from the store to the actual site / station including transit insurance.

Exclusions

The following are excluded from the scope of the supplier:

- i. All civil works and foundation design except GED Compressor grouting. However, the Supplier shall furnish all the relevant data for design of pedestal/ foundation.
- ii. CNG storage cascade.

All piping beyond battery limits except from air compressor & air piping for air starting and piping from CO2 cylinders up to the enclosure. The air and Co2 piping shall be of seamless CS pipe.

1.5 SAFETY

- 1.5.1 All controls shall operate in a fail-safe mode i.e., failure of any control shall not lead to running of equipment in unsafe mode. Fail safe control shall be available through both software and hardware for all trips.
- 1.5.2 Area Classification: The hazardous area classification Class-I, Division I, Group D as per NEC or Zone I, Group II A/ II B as per IS/ IEC. Certificate from recognized agency to the effect that equipment supplied and/or installed conform to above area classification. All Devices shall meet the requirement for the specified area classification in which they are installed, including instrumentation leads.
- 1.5.3 Bidder needs to submit either the copy of valid type approval for compressor packages from PESO or copy of application towards the same along with the bid.
- 1.5.4 All exposed rotating parts shall be provided with adequate guards of non-sparking type.
- 1.5.5 Driver belt if used shall be of anti-static and fire-retardant type.
- 1.5.6 Piping shall be arranged in a manner so as to provide clear headroom and accessibility within the package. Adequate clearances shall be provided for all the engineered components. Accessibility concern if any raised by MNGL, to be handled suitably.
- 1.5.7 Acoustic enclosure for Compressor package, Each package shall be provided with two nos. IR Type L.E.L. gas detector with display and two nos. UV - IR flame detectors to cover the enclosure effectively. In case there is separate compartment for Gas engine and compressor, each compartment should have atleast 2 nos. GD's and 2 nos. FD's i.e. total 4 nos. Gas Detector and 4 nos. Flame Detector for the package.
- 1.5.8 All material used in the package shall be flame retardant.
- 1.5.9 Relief Valves shall be provided at interstage / compressor discharge with setting as per Cl.

7.20.3 of API – 11P with R.V. venting as per Cl. 7.20.4 of API-11P. Suction separator at first stage inlet shall also be provided with Relief Valve. In case there is change due to Manufacturer's standards, the same shall be evaluated for acceptance during detailed engineering.

- 1.5.10 The Compressor Package shall trip, if any of the enclosure is opened while the machine is running. However, the bidder shall provide enclosure door by - pass selector switch to facilitate routine checking while compressor is running.

1.6 CO2 FLOODING SYSTEM:

The package shall be protected by automatically operated CO2 flooding system designed as per NFPA-12 which should have minimum following features: -

- a. CO2 flooding system should be installed for the protection of CNG compressor by automatic actuation system. The package should be protected by automatic operated CO2 flooding system designed as per NFPA-12.
- b. Gas Detection by installation of hydrocarbon gas detector (IR type) with self-check function and transmitter with adjustable alarm levels (0-100%) with preset of 10%, 20% and 50%. Each enclosure compartment should have at least 2 nos. gas detectors.
- c. Installation of flame detector (UV-IR type) with self-check function and transmitter, alarm on detection of flame. Each enclosure compartment should have at least 2 nos. flame detectors.
- d. CO2 flooding system will consist of 2 nos. brand new CO2 cylinders of 45 Kg capacity. One cylinder will act as main & other as stand by, which shall have identical arrangement and connected to the system. The cylinders should be placed in a shed raised above ground level to protect from weather and direct sunrays as per Gas Cylinder Rules, 2016. Cylinders shall be fitted with automatic actuated Valves, Solenoid valves.

No extra utility as air, inert Gas shall be made available by MNGL/used by the supplier to operate the system.

Cylinder should be ISI marked as per IS: 7285 and PESO approved. The System shall be designed to operate on 24 V DC supply. FRLS (Fire resistant low smoke) cables shall be used for the wiring of the system.

- e. Interlock of CO2 Flooding system with compressor as per following sequence:
 - i. Compressor shall trip on detection of gas at preset level.
 - ii. *Compressor shall trip on detection of flame at preset level and automatic discharge of CO2 gas shall take place from the main cylinder simultaneously.*
 - iii. *Compressor shall not start if the CO2 Flooding System is faulty, not working, SWITCHED OFF etc. The compressor shall be able to start only when the CO2 Flooding System is in healthy working condition.*
 - iv. *Maintenance Override Switch shall be provided to keep the system off during maintenance.*
 - v. *Selector switch shall be provided to put Main/Stand by Cylinder in line at the turn of a switch as per requirement.*
- f. Alarm panel for CO2 Flooding System shall be integral with the main compressor panel. Necessary displays as system ON, OFF, FAULT, RESET, Gas/ Flame indication, Remote actuation of solenoid valve, distinguished hooter etc., shall be provided for CO2 flooding system.
- g. CO2 Cylinders shall be provided outside the package at a safe place, minimum 4.5 meters away (aerial distance), where it is not exposed to fire in case of fire in the compressor. Facility shall be made to operate the system both manually from remote with the help of a switch/ call point and with help of pull-down lever on cylinders.
- h. Suitable online weight (CO2) loss monitoring/ indication device to be provided to ascertain the health of the CO2 flooding system
 - i. All installation shall be compatible for hazardous area Class 1, Division 1, Group-D for Methane Gas.
 - ii. The system designed by the supplier shall be duly approved by MNGL.
 - iii. Technical specifications, Operation and Maintenance Manual, PESO Certificate,

Approval/ Manufacturing certificates for cylinders and cylinder valves, gas detectors, flame detectors, solenoid valves etc. shall be furnished by the supplier along with system. The system provided by the supplier is sufficient enough to handle the CO2 Flooding System independently. Necessary tools (1 set) shall be provided with the system.

- iv. System shall be offered for testing to MNGL by the supplier after commissioning at site by creating actual Gas leak and Gas fire situations and actual discharge of CO2 Gas from the Cylinders. This shall form a part of performance test and thereby acceptance of the package. The cylinders have to be refilled by the vendor at no extra cost to MNGL after performance test. If the system fails during testing, subsequent testing and refilling would be at vendor's cost.
- v. Warning and Operating instructions to be displayed at equipment as per the statutory/ safety regulations.
- vi. Piping of CO2 flooding system shall be seamless high-pressure pipe of Schedule 40 of 50 mm dia. of appropriate length with a minimum safe distance of 4 Meter from CNG Compressor, the fittings like elbows, Tees, Union, sockets should be of same schedule and capacity for installation in a high-pressure system as per NFPA-12.
- vii. Flameproof online weighing system, complete frame with shed and all accessories should be of good quality, weighing scale should be of reputed make.
- viii. Specifications:

Non-Return Valve for CO2 High Pressure Hose:

As per BIS specifications

Operating Media: CO2

Body Material: Brass, BIS: 319

Ball: SS 316

Pin: SS 316

Seal: Teflon (PTFE) Working

Pr.:60Bars

Test Pressure: 90 Bars for 1 min

Weight: 70gm

Outlet Size: ¾ BSP at manifold
end

Inlet Size: ½” BSP at CO2

Discharge Hose end Temp.

Range: -29 °C to 66 °C

Hose Adopter:

As per BIS specifications

Operating Media: CO2 Body

Material: Mainly Brass Test

Pressure: 250 Bar Max. Working

Load: 150 Bar Temp. Range: -29

°C to 66 °C **Discharge Nozzle:**

As per BIS specifications

Operating Media: CO2

Body Material: Lead Tin

Bronze as per BIS: 318:1981

Design Nozzle Pr.: Not less than

20.6 kgf/cm² at 27 °C

Test Pressure: 140 kgf/cm²

Marking for Code No. (on the
basis of equivalent single orifice

dia.): As per BIS: 6382:1982

Temp. Range: -29 °C to 66 °C

High Pressure Hoses:

As per BIS 7285:1974

Operating Media: CO₂

Hose Type: Double wire braided
(perforated) rubber covered

Min. Bursting Pr.: 420 kgf/ cm²

at 54 °C Length: 40 cm

Cross-section: ½"

End Connection: ½" BSP (F)

xW21.614 TPI

End Fittings: Brass

1.7 Ambient Conditions

Complete compressor package shall be suitable to work under the following climatic conditions:

- Max. Height above Mean Sea level: 560 meters (Approx.)
- Max. site temp.: 48 °C
- Minimum site temp.: 0 °C
- RH: 90%

2 UTILITIES & BATTERY LIMITS

2.1 UTILITIES

- 2.1.1 Bidder shall make his own provision for Instrument and starting air with an electric motor driven Screw type air compressor, air drier and receiver system. Receiver to be sized for 6 consecutive starts (each start of at least 6 seconds) of engine within one hour. Air compressor and system should be designed for 13 to 15 kg/cm²g pressure with PRV at compressor package inlet. The flow rate of the compressor supplied shall be sufficient for 6 consecutive starts (each start of at least 6 seconds) of engine with air vessel capacity of 1000 liters (vertically mounted). Max. allowable noise level is 75dBA @ 1meter. Air drier shall be suitable for the required air flow and pressure.
- 2.1.2 All electrical and instrumentation terminals shall be as specified
- 2.1.3 Vendor to design compressor package to start and run without any external power, except for electric motor driven air starter compressor.
- 2.1.4 For running the air compressor and illumination 415 Volt (±10 %) 3-phase 4 wire (TN-S), 50 Hz (± 3 %) power shall be provided by Owner at a single point inside the electrical room on PDB

(Power Distribution Board).

- 2.1.5 Purchaser shall provide the required control power for LCP (230 V, 1 phase (2 wire), 50 Hz A.C.) for UPS of supplier at single point in the electrical room. However, suitable surge protection device to be provided by the bidder of suitable rating for control power

2.2 BATTERY LIMITS

- 2.2.1 Supplier shall arrange its own UPS supply (of min. 3 KVA), testing, installation and commissioning compressor-controlled circuitry. UPS along with 2 hrs. battery back-up to be parts of vendor scope.
- 2.2.2 All customer interface connections (i.e., Gas Inlet & Gas Outlet) shall be brought out to the package edge. Gas inlet shall be connected from client's battery limit of piping with isolation valve and Gas outlet (priority panel outlet connection) shall be terminated through high pressure 3/4" full flow ball valves with end connectors for cars and 1" full flow ball valves with end connectors for bus.
- 2.2.3 As and where specified on the data sheets all vents (i.e., Relief valve, distance piece, packing and starting air) shall be manifolded and terminated at skid edge outside the enclosure and vented to safe height at package roof. Vent shall be terminated at height of 2m from compressor package roof. Separate header for relief valve and packing vent to be provided. Silencer has to be provided in the starting air vent line.
- 2.2.4 All drains from different process equipment, distance piece and packing shall be manifolded and terminated as single point for customer interface duly flanged with isolation valve.
- 2.2.5 Drains should be through a common header and discharge to be allowed in a pit to avoid spillage around compressor package. An oil drain pot outside of the package shall be provided to collect all drains from packaging, distance pieces, processes etc. the capacity of the drain pot should not be more than 25 litres.
- 2.2.6 All the drain collection in the Oil Recovery Vessel is accepted. ORV mounted inside the package, with a capacity of 20lts for uninterrupted operation of machine is accepted. For all drains single point threaded connection with isolation valve is accepted.

3 EQUIPMENT'S CRITERIA

3.1 Gas Compressor

The compressor block model offered shall be from the existing regular manufacturing range of the compressor manufacturer and shall meet the following minimum service and manufacturing experience requirements:

- 3.1.1 The Compressor block shall meet all the technical requirements as below:
- i. The compressor blocks shall be of horizontal balance opposed design or Trunk Piston Design only. Vertical blocks are not acceptable.
 - ii. Gas compressor block shall be lubricated, and air cooled only.
 - iii. The compressor block design should ensure that:
 - The emission of process gas into the atmosphere does not take place from either of the packing seals / joints / relief valves / pressure vessels such as BDV etc. Not applicable in pressurized crankcase design.
 - There should not be progressive increase of the fugitive emissions / discharge of process gas into the atmosphere with usage / wear of packing seals. Not applicable in pressurized crankcase design.
 - The compressor efficiency / production should not drop with usage and adequate measures be taken to ensure that compressor through put / production does not fall below the guaranteed parameters submitted by the bidder at any point during the lifecycle.
 - In case the compressor block design is such that it requires Nitrogen purging, the bidder shall submit all the technical details of the Nitrogen Purging System and supply the same along with the compressor package.
 - The compressor block / package design shall be such that it shall not vent process gas

into the atmosphere upon sudden stoppage / emergency shutdown / power failure.

- All the vents / relief valve discharge points shall be connected to a common manifold and discharged thru a vertical line of min 1 mtr over the highest point of the package. The line shall be designed to be able to handle the maximum flow of gas without creating backpressure. A thermal mass flow meter for measuring all the fugitive emissions / vent of process gas into the atmosphere (specifications mentioned separately) shall be provided in this line.
 - The compressor block should have a level glass to indicate the residual lubricating oil level.
 - Three stage compressor configuration is envisaged. Gas composition given under Design Case shall be used for Compressor selection, Sizing and performance guarantee estimates. Compressor shall be suitable for continuous operation with the indicated gas composition range and operating parameters given in the data sheet.
 - Compressor shall be suitable for frequent start - stop operation and shall not vent process gas while idling. In case bidder is quoting package with compressor block that may vent / discharge process gas into the environment during idling, the bidder has to confirm the same and declare the maximum extent (in kg/hr) to which their compressor design may vent the process gas during idling. In case ,compressor crankcase being pressurized same is not applicable.Necessary arrangements to prevent any kind of vents during idling shall be as per manufacturer's standards.
 - i. Compressor block design shall be such that the cylinders and the compressor block are both air cooled.
 - ii. Directly coupled as well as V-Belt Drive compressor blocks are acceptable. However, the compressor driver RPM shall not exceed 1500.
 - iii. The gas cooler fan shall have mechanical drive/ Hydraulically driven only.
 - iv. In case the bidder is a Packager utilizing the compressor, block manufactured by other OEM then:
 - The compressor block OEM should have supplied the compressor blocks which fulfil the criteria stated from i) to vi) above.
 - Bidder must submit confirmation letter from compressor block OEM towards above.
 - Bidder shall submit the technical data sheets of compressor block duly endorsed by the compressor block OEM.
2. Suction line pressure may vary from 16 to 19 kg/cm² (g). The discharge pressure shall be 255 kg/cm² (g). Bidder may provide a suction pressure regulator to regulate the suction pressure. The suction pressure of 16 kg/cm² (g) shall be used for compressor sizing/ selection.
 3. Above suction pressures are at the compressor package battery limits. Battery limit is defined at the inlet of compressor suction and downstream of filter, PRV and flowmeter. **MNGL will provide 4"x2" tee connection of steel line within 3-4 mtr. From package for Gas Suction line. Bidder has to extend the 2" steel line with isolation valve, strainer, filter etc. up to gas suction line of package. The site layout drawings shall be shared during detailed engineering.** Bidder shall consider all pressure losses at suction, inter stage and discharge at the specified capacity (with no -ve tolerance) for compressor/engine and indicate the same on the data sheets
 4. The compressor Driver shall be suitable to start the compressor against the stabilized Pressure (30 Kg/cm²g) of the system. A gas recovery vessel of suitable capacity shall be provided to collect the gas of 1st, 2nd & 3rd stage of compression. The operating pressure of gas recovery vessel shall be 35 kg/cm²g maximum. In the event of sudden stoppage or otherwise during the operation/idling the blow down vessel shall not vent gas into the atmosphere.
 5. The compressor driver shall be capable of running the compressor under loaded condition with each stage pressurized to its respective specified pressure and final pressure up to PSV set pressure.
 6. Allowable speeds, temperature and vibration levels:
 - The rotational speed of both compressor & engine (driver) shall be limited to maximum of 1500 rpm.
 - The linear piston speed shall be 4.5 m/sec for lubricated compressors
 - The maximum discharge gas temperature for each stage shall be limited to 150-degree C.
 - Compressor maximum vibrations at cylinders and at frame shall not exceed 10 mm /sec. and 5

mm/s respectively unfiltered peak velocity. The Bidder shall provide for all structural support within the package so that these levels can be achieved.

3.2 **Gas Engine**

The offered gas engine shall be from one of the regular production range of either **CATERPILLAR** or **CUMMINS** make for mechanical drive applications. The gas engine rating offered shall be based on internationally published standard rating.

Gas Engine shall be identical or validly similar in Model no., power rating, speeds, service, type of cooling arrangement, mechanical design etc. as supplied in CNG Compressors in India.

4 **BASIC DESIGN**

4.1 **GENERAL**

4.1.1 The Compressor shall meet all the technical requirements as specified in:

- i. Data Sheets
- ii. Technical Specification
- iii. Code and specification (as applicable) API-11P, OISD 179, NFPA 37, NFPA 52, ANSI, ASTM, NEC, NEMA, Indian Electricity Rules and Indian Explosives Act are referenced to & made part of specification.

Compressor, engine and auxiliaries design shall be in conformity with API 11P, second edition

4.1.2 Minimum Three stage Compressor configuration is envisaged. Gas composition given under Design Case shall be used for Compressor selection, sizing and performance guarantee estimates. However, compressor shall be suitable for continuous operation with the indicated gas composition range and operating parameters given in the data sheet.

4.1.3 Suction line pressure may vary from 16 kg/cm²G to 19 kg/cm²G with discharge pressure at 255 kg/cm²G. A suction pressure regulator shall be installed to limit the suction pressure to 19 kg/cm²G. The suction pressure of 16 kg/cm²G shall be used for compressor sizing/ selection.

4.1.4 Bidder's offer shall be based on firm and final compressor models on which basis the offer shall be evaluated. All bidders shall take full cognizance of this matter before submitting the bid.

4.1.5 Note that the pressures given on the data sheet are at the compressor package battery limits, bidder shall consider all pressure losses at suction, interstate and discharge at the specified capacity (with no -ve tolerance) for compressor/engine and indicate the same on the data sheets. No venting of the gas is allowed at any point during operation.

4.1.6 The compressor Driver shall be suitable to start the compressor against the stabilized pressure (30 Kg/cm²g) of the system. A gas recovery vessel of suitable capacity shall be provided to collect the gas of 1st, 2nd & 3rd stage of compression. The operating pressure of gas recovery vessel shall be 35 kg/cm²g maximum. No venting of gas is allowed.

4.1.7 The compressor driver shall be capable of running the compressor under loaded condition with each stage pressurized to its respective specified pressure and final pressure upto PSV set pressure.

4.1.8 Near Zero Gas Loss compressor package design is envisaged. The Compressor packages with gas loss in excess of 1% shall not be accepted

4.2 **ALLOWABLE SPEEDS, TEMPERATURE AND VIBRATION LEVELS**

4.2.1 The rotational speed of both compressor & engine (driver) shall be limited to maximum of 1500 rpm.

4.2.2 The linear piston speed shall be limited to 4 m/sec for non-lubricated compressors and 4.5 m/sec for lubricated compressor. In case there is change due to Manufacturer's standards, the same shall be evaluated for acceptance during detailed engineering.

4.2.3 The maximum discharge gas temperature for each stage shall be limited to 150°C.

4.2.4 For balance opposed compressor design, Compressor maximum vibrations of cylinders shall not exceed 10 mm/sec. unfiltered peak velocity. Maximum Vibration level of installed compressor frame shall not exceed an unfiltered peak velocity of 5 mm/sec. or 200-micron unfiltered peak to peak vibration whichever is less. The Bidder shall provide for all structural

support within the package so that these levels can be achieved. In case there is change due to Manufacturer's standards, the same shall be evaluated for acceptance during detailed engineering.

4.3 PISTON ROD, BEARINGS AND CROSS HEADS (AS APPLICABLE)

- 4.3.1 Piston rod should be TC3 coated in the areas that pass through the packing and the surface hardness should be Rockwell C58~C64 minimum. In case there is change due to Manufacturer's standards, the same shall be evaluated for acceptance during detailed engineering.
- 4.3.2 Crosshead shall be as per manufacturer's standard material and designs. Adequate openings for removal of the crossheads shall be provided. Crosshead guide cover should be preferably transparent. In case there is change due to Manufacturer's standards, the same shall be evaluated for acceptance during detailed engineering.
- 4.3.3 Piston rod and cross head pin loading at any specified operating condition including the relief valve set condition shall not exceed 80% of the maximum design rod load of the offered compressor. Rod loads shall have sufficient reversals in direction for all specified operating conditions including PSV Settings and part load operation. The calculation for rod loading at various conditions may be submitted.

4.4 PACKING CASES AND PRESSURE PACKING (AS APPLICABLE)

- 4.4.1 All oil wiper intermediate gas cylinder pressure packing shall be segmental rings with stainless steel garter springs. The pressure packing case shall be provided with a common vent and drain routed outside the package enclosure. ERW steel, seamless steel tubing conforming to ASTM A-192 or series 300 SS tubing conforming to ASTM A-269 with minimum thickness as specified in Cl. 7.11 of API-11P shall be used for vent piping. It may not be applicable for compressor with pressurized crank case design.
- 4.4.2 Packing vent piping inside of the distance piece shall be designed for the maximum allowable working pressure of the cylinder. It may not be applicable for compressor with pressurized crank case design.
- 4.4.3 Bidder to indicate the allowable packing vent in their designs in SCMH along with the bid.

4.5 COMPRESSOR FRAME LUBRICATION (AS APPLICABLE)

- 4.5.1 Compressor frame lubrication shall be pressurized system, with main oil pump driven directly by the compressor shaft.
- 4.5.2 All lube oil piping after oil filter shall be 300 series stainless steel conforming to ASTM A 269/ Oil galleries.
- 4.5.3 As applicable, heating shall be provided for reservoir when the minimum ambient temperature is less than the Bidder's required minimum start up temperature.

4.6 DISTANCE PIECES (AS APPLICABLE)

- 4.6.1 As applicable, compressor manufacturer's standard Type-1 or Type-2 of API 11 P shall be provided as a minimum.

4.7 CYLINDER AND PACKING LUBRICATION (AS APPLICABLE)

- 4.7.1 Secondary lubrication system with double puppet check valve protector, HP Filter (for all lubricating points) & DNFT flow switches with standby pump. Secondary lubrication system with divider block shall be provided. . In case there is change due to Manufacturer's standards, the same shall be evaluated for acceptance during detailed engineering.
- 4.7.2 Lubricators shall be driven by crankshaft and bidder shall highlight any pre lubrication requirements of the cylinders and the method of achieving the same.
- 4.7.3 Lubricators shall have a sight flow indicator for each /Common lubricator point and a stainless-steel double ball check valve shall be provided at each lubrication point.
- 4.7.4 Digital no flow switch shall be provided to stop the compressor in case of loss of cylinder lubrication in any stage/ packing. Manufacturer's standard arrangement with a common digital NO flow switch (time based) is accepted. When there is no – pulse (from cylinder lubrication - divider block) for certain time interval, the switch should toggles & the compressor should be tripped on lubrication fault.
- 4.7.5 Lubricator reservoir capacity shall be adequate for 150 Hrs. of normal operation, and shall be

equipped with low-level alarm. In case there is change due to Manufacturer's standards, the same shall be evaluated for acceptance during detailed engineering.

- 4.7.6 Bidder shall furnish along with their bids the details of the recommended Lubricating oil type, International Grades & Specifications along with their quantity and changing frequency/schedule. The recommended oil shall be compatible with gaskets, 'O' rings, seals, packing, lubricating parts and other parts coming into contact.

4.8 COOLING SYSTEM

4.8.1 Engine Jacket/Compressor Cylinder

Compressor cylinders shall be air cooled. The usage of cooling water shall be limited to the engine cooling and the radiator thereof cooled by an air-cooled heat exchanger.

4.8.2 Inter/After Gas Coolers

Air-cooled Interstate and Final stage discharge coolers shall be provided which shall limit the gas temperature after the after cooler to ambient+10-degree C. For calculating the surface area of the air cooler, the ambient air temperature of 47.5°C and 90% RH shall be considered. Cooler design shall be based on 20% extra design based on the thermal duty at most severe condition corresponding to suction pressure. Gas sections of coolers shall be designed as per API-11P requirements and shall be inspected by any approved 3rd party inspection agency. Engine oil cooler and jacket water coolers shall be so designed that the vendor's maximum permissible temperature (47.5°C+10°C) is not exceeded at the maximum ambient temperature of 49°C. In case there is change due to Manufacturer's standards, the same shall be evaluated for acceptance during detailed engineering.

4.9 SEPARATORS & OIL REMOVAL SYSTEM

4.9.1 Carbon Steel separators / KOD at suction and inter stage and with SS 300 series, mist extractors, auto system (level/time based) shall be provided for the capacity as required. All the separators with auto drain system over manual drain system shall be considered for safety reasons, only ORV with manual drain considered. Drain system will be timer based as per manufacturer's standard offering. Manual drain valve is to be provided for draining oil in depressurised circuit for draining oil when compressor is in stop condition.

- 4.9.2 All pressure vessels shall be designed as per ASME VIII Div. 1 practice and sourced from =bidder approved vendor

- 4.9.3 The offered scrubber and mist removal shall restrict the oil level to < 5 ppm in the discharge gas of compressor and the equipment shall be designed accordingly.

All vessels including pulsation dampers shall be fully (100 %) radiographed as per ASME VIII UW (a) Minimum design temperature for separators shall be 100 degree C and minimum design pressure shall be maximum operating pressure plus 15% for inter stages and plus 10% for final stage.

- 4.9.4 Gas Recovery System: It shall comprise of the following.

Blow Down Vessel shall be sourced from a bidder approved vessel manufacturer and shall conform to ASME SEC VIII DIV I Edition 2015.

The name plate of the BDV shall have the manufacturer's name and following parameters: Design Pressure, Design Temperature, Hydro Test Pressure, Corrosion Allowance, Radiography, Heat Treatment, Empty Weight & Capacity / as per Manufacturer standard.

Bidder shall provide blow down vessel to act as:

- A buffer tank during start-up.
- Gas flow dampener during compressor operation.
- Surge tank for depressurization of each of the compressor stage piston cylinders during shutdown.
- Blow-down tank size shall be as per Gas Cylinder Rules and duly certified for the purpose. The gas recovery vessel shall be provided with pressure relief valve and necessary instrumentation to avoid cold flaring of gas.

- Capacity of the BDV shall be such that no gas is vented into the atmosphere either that start or stop or any time during operation.
- Bidder shall provide gas recovery system with gas recovery vessel of sufficient capacity (operating BDV pressure should not exceed 25 Kg/cm²g) so as to limit the gas pressure inside vessel to 30 kg/cm²g after tripping of compressor at PSV trip set pressure of final stage discharge. Gas recovery vessel shall be designed as per the ASME code and will be inspected by Third Party Inspection Agency, approved by Purchaser. Calculation for BDV volume shall be considered 20% higher than calculated volume and it should be calculated on higher range (14 to 19 bar).
- One vent line from gas recovery vessel with double isolation valves shall be provided. In case there is change due to Manufacturer's standards, the same shall be evaluated for acceptance during detailed engineering.
- It is preferred that BDV shall be placed on top of the package enclosure. In case there is change due to Manufacturer's standards, the same shall be evaluated for acceptance during detailed engineering.
- The bidder shall carry out retesting of pressure vessels periodically i.e every year or earlier as per Gas Cylinder rules 2016/ Static and Mobile Pressure Vessels Rules.

Note: Under slung, package base mounted blow down vessels are not acceptable. The BDV shall be mounted on the top of the package in a manner that shall facilitate periodic visual inspections as well as testing as per norms.

4.9.5 All separators / KOD's shall be provided with 3 mm corrosion allowance.

4.10 PULSATION, VIBRATION CONTROL AND ANALOG STUDY

- 4.10.1 Bidder shall provide pulsation, suppression devices at each suction and discharge of compressor cylinders.
- 4.10.2 The design of pulsation suppressing devices shall be based on the acoustic and mechanical evaluation carried out as per API 618-design approach 3.
- 4.10.3 These devices must reduce pressure pulsation in piping within 3%. These pulsation dampers shall be designed to limit pressure drop to 1%. The minimum acceptable volume of pulsation suppression device shall be 10 times the cylinder swept volume.

4.11 GAS ENGINE

- 4.11.1 Only Cummins & Caterpillar Make of Gas Engines are acceptable.
- 4.11.2 The gas engine shall be spark ignited type, gas fired 4-stroke engine. The integral gas engine & compressor type design is not acceptable.
- 4.11.3 The gas engine shall be equipped with the following:
- Water cooled exhaust manifold/s.
 - Naturally Aspirated / Turbo Charged / Turbo Charged Intercooled Design.
 - Water cooled turbo charger exhaust housing.
 - Engine driven radiator fan and radiator assy.
 - Auxiliary water-cooling system.
 - OEM approved ignition system.
 - Electronic Air Fuel Ratio Controller / Electronic Gas Carburetor.
 - Electronic / Mechanical Governing System F.
 - Inline / V-type configuration.
 - Six / Eight-cylinder configuration.
 - Air starting system.
- 4.11.4 The exhaust line shall have an exhaust bellow at the turbo charger outlet to isolate vibrations.

- 4.11.5 The site rating of engine shall be 110% of greatest BkW required by compressor including the auxiliary loads at any of the compressor operating conditions or 105% of greatest BkW required by compressor at relief valve set pressure including auxiliary loads at any of the compressor operating conditions, whichever is higher. The maximum operating speed of the engine shall be limited to 1500 rpm.
- 4.11.6 The site rating of engine shall be worked out considering the de-rating specified under the latest edition of British Standard 5514/ISO 3046 and deducting the power absorbed by all the engine driven auxiliaries. The site rating of engine shall be based on 49°C ambient temperature, RH 90% and an altitude of 560 meter taking design case gas composition as specified, the site rating so arrived shall be suitable for the maximum Compressor BkW as arrived at and which can be applied 24 Hrs. a day seven days a week with an overrating capability of up to 10%.
- Note: The Design Gas specified for the compressor shall be used as engine fuel.
- 4.11.7 The bidder shall provide a confirmation letter from the engine OEM towards the fuel consumption of quoted gas engine model at 49 Deg C ambient temperature at the declared total package power requirement including the shaft power and the auxiliaries.
- 4.11.8 All the engine auxiliary equipment's including the cooling fans shall be engine driven.
- 4.11.9 The engine shall be provided with the shielded ignition system of breaker less type, low tension solid state having vapor proof enclosure with a high-tension coil at each power cylinder. All low-tension wiring shall be enclosed in grounded steel conduits. But the spark plug connecting cables shall be enclosed in grounded, metal shielded flexible conduits.

- Gas engine shall be equipped with an electronic air fuel ratio controller / electronic gas carburetor. The electronic AFR / EGC shall be capable of maintaining constant air to fuel ratio across entire range of operating parameters. It shall be equipped with a heated type Oxygen Sensor to measure the level of free Oxygen in the exhaust stream. The AFR/EGC shall be supplied with a Gauge / Display to continuously display the operating air fuel ratio of the gas engine. The AFR/EGC electronics shall have the provision to measure exhaust temperature to limit damage to the catalytic converter. In case there is change due to Manufacturer's standards, the same shall be evaluated for acceptance during detailed engineering.

- 4.11.10 The engine shall be supplied with residential grade silencer-cum-catalytic converter to minimize the space and to prevent loss of temperature over the catalytic converter. The silencer-cum-catalytic converter design shall ensure that the Catalyst Tablet is housed within the silencer. Silencer-cum-Catalytic Converter shall be placed over the enclosure, provided with blanket of rockwool / ceramic wool and clad with Aluminum sheet of minimum 20 swg thickness. The silencer-cum-catalytic converter shall have minimum ¾" threaded and plugged ports for measuring the pressure drop across the catalyst and to measure the backpressure. In case there is change due to Manufacturer's standards, the same shall be evaluated for acceptance during detailed engineering.
- 4.11.11 The air filter assembly / suction pipe for air filter shall be located inside / outside the Canopy.
- 4.11.12 Bidder shall provide the fuel gas supply line consisting of valves, pressure regulator, pressure regulator, shut off valve and necessary instrumentation etc. as required for the engine to ensure continuous supply of conditioned gas to engine.
- 4.11.13 Bidder shall also include supply of catalytic converter along with all accessories required for its installation to reduce the levels of Carbon Monoxide, Hydrocarbons and NOx levels in the exhaust stream by 75%. For specification of catalytic converter.

The catalyst shall be of Stainless Steel (Ceramic substrates are not acceptable) Honeycomb Structure of minimum 19" diameter, 3" wide with 200 cells /sq. Inch cell density.

Catalyst supplied by Cummins with emissionised recipe of GTA855 and G855 has Stainless Steel honeycomb structure, cell density of 200 cpsi, diameter of 14-9/16" and width of 3.5" whereas final assembly of Catalytic Converter has outer diameter of 20" is accepted.

A confirmation from engine supplier towards the catalyst tablet construction, design and sizing being capable of reducing the emissions from their engines by 75% shall be submitted along with the bid. The catalyst tablet shall be so placed inside the silencer-cum-catalytic converter to

facilitate easy removal, washing / regeneration and fitment without interruption in operations.

- 4.11.14 The exhaust line inside the acoustic enclosure shall be insulated with wire braided ceramic tape and clad with Aluminium sheet of minimum 20 swg.

4.12 COUPLING

- 4.12.1 Directly coupled driver-compressor arrangement and Power transmission should be preferably thro' flexible coupling. V-Belt driven compressor is also acceptable. In case of belt drive idler pulley must be provided for adjustment of belts. In case there is change due to Manufacturer's standards, the same shall be evaluated for acceptance during detailed engineering.

4.13 ENCLOSURE OF CNG COMPRESSOR PACKAGE

- 4.13.1 The Compressor Package enclosure shall be constructed out of MS Sheets and Iron Frames as per OEM Specifications. The enclosures shall:
- Have dedicated base frame for mounting the compressor block, engine and accessories. (The base frame with integrated blow down vessel is not acceptable as it does not permit either the inspection or testing as per Gas Cylinder Rules).
 - Each compartment shall be provided with two numbers IR Type L.E.L. gas detectors and two numbers UV - IR flame detectors.
- 4.13.2 The maximum allowed temperature within the enclosure shall be 10 °C above ambient temperature.
- 4.13.3 The enclosure shall restrict maximum noise level to 75 dB (A) at 1 meter from the enclosure.
- 4.13.4 The enclosure shall have doors for normal access and removable wall panels for ease of maintenance.
- 4.13.5 All pressure, temperature of gas shall be visible from outside of enclosure. lube oil pressure, coolant temperature indicators etc. parameters shall be viewed from PLC/locally.
- 4.13.6 Enclosures shall have internal flame proof lighting arrangement.
- 4.13.7 For handling of all heavy parts for maintenance purpose lifting arrangement i.e. beam fitted with chain hoist shall be provided in enclosure.
- 4.13.8 All Coolers, knock out Drums, if applicable, Scrubbers, Cooling System, lubrication system along with interconnecting piping shall be inside the enclosure.
- 4.13.9 Enough headroom shall be made available for easy access and maintenance of all equipment.
- 4.13.10 Components such as pressure gauges, temperature, pressure switches, filters, automatic ball valves, safety valves etc., which require in-situ adjustment, maintenance and reading, shall be easily accessible.
- 4.13.11 The enclosure shall be lined with Rockwool / UL approved fire-resistant PU foam to curtail noise. PU foam should be fire resistant and adequate enough to maintain 75 dBA.
- 4.13.12 The enclosure roof shall have provision for mounting of the blow down vessel, silencer cum catalytic converter, air filter, vent mass flow meter etc. In case there is change due to Manufacturer's standards, the same shall be evaluated for acceptance during detailed engineering.

All Coolers, Knock Out Drums, Scrubbers, Cooling System, lubrication system along with interconnecting piping shall be inside the enclosure. Enough headroom shall be made available for easy access and maintenance of all equipment in the enclosure. The piping layout with respect to the compressor, intercoolers, KOD and auxiliary's location shall be subject to Purchaser's approval during detailed engineering stage.

- Conduits and tubing shall be arranged in orderly and systematic manner and shall be routed neatly to enter the back of display or monitoring panels
- Routine service item such as, but not limited to, crank case oil filters, inter stage gas filters, inlet and outlets gas filters and drive belt shall be located to facilitate easy one-man servicing.
- One person should be able to access crank case oil inlet and drains to allow addition or

drainage of oil without removing panels or adjacent components and without the need of the pump.

- Items which must be operated & monitored during operation shall be readily accessible without opening the door.
- Suitable gradients shall be provided on the enclosure roof for rain drainage and to avoid water pockets.

4.14 PIPING

- 4.14.1 All gas piping shall be designed, fabricated & tested in accordance with ANSI B 31.3.
- 4.14.2 Gas piping shall be seamless carbon steel manufactured in accordance with ASTM A- 53 Gr. B or ASTM A - 106 Grade B. All Gas piping shall be flanged connections.
- 4.14.3 All rigid piping, tubing & other components of compressor package shall be designed for full range of pressure & temp and loading to which they may be subjected with a factor of safety of at least 4 based on minimum specified tensile strength at specified ambient temperature.
- 4.14.4 All rigid piping shall be continuous between their respective components & free of connections except welded joints. All high-pressure joints shall be welded unless otherwise not feasible.
- 4.14.5 The instrument air tubing material shall be Stainless Steel series –304.
- 4.14.6 All high-pressure double ferrule fitting & 2/3-way valves shall be from SWAGELOK or PARKER make & shall be SS 316 material only.
- 4.14.7 Bidder shall furnish Y-type strainer /a conical strainer fitted with adequate size mesh at the gas inlet before the filter.
- 4.14.8 External drain & vent piping shall be Carbon Steel and not less than 1/2" nominal size.
- 4.14.9 Mercaptan/THT dosing is envisaged hence all materials coming in contact with gas shall be compatible to such gas with Mercaptan/THT dosing and be of compressor manufacturer's standard. The use of SA 515 material is prohibited.
- 4.14.10 All high-pressure gas tubing shall be of SS 316 of Sandvik make and hardness less than Rb 80.

Note: In case there is change due to Manufacturer's standards, the same shall be evaluated for acceptance during detailed engineering.

5 CONTROL PHILOSOPHY

- 5.1 The compressor package control system shall be designed for unattended operation in automatic mode and in case of any fault it will go in a safe mode.

Compressor Package shall be provided with a PLC based LCP of approved make (i.e. Siemens/Allen Bradley/ABB/GE/Honeywell/Schneider), which shall be weatherproof to IP65 and shall be certified suitable for specified hazardous area classification. PLC should be integral with the package with necessary Hazardous Area Certificate (HAC) compliance. HMI shall be of touch screen type. All operational buttons shall be on touch screen except the Emergency stop button. Touch screen display system shall be weather proof to IP65.

PLC shall incorporate all process parameters (specified elsewhere) and status of compressor, engine & priority panels and shall be modular in construction with 100% redundancy with respect to CPU, Power supply for bump less changeover from one CPU to the other. In case there is change due to Manufacturer's standards, the same shall be evaluated for acceptance during detailed engineering.

Interface. PLC components/system shall be tropicalized, MIL standard adopted with complete wiring and necessary terminals. Wiring to be colour coded with cross ferruling in position.

PLC shall be capable of carrying out on line routines for at least ten separate loops without affecting the scan, cycle & up dating time etc.

PLC shall be capable for display of flow meter data (i.e. Gas Suction, Gas Discharge, Gas

consumed by the engine), various trips/abnormal conditions, compressor running hour etc. in following manner

- a. Shift wise (for 3 shift operations i.e., 06:00-14:00, 14:00-22:00 & 22:00-06:00) - shall be available for at least last 96 hours
- b. Daily basis- shall be available for at least last 31 days
- c. Fortnightly basis- shall be available for at least last 3 fortnights
- d. Monthly basis- shall be available for at-least last 2 months

PLC shall be configured as a remote terminal unit of supervisory computer and data acquisition system complete with dial up connectivity. One card for transferring and accessing data from minimum twenty devices with RS 485 port shall be provided. PLC SCADA connectivity is required as per the attached specification at Annexure-IX.

PLC would be provided with integral keyboard and display for configuring, programming and to view process & machine parameters. Suitable communication port shall be provided to download programs etc from PLC through a Laptop. Laptop not included in Bidder's scope.

All source & object codes including logic flow chart, ladder diagram etc are to be furnished by the Packager and PLC shall be capable of incorporating function Block diagram, sequence function chart, ladder diagram and structural text as per IEC 61131.

There shall be three independent ports available in the PLC with all the parameters available on each individual port.

Out of three ports from first port there shall be arrangement to retrieve the data in external storage device such as memory card/ pen drive. Data may be required in suitable format as per MNGL Engineer In-charge discretion. This will include critical temperature, pressure, flow, running hour etc information. Depending upon the parameter's calculation of Gas loss, Efficiency, normalized efficiency etc is also required.

Second port shall be for remote monitoring of the parameters. Besides PLC display, all the parameters which are measured, should be monitored on a HMI/MMI for remote monitoring as well as of remote operation. Data should be stored at 2 places simultaneously in case of failure of one device, data can be retrieved from second device. Trends, alarms, events should be logged for at least 3 months on day/hour/minute basis.

Third port shall be available for any third-party interface which shall be OPC compliant for networking or SCADA. The recorded data or part of the data may be required to transmit to remote locations over open/secured network through internet/ Ethernet using local cable/ data card/ sim-card (GPS/GPRS/CDMA). Modem / router or any other medium to transmit the data should be available. Vendor shall provide protocol details to MNGL and also provide necessary support for third party interface for remote data connectivity.

Redundancy in PLC is required. PLC shall incorporate all process parameters (specified elsewhere) and status of compressor, engine & priority panels and shall be modular in construction with 100% redundancy with respect to CPU, Power supply, Interface. PLC components/system shall be tropicalized, MIL standard adopted with complete wiring and necessary terminals. Wiring to be colour coded with cross ferruling in position. PLC shall be capable of carrying out on line routines for atleast ten separate loops without affecting the scan, cycle & up dating time etc. PLC shall be configured as a remote terminal unit of supervisory computer and data acquisition system complete with dial up connectivity. One card for transferring and accessing data from minimum twenty devices with RS 485 port shall be provided. In case of failure of master / active controller/CPU, standby controller/CPU should take over the control in bump less manner. All values & data should be available through both the controllers immediately, i.e. there should be no data loss.

Successful bidder to include in scope live demonstration of remote monitoring of all PLC logged parameters in one machine at his works. MNGL may ask for the same. However, this may be required to be demonstrated at site.

There shall be an interlocking provision in PLC program for tripping of machine due to communication break or power failure of flow meters.

Fail safe / Wire break alarm for safe operation. Machine should trip in case the loop is broken for GD/FD/PT/TT.

Each cable shall be neatly tagged & dressed of each for instrument. There shall be identification tags for individual instruments.

In PLC pressure process values should be taken from pressure transmitters and should be independent from pressure gauges installed on local gauge panel. Temperature process values should be taken from temperature element like RTD/ thermocouple and should be independent from temperature gauges installed on local gauge panel.

- 5.2 The compressor package control system shall be so designed that the first item to go into alarm condition shall lock out to indicate the cause of the trip though the cause of the trip may have disappeared. The lock out condition shall be manually reset. A change over set of contacts shall be provided for Owner's use to give a remote indication of alarm and trip.
 - 5.3 In auto mode, compressor shall start automatically in case high bank storage pressure falls below 220 kg/cm² and stop as soon as pressure of stationery cascade reaches 255 kg/cm².
 - 5.4 The priority fill system (In bidder's scope) shall ensure the filling of vehicle, storage cascade and mobile cascade in correct order.
 - 5.5 In case of fault, a warning hooter shall operate, the sound of which should be audible at distance of at least 15 meters. Further the fault alarm and emergency stop PB shall be duplicated in the CNG station control room. Acknowledgement/resetting of fault shall be possible only from compressor panel. Emergency stop PBs shall be mushroom head turn lockable type.
 - 5.6 Once the fault is acknowledged or the engine and/or compressor are under normal maintenance, the valves of priority panel shall take the position so that gas available in the stationary CNG storage cascade can be dispensed.
 - 5.7 The pressure in each bank shall be monitored from down-stream of priority panel.
 - 5.8 Bidder shall provide emergency shut down (ESD) system in the control room as well as locally mounted on the compressor panel and one no. on the enclosure. Total 3 nos. of ESD switches to be provided as a minimum.
 - 5.9 Fail-safe system shall be designed and incorporated to isolate cascade storage from dispenser, stop compressor, isolate the compressor suction line and cut off fuel gas supply to engine on activation of ESD switch.
- ESD switch shall have to be manually reset to restart the compressor package again.
- 5.10 Bidder shall provide Application program for PLC, HMI (Human Machine Interface) on LCP (one set per package) along with all interfacing adaptors and cables. Bidder shall also provide one set of source & object codes for PLC, HMI on LCP (in both forms, hard & soft).
 - 5.11 All pressure and temperature at compressor inlet, outlet, at each stage before and after cooling, all engine related pressure temperature, all cooling water temperature at inlet and outlet to be available on the PLC.
 - 5.12 PLC shall have historical as well as event recording system for at least last 200 events as per attached section: General specification for instrumentation.
 - 5.13 Remote Monitoring

The compressor package should be equipped with GPRS based Remote Monitoring and Analysis Solution for relay of the data to a remote server and monitoring of the PLC parameters. This is in order to facilitate Predictive and Preventive maintenance and also to enhance safety in operations.

The Remote monitoring system shall fulfill the following minimum requirements:

- 24 x 7, every minute relay of PLC data to dedicated Server.
- Database of all operational parameters of the PLC shall be maintained in Server Storage.

- Supplier shall provide web access to Purchaser and create log in ID's as per Purchaser's requirement (Max. 20 log in ID's).
- The Web access shall allow Purchaser to view all the historical parameters of the compressors in formats as per Purchaser requirement.
- The Server should be programmed to automatically mail the daily log book parameters to Purchaser's servers at designated address.
- There should be feature of user defined virtual set points in the server to trigger pre-alarms. These set points shall be in virtual mode in the server and shall in no way interfere with the working of compressor or OEM defined set points in package PLC.
- The server shall send e-mail and SMS intimation to Purchaser's designated numbers in case of fault/breakdown.
- The Webpage shall display Daily production / gas loss and package wise gas loss along with daily log.
- The Webpage shall display amount of Natural Gas consumed by engine in Kgs to produce one Kg of CNG.
- The Webpage shall also highlight the pipeline pressure available at station Vs. production in Kgs. The bidder shall make provision to tap & read Station Pressure.
- The Server shall have provision to push data to Purchaser's Servers for integration / mapping of production rates and losses etc. to Purchaser's SAP system.
- Logging of gas compressed by respective compressors.
- In case MNGL need the live data access, same shall be provided by the bidder.
- Note: SCADA is not in bidder's scope. Ethernet port is to be provided for SCADA communication. SCADA compatibility is to be provided for remote monitoring.

6 **INSTRUMENTATIONS**

- 6.1. All Instruments shall be suitable for an area classification of "Class 1, Division 1, Group D as per NEC "OR "ZONE 1, Group IIA/IIB as per IS/IEC".
- 6.2. All package mounted transmitters/transducers & temperature element shall be intrinsically safe " ia" as per IEC 79-11 and solenoid valves, switches and related junction boxes shall be certified flame proof (Eexd) as per IEC 79-1 by a statutory body viz. FM, BASEEFA etc. for the specified hazardous area classification. Other special equipment's/instruments, where intrinsic safety is not feasible or available the same shall be flame proof (Eexd) certified suitable for the specified hazardous area by a statutory body as per IEC 70-1. All analog as well as digital input to PLC shall be connected through barriers. All analog barrier shall be isolator type.
- 6.3. The compressor package instrumentation & control is to be configured for manual as well fully automatic control system including starting, shutdown as applicable for unattended operation. Control system shall be PLC based with make and model no. duly approved by MNGL.
- 6.4. Instrumentation electronics shall be certified by a recognized authority such as BASEEFA, PTB, LCIE, CESI, INIEX, and SMRS./ CCOE or its equivalent certificate (FM, CSA , ATEX, UL, CMRI).
- 6.5. All the instrumentation shall be capable of operating for full range of operation. For detailed instrument specification refer attached Section: General Specification for Instrumentation.
- 6.6. If required, separate junction boxes shall be provided for each type of signal i.e., analog, digital, solenoids, RTD thermocouple and power supply. Instrument junction boxes should not have any high voltage connection.
- 6.7. All pressure gauges and pressure transmitters shall be provided with block & bleed valves and have accuracy of + or - 1% of Full Scale Deflection (FSD). Centrally located gauges to monitor machine performance from single location is accepted. Also, brass type needle valve for isolation of Pressure gauges and pressure transmitters is accepted.
- 6.8. The temperature gauge shall be generally gas in steel filled type, weatherproof & with capillary extension. Capillary tubing shall be min SS 304 with stainless steel flexible armoring. The gauge shall have accuracy of + or - 1% Full Scale Deflection (FSD). The range shall be 1.5 times

of operating temperature.

- 6.9. All field instruments power shall be limited to 24 VDC. Power conversion unit if required shall be in the scope of the vendor. All instruments and enclosures shall be dust proof and weather proof to IP 65 as per IEC-529/ IS 2147.
- 6.10. Units of measurement shall be:
GAS FLOW -Kg/hr & SM³/hr
PRESSURE -Kg/cm² g
TEMPERATURE -⁰C
- 6.11. The package shall be supplied with 4 nos. mass flow meter, one each for compressor suction, discharge, engine fuel consumption and for measuring vent loss. While the suction, discharge and fuel consumption meters shall be Coriolis principle based approved for custody transfer application, the mass flow meter for measuring vent loss shall be thermal type.
- 6.11.1 Each Mass Flow meter shall include a sensor with integral transmitter i.e. meter electronics certified intrinsically safe/explosion proof by statutory authority suitable for the required hazardous area as per IS-2148 /IEC-79. Also, the offered sensor and the transmitter shall be weather proof to IP 65 as per IS-2147/IEC-529. Statutory authority for local installation is PESO.
- 6.11.2 Allowable pressure drop for the flow meter at the inlet of the engine is 0.2 kg/cm² and allowable pressure drop for the flowmeter at the inlet and outlet of the compressor shall be 1.0 kg/ cm². Offered mass flowmeter shall be necessary for Custody Transfer application but not exceeding 0.5% of span.
- 6.11.3 Calibration for the offered mass flow meter shall be in Kg/hr and SM³/hr. Pressure, Temperature compensation shall be provided by the meter.
- 6.11.4 Flying lead type electrical termination is not acceptable. All electrical connections shall be ½” NPTF. Cable glands shall be provided for electrical power, signal and control connections. Cable glands shall be double compression type and certified weatherproof and explosion proof for the required area classification as per IS-2147 and IS-2148.
- 6.11.5 Offered Mass flow meter shall be completely free from corrosion of measuring tube due to alternating stresses continuously occurring in the tube. Also measuring tube shall be completely free from erosion, which may result due to fluid velocity.
- 6.11.6 The design of meter electronics shall be in compliance with the electromagnetic compatibility requirements as per IEC-801.
Meter Electronics shall include all the associated pre-amplifiers converters lineariser etc.
- 6.11.7 Installation details like straight run requirements, recommendation for horizontal /vertical installation, minimum distance between upstream and downstream pipe bends from Mass flow meter to be provided.
- 6.11.8 Vendor shall calibrate each Mass Flow meter at his shop or any recognised test house with the fluid (Use design process conditions) for which it is to be used as per Clause no.9 of MPMS (Draft standard Nov. 2000). In case it is not possible to calibrate the Mass Flow meter with actual fluid. Vendor must indicate:
- a. Fluid used for calibration
 - b. Correction factor/Adjustment required for actual process fluid. In any case, inaccuracy when extended to actual process shall not exceed the specified limits (as per manufacturer's standard).
- 6.11.9 Vendor shall submit the following test certificates and test reports for purchaser's review:-
- a. Material test certificate with detailed chemical analysis from foundry (MILCertificate).
 - b. Certificate of radiography / x-ray for any welded joint.
 - c. Hydrostatic test report with pressure of 1.5 times the design pressure.
 - d. Calibration report including calibration factors for each Mass flow meter certificate from statutory body for offered sensor and transmitter for required area classification.
- 6.11.10 Individual (2/3 core) cabling is required for each field instrument from field JB to avoid multiple JB's and multicore cables in field for easy trouble shooting & replacement.
- 6.11.11 Each cable shall be neatly tagged & dressed for each instrument.

6.11.12 There shall be provision of relay for DO cards between PLC & SOV & barriers/ isolators for DI cards between field & PLC. The barriers and isolators should be either single or double channel in place of multichannel for easier replacement.

6.11.13 All the instrumentation shall be capable or operating for full range of operation.

6.11.14 Separate junction boxes shall be provided for each type of signal i.e. analog, digital, solenoids RTD, thermocouple, intrinsic safe and for power supply. No cable shall share power & signal.

6.11.15 Suitable bypass for interlocks shall be provided for start-up.

6.11.16 Compressor package shall be provided with the following indicators:

- Pressure Gauges at each gauge suction and at final discharge
- Temperature Indicators (Local Panel) at each stage discharge
- Digital Temperature Transmitters at each stage suction and after final stage cooler, providing display at HMI, and having interlock with compressor trip upon exceeding 59 degrees celcius.
- Oil pressure indicator on each pressure lubrication system
- Oil levels indicator, field mounted
- Hour meter shall be available at HMI. Separate hardware not considered.
- Non- resettable electromechanical hour meter on local control panel.
- Hydraulic oil cooler inlet & outlet temperature on local gauge panel (if required)
- Hydraulic oil pressures each stage on local gauge panel (if required) The Compressor package shall be provided with the following trip devices:
 - a. Low oil level protection devices
 - b. High oil temperature devices
 - c. Low suction pressure protection devices
 - d. High discharge temperature protection device
 - e. Coolant flow low devices
- Flame detection
- Gas detection
- Emergency stop devices
- Fail safe/ wire break alarm for safe operation
- Interlocking provision in PLC program for tripping of machine

The compressor package shall be furnished with the following trip logic that shall stop the compressor and suction of compressor shall be isolated:

- On low oil level
- On high oil temperature
- On low suction gas pressure
- On high discharge pressure
- On high discharge gas temperature
- On coolant flow low
- On fire detection
- On gas detection
- On pressing manual stop button at local control panel
- On pressing emergency stop devices

6.11.17 Each compressor package shall be provided with an audible and visual alarm system for

annunciation on compressor abnormalities.

6.11.18 Junction box shall be of explosion proof type with 10-20% extra terminal strip & cable gland shall be of double compression type.

6.11.19 Gas detectors and flame detectors should be mounted with the canopy.

6.11.20 ESD button (3 Nos.) shall be provided (Customer Interface room, locally mounted on package and Panel room). A separate hooter for customer interface room shall be provided with annunciation window alarm of individual protection device.

6.11.21 All instrument shall be of internationally reputed manufacturer

6.11.22 Emergency shut down devices

6.11.23 The emergency shut down (ESD) system is also in scope of vendor. This shall be in accordance with NZS 5425. A fail-safe system shall be designed and incorporated to isolate cascades storage from dispensers, stop compressor isolate the compressor suction storage line and cut off power supply on activation of ESD switch. This ESD switch shall have to be manually reset to restart the compressor package again.

6.11.24 Local Control Panel

- There shall be three independent ports available in the PLC with all the parameters available on each individual port.
- Out of three ports, from first port there shall be an arrangement to retrieve the data in external storage device such as memory card/ pen drive. Data may be required in suitable format as per MNGL engineer in charge discretion. This will include critical temperature, pressure, flow, running hour information etc. Depending upon the parameters calculation of gas loss, efficiency, normalized efficiency etc. is also required.
- Second port shall be for remote monitoring of the parameters. Besides PLC display, all the parameters which are measured should be monitored on a HMI/ MMI for remote monitoring as well as of remote operation. Data should be stored at 2 places simultaneously, in case of failure of one device data can be retrieved from second device. Trends, alarms, events should be logged for at least 3 months on day/ hour/ minutes/ basis.
- Third port shall be available for any third party interface which shall be OPC compliant for networking or SCADA. The recorded data or part of the data may be required to transmit to remote locations over open/ secured network through internet/ Ethernet using local cable/ data card/ sim card (GPS/ GPRS/ CDMA). Modem/ router or any other medium to transmit the data should be available. Vendor shall provide protocol details to MNGL and also provide necessary support for third party interface for remote data connectivity.
- Redundancy in PLC is required. PLC shall incorporate all process parameters (specified elsewhere) and status of compressor, engine & priority panels and shall be modular in construction with 100% redundancy with respect to CPU, Power supply, Interface. PLC components/ system shall be tropicalised, MIL standard adopted with complete wiring and necessary terminals. Wiring to be color coded with cross ferruling in position. PLC shall be capable of carrying out on line routines for at least ten separate loops without affecting the scan, cycle & updating time etc. PLC shall be configured as a remote terminal unit of supervisory computer and data acquisition system complete with GPRS and Ethernet connectivity. One card for transferring and accessing data from minimum twenty devices with RS485 port shall be provided. In case of failure of master/ active controller/ CPU, standby controller/ CPU should take over the control in bump less manner. All values & data should be available through both the controllers immediately, i.e., there should be no data loss.
- Successful bidder to include in scope live demonstration of remote monitoring of all PLC logged parameters in one machine at his works. MNGL may ask for the same. However, this may be required to be demonstrated at site.
- PLC based logic circuits shall be used for control & interlock of the compressor package with RS485 SCADA
- Local control panel shall be furnished with annunciation window alarm of individual protection device and a common hooter for audible alarm.
- Local panel should have separate push button for start, stop, emergency stop, alarm

acknowledge, alarm reset & test button for checking healthiness of annunciation system.

6.11.25 Priority fill system

Contractor shall supply priority fill system with compressor top-up facility inclusive of regulating valves, check, bypass valves & liquid filled pressure gauges all mounted in a stainless-steel panel. All fittings and tubes used in priority system shall be of stainless steel of suitable pressure rating. The priority fill system is to be installed to ensure that vehicle filling takes priority over cascade filling and direct CNG to three storage banks in correct sequence. The compressor shall shut down once all three-cascade storage banks are filled to 250 barg. Compressor shall start on pressing of manual start push button & automatically when the cascade storage high bank pressure of compressor falls to 200 barg and shutdown automatically when all 3 stages of stationery cascade are filled to a pressure of 250 barg.

6.12. Certification:

The requirement of statutory approvals for usage of equipment/instruments/system in electrically hazardous areas shall be as follows:

- a. The vendor shall be responsible for obtaining all statutory approvals, as applicable for all instruments and control systems.
- b. Equipments/instruments/systems located in electrically hazardous areas shall be certified for use by statutory authorities for their use in the area of their installation. In general, the following verification shall be provided by the vendor.
 - Bidder shall provide PESO or Equivalent certificates (from FM, CSA, ATEX, UL, CMRI etc.) from country of origin for all intrinsically safe/flameproof protected by other methods equipment/instrument/systems, which are manufactured outside India. If required, bidder shall provide necessary certification/approvals/authentication, for all such intrinsically safe/flameproof equipment/instrument/systems, by the Indian authority – PESO.
 - For all flame proof equipment manufactured within India, the testing shall be carried out by any of the approved testing houses- Central Mining Research Institute (CMRI)/ERTL etc. The item shall in addition bear the valid certification from PESO and also the manufacturer shall hold a valid Bureau of Indian Standards (BIS) licence.
 - For all intrinsically safe equipment manufactured within India the testing shall be carried out by any of the approved testing houses – Central Mining Research Institute (CMRI)/ERTL etc. The item shall in addition bear the valid certification from PESO.

7 EARTHING / CABLING

Metallic part of all equipment not intended to be live shall be connected to earth as per provisions of IS: 3043/IEC recommendation. Grounding of all electronics shall be separately connected to earth using insulated copper wire. Grounding of electronic equipment shall not be connected to earthing for electrics or equip-potential bonding.

7.1 Cabling

- 7.1.1 Cables for Power & Control inside as well as outside the enclosure shall be 2.5 Sq. mm (copper) and 1.5 Sq. mm (copper) respectively.
- 7.1.2 Cables shall be 1100-volt grade, stranded copper conductor, PVC insulated PVC sheathed, steel round wire armoured. FRLS cables.
- 7.1.3 Cables shall be terminated using double compression type metallic flameproof cable glands and copper lugs.
- 7.1.4 Spare cores to be kept in each control cable.
- 7.1.5 All Junction Boxes (JBs) shall have metallic enclosure
- 7.1.6 Cables for control circuits shall be single phase (2 wire), 240 V, 50Hz A.C. supply from UPS.

8 INSPECTION AND TESTING

8.1 General

- a) Inspection and Test Requirements have been spelled out in respective Equipment Data Sheets and Technical Specifications and QAP.
- b) Bidder shall confirm compliance to all inspection and testing requirements stipulated therein and included the inspection charges in the lump sum cost.
- c) All tests which are required to be witnessed as per data sheet and this specification shall be witnessed by the Purchaser. The bidder shall notify the timing of such inspection and testing to MNGL at least 15 days in advance and MNGL shall depute their representative for witnessing the test and/or a third-party inspection agency shall be appointed by MNGL for witnessing the test at MNGL's own cost.
- d) Bidder shall submit detailed Test Procedure for Approval of the Purchaser two months in advance of the actual date of conducting each test.

8.2 Mechanical running test (MRT)

- a) The MRT for the 25% compressors block of the lot shall be carried out with job or shop driver including complete job driving system i.e., job driven V-belt, job pulleys etc., for 4 hours continuously at the premises of compressor block OEM. The compressor need not be pressure loaded for MRT test. During this test following shall be recorded at agreed intervals (as applicable).

- Vibration levels measured on cylinders and frame
- Oil cooler inlet and outlet temp (as applicable)

Subsequent to satisfactory run the compressor shall be examined as per standard procedure & following shall be examined as minimum:

- Visual examination of position rod, cylinder guide bore without dismantling

If any of part found damaged, all similar components shall be stripped for inspection. The MRT test shall be repeated after replacement of such parts. Bidder to submit their FAT format along with bid, which shall be approved during detailed engineering

9 PERFORMANCE GUARANTEES, LOADING AND PENALTIES

9.0 This section describes the guaranteed parameter, which the CNG compressor package must fulfil, the penalty for shortfall in guaranteed parameters and rejection of compressor package by the Purchaser.

9.1 The guaranteed parameter shall be adjusted to account for variation in gas composition and prevailing ambient condition during testing.

9.2 Necessary calculations correction curves shall have to be furnished by Bidder along with bid, which shall be final & no deviation shall be permitted afterwards.

9.3 In case of any inconsistency in manufacture and/or operation of supplied compressor package, Bidder shall at his own risk and cost, eliminate the defects to the satisfaction of Owner.

9.4 Compressor Capacity (As applicable for 1200 SCMH)

Bidder shall guarantee 1200 SCM/hr capacity (as the case may be) of compressor with design case gas composition, at suction pressure of 16 kg/cm²g, suction temperature of 38°C, discharge pressure of 255 kg/cm²g with the negative tolerance for errors in instruments and measurements.

Since the compressor suction pressure varies from 16 kg/cm²g to 19 kg/cm²g the compressor shall be sized / selected for specified capacity of 1200 SCMH at 16 kg/cm²g (with no -ve tolerance) whereas the driver shall be selected on the basis of compressor BkW with either 16 kg/cm²g or 19 kg/cm²g whichever is higher.

For calculation purpose 1kg of CNG =1.3699 SCM

The same shall be used to establish the capacity at test bed during package performance test.

9.5 Loading Against Package Gas Loss:

The bidder shall design the compressor package so that no venting and leakage of gas takes place. Bidder shall indicate actual vent & leakage losses through the compressor package. If package loss is quoted more than 1% of suction capacity gas consumption than bid shall be rejected. This quoted figure will be used for evaluation and total quoted price for all compressors towards supply, special tools and tackles, erection and commissioning will be loaded as per following formulas:

$$F = G \times H \times I \times N \times W \times Df$$

Where, F = Loading amount in Rs.

G = Vent/Leakage rate quoted in percentage

H = Cost of Natural Gas per Kg @ Rs. 71/- per kg

I = Avg. no. of running hours per year i.e. @ 3650 hours

N = Number of machines

W = 876 kg for 1200 SCMH

Df = Discounting factor @ 10 % to arrive at Net Present value (NPV) based on 5 Years i.e. 3.791

Loading against Fuel Consumption:

The compressor package shall be designed in such a way that Gas Consumption of engine (Kg/Hr) should be minimum for production of CNG. Bidder shall indicate actual gas consumption for their compressor package. This quoted figure will be used for evaluation and total quoted price for all compressors towards supply, special tools & tackles, erection and commissioning will be loaded as per following formulas:

$$F = (G-Q) \times H \times I \times N \times Df$$

Where, F = Loading amount in Rs.

G = Bidder's Gas consumption rate quoted in Kg/hr for every 1200 SCMH (876 Kg) of CNG produced

Q = Lowest Fuel Consumption rate quoted among all vendor in Kg/hr for producing 1200 SCMH (876 Kg) of CNG produced or 30.5 kg/hr whichever is higher

H = Cost of Natural Gas per Kg @ Rs. 71/- per kg

I = Avg. no. of running hours per year i.e. @ 3650 hours

N = Number of machines

Df = Discounting factor @ 10 % to arrive at Net Present value (NPV) based on 5 Years i.e. 3.791

Fuel Consumption quoted by the bidder under guaranteed parameters shall lie within the range of 30.5 to 33.5 Kg/hr. No benefit will be given below 30.5 Kg/hr. But in case the fuel consumption quoted by the bidder exceeds the upper limit i.e. 33.5 Kg/hr, the bid will be rejected. Therefore, bidders are requested to indicate the fuel consumption very carefully.

However Cumulative loading on package gas loss and fuel consumption limited to 10 % of the supplied value of compressor package (Compressor package cost + Air compressor with receiver & accessories cost+ string test cost)

Loading against lower discharge capacity:

CNG compressor package's lifetime production capacity (in Kgs for 65,700 hours) is an important parameter to compare different makes of compressors being offered by vendors. It is intended to purchase capacity of 876 Kg per 1200 SCMH at 16 Kg/cm² suction pressure.

The loading shall be calculated on basic equipment price (excluding taxes). Packages with maximum capacity below 820 Kgs per hour shall not be accepted.

Penalty towards Excess Gas Loss:

At the start of O&M period or even at any point of time during the O&M period, cost towards excess gas loss beyond the quoted figure shall be deducted from O&M bills.

Following calculations shall be used for deduction towards excess gas loss:

$$F = 1.5 \times [G - (Q \times D)] \times H$$

Where,

F = Penalty in Rupees to be deducted from O&M bill

G = Monthly Vent/Leakage loss observed during O&M period

Q = Vent / Leakage loss quoted

H = Cost of Natural Gas/Kg – Rs. 71/- per Kg

D = Production during the month (discharge meter) Considering G above shall be taken as (Suction – Discharge – Engine Fuel Consumption) OR Reading from Vent Mass Flow Meter, whichever is higher.

Penalty towards Excess Fuel Consumption:

At the start of O&M period or even at any point of time during the O&M period, cost towards excess fuel consumption beyond quoted figure shall be deducted from O&M bills.

Following calculations shall be used for deduction towards excess fuel consumption.

$$F = 1.5 \times (G-Q) \times H \quad \text{Where,}$$

F = Monthly Penalty in Rs.

G = Monthly Actual Gas consumption

Q = Guaranteed consumption rate quoted by supplier for every 876 Kg of CNG x CNG produced during the month

H = Cost of Natural Gas – Rs. 71/- per Kg

Note : The penalty for excess fuel consumption shall be calculated for only those days, when the Suction pressure of the machine is equal to or above the minimum guaranteed suction pressure of 16 kg/cm²g . The days where suction pressure is lower than 16_ kg/cm²g, shall not be considered for calculation of figures “G” & “Q” and thus excluded from calculation of monthly penalty.

Penalty towards Package Efficiency Loss

This penalty shall be imposed on compressor blocks not capable of delivering rated capacity of 1200 SCMH

Following calculations shall be used for penalty towards package efficiency loss:

$$F = 2 \times \{(1200 \times H \times RD \times AD) - M\}$$

Where,

F = Penalty Amount in Rupees

H = Hours clocked in a month

RD = Average RD for the month using GC Data

AD = Air Density = 1.22541

M = Discharge mass flow during the month in Kgs

Note:

- All the penalties pertaining to fuel consumptions, efficiency, gas-loss during O&M periods shall be imposed after rationalization of parameters inline with the performance curves submitted by the bidder along with the Tender documents.
- Gauge Pressure at Station Inlet shall be used as benchmark for imposition of penalties and not suction pressure being displayed at the PLC.
- Pressure regulator shall not be used to reduce the pressure at the compressor block inlet below 16 Kg/Cm².
- In case pipeline pressure at the station itself is less than 16 Kg/Cm², then the penalty shall be imposed if the package delivery falls below discharge values corresponding to the station pressure.

Penalty for Non-Performance during Five Year Period of Operation & Maintenance including one year of warrantee period

Details of Penalty for non performance of equipments

- a. On normal day (i.e. the day other than the schedule maintenance day):
 - i. party has to ensure that the complete package is available for operation for a minimum of 98% of the Operational hours in a Quarter. If availability is below 98% then penalty

@ of 10,000 per % or part thereof shall be applicable.

- ii. Penalty for Compressor package shall be applicable either for daily availability or for monthly availability 98% of compressor package; whichever is higher.
 - iii. In any case, the maximum penalty imposed in a month for non-performance of the equipment would be limited to 50% of the amount of O&M charges to be paid to the party per month per compressor.
 - iv. Bidder shall carry forward unutilized breakdown/availability hour for next one quarter with the approval of MNGL.
 - v. In case if the services for attending major maintenance are to be provided by third party like fabrication work shop, Motor winding, etc., then Sundays/ Public Holidays / Intervening holidays will be excluded from arriving at B/D time.
 - vi. Attending to Breakdown needs activities like fabrication, casting, forging, motor rewinding or any other that takes time however, and the total continuous downtime shall not be more than 72.0 hours.
 - vii. Any Major Overhauling/ maintenance require to send at OEM or Third-party workshop the permissible time for major servicing of engine at OEM workshop is 120 hours.
 - viii. Daily necessary Check ie. Daily PM Checklist, Oil Top-up, Housekeeping time shall be not considered while calculating breakdown.
 - ix. If the equipment is down for more than 8 hours on any day, Penalty would be applicable as follows:
 - upto 24 hours: Rs. 10,000/-,
 - Beyond 24 hours: Rs. 20,000/- per day.
- b. On schedule maintenance day:
- i. The party would be required to carry out the recommended schedule/preventive maintenance of the equipments for which the party has to indicate the time required for each type of schedule maintenance.
 - ii. If the equipment is down for more than 4 hours & upto 12 hours beyond the time indicated for the agreed schedule maintenance, the party would be penalized Rs. 10,000/- and for more than 12 hours Rs. 20,000/- per day.
 - iii. In any case, the maximum penalty imposed in a month for non-performance of the equipment turns out be 50% or more of the amount of O&M charges to be paid to the party per month per compressor (a complete cost break up of O&M charges need to be furnished by the bidder), MNGL will take necessary actions as per terms and conditions of the contract for such non-performance.
 - iv. In case there is a continuous breakdown beyond 72 hours up to 15 days, 50% of monthly comprehensive maintenance charges excluding operational part will be deducted.
 - v. In case there is a continuous breakdown beyond 15 days, which is not in the control of the contractor, no maintenance charges will be paid. Only operation charges may be payable on sole discretion of EIC.

10 PAINTING AND PROTECTION

10.1 Packing shall be sufficiently robust to withstand rough handling during ocean shipment & inland journey. Sling points shall be clearly indicated on crates.

10.2 Surface Preparation

- (a) Rust, rust scale and foreign matter shall be removed fully to ensure that a clean and dry surface is obtained. The minimum acceptable standard for blast cleaning shall be Sa 2-1/2 or equivalent as per Swedish Standard SIS- 055900-1967 or equivalent.
- (b) Blast cleaning shall not be performed where dust can contaminate surfaces undergoing such cleaning or during humid weather conditions having humidity exceeding 85%.
- (c) The first coat of primer must be applied by brush on dry surface. This should be done immediately after cleaning.

(d) Surface shall be inspected by MNGL/ third party before application of primer.

10.3 Painting (Primer & Finish Coat)

Following primer and finish coats to be applied on the canopy and all structural parts as a minimum: -

- a) Primer: Two component epoxy zinc phosphate primer with minimum volume solids of 59%, an initial cure of 75 minutes at 25 deg. C and a weight of around 2.52 kg/liter.

No. of Coats: 1

DFT: 75 (micron) each

- b) Primer: Two component intermediate coat with epoxy high build MIO (micaceous iron oxide) of minimum volume solids of 80%, an initial cure of 60 minutes at 25 deg. C and a weight of around 2.1 kg /liter.

No. of Coats: 1

DFT: 100 microns

- c) Finish Coat: Acrylic Polyurethane paint

No. of Coats: 2

DFT: 50 (micron) each coat

Total DFT 100 microns

Total DFT after application of primer and paint shall be 275 e (micron) minimum

10.4 The vendor to ensure that exterior steel surface of equipment and piping painted shall have a fade free life without oxidation of paint surface for at least 5 years in an environment of bright sunlight with an intense UV content.

10.5 The headers of air-cooled exchanger shall be zinc sprayed/ heat resistant epoxy painted.

10.6 Bidder shall make all arrangement for painting of enclosure once in period of 3 years or whenever required whichever is earlier.

11 ERECTION, TESTING AND COMMISSIONING AT SITE

11.1 Bidder shall be responsible for erection commissioning, performance test, field noise level test and field trial run of all compressor packages at site.

11.2 Bidder shall be liable to pay all local taxes, levies applicable and comply with rules, laws prevailing in concerned state.

12 FIELD TRIAL RUN / PERFORMANCE ACCEPTANCE TEST

1) FIELD TRIAL RUN (Commissioning and Commercial Operation) :

Bidder shall conduct a field trial run of each compressor package for minimum 72 hours cumulative or 6 hours continuous duration near the guaranteed points in which satisfactory operation of complete package together with all accessories/auxiliaries controls shall be established for specified operating conditions prior to the start of operation and maintenance period as defined in the contract. During the field trial run the bidder will be allowed a maximum of THREE attempts to complete the above-specified test. The Equipment shall be considered commissioned after the successful completion of Field Trial Run. Further Commencement of commercial operation will be intimated by client.

2) Package Performance Test (PT)

Duration of PG test shall be 4 hours with compressor running on continuous basis, however if load is not available at site intermittent running for 4 hours shall be permitted with maintaining minimum continuous operation of ½ hour. Bidder to submit PG test procedure for review / approval. Complete package shall be performance tested as a module along with gas engine & compressor as per Performa (to be decided during engineering). Bidder shall demonstrate all controls, shutdown, trips & alarms, functioning of Instrumentation system, PLC, Motor / Gas engine etc. Pressure and temperature of gas shall be considered at purchaser's boundary limit (or before filter unit of package if provided) and as indicated in the Instrumentation schedule; if provision not available then supplier shall install necessary pressure and temp measuring devices. Discharge PT & TT of compressor will be used for discharge pressure and temperature

measurements. All instrument duly calibrated, tools & tackles, any modification required for conducting PT shall be in the scope of supplier.

The PT shall be conducted only after 30 days' running of the machine after successful commissioning or after 30 days from the date of commercial operation, but not later than 90 days from the date of commercial operation of the machine. The delay in conducting PT beyond 90 days shall be liable for PRS unless such delays are solely attributable to the owner(i.e. due to inadequate load, non-availability of CNG vehicles for conducting PT).

The test shall be the basis of assigning penalties on the Bidder of the package thereon. Bidder shall submit the detail test procedure for the same, which shall be approved by PURCHASER/CONSULTANT. The test package shall be witnessed by PURCHASER/CONSULTANT.

Bidder to note that prime mover speed correction shall not be allowed below guaranteed speed. Temperature and pressure will be considered at purchaser's boundary limit, if provision is not available at compressor suction and discharge as explained above.

3)OPERATION & MAINTENANCE SERVICES: The date of start of commercial operation as intimated by client will be considered as date of start of the annual maintenance contract. However, bidder shall be paid only 50% of O&M charge for operation and maintenance of the compressor from the date of commercial operation upto the date of performance test as part payment against O&M till the capacity and other guaranteed parameters of the package is established through PT. The balance 50% of O&M charge (from the date of commercial operation upto the date of PG test) shall be released to the bidder subsequent to successful PT (ie, after establishing all the guaranteed parameters as per tender) In case the PT is not successful, the balance 50% shall be forfeited.

13 SPARE PARTS, SPECIAL TOOLS AND TACKLES

- 13.1 Special tools & tackles for erection and commissioning and for operation & maintenance are required to be supplied along with the package. These tools and tackles left after work completion shall be the property of MNGL.

Vendor shall maintain sufficient spares to fulfill the warranty & subsequent four years period requirements. In case of additional requirement during the warranty period, if any spare part is taken from MNGL, the same shall be replaced to MNGL with new part supported by necessary document for its authenticity of being new & original spare part.

- 13.2 A brand-new separate set of special tools and tackles as per compressor as required for preventive maintenance as well as breakdown maintenance beyond the contractual one-year operation period shall be supplied by the packager, which shall form the property of MNGL. Special tools shall include 2 nos. Web deflection gauge along with supply of 3 nos. of Compressor package.

14 DATA AND DRAWING

- a) Drawings and Data shall be furnished in conformity with the Bidder Data Requirements Forms attached with Enquiry Specifications.
- b) Bidder shall furnish all the information at the time of bidding as specified in the relevant Bidder Data Requirement (BDR) forms.
- c) The data requirement after placement of Fax of Intent (FOI) is indicated in the Bidder Data Requirement Forms for the respective equipment, including the number of weeks within which this data is to be provided. Bidder shall confirm that all data as required shall be furnished by him and shall indicate the Bidder's promised data in the columns provided.
- d) After the placement of FOI, a conference (kick off meeting) will be held at such place, as may be mutually agreed upon between the Bidder and the purchaser within 15 days from the date of placement of FOI. The intent of this conference shall be to discuss / clarify various requirements and finalize the modus operandi for execution of the contract within the scheduled delivery period.

- e) Bidder shall furnish the Drawings/Documents for Purchaser's Review / approval as per the Bidder Data Requirement (as specified in the Specifications/Bidder Data Requirement forms). The review comments for major and critical drawings (such as system P&ID's, General Arrangement Drawings, Foundation Drawings, Performance characteristics, Pulsation and Vibration Study Reports, Torsional Analysis etc.) shall be discussed across the table at such date and place as may be mutually agreed between the Purchaser and the Bidder.
- f) Along with the supply of each compressor package, the supplier shall provide software for PLC & HMI, ladder logic and software authorization password/license in two sets.

NOTE- DATA SHEETS ARE ATTACHED IN ANNEXURE-1

ANNEXURE-1

| Guaranteed Parameters for Basis of loading and penalty | | | |
|---|---|---------------|-------|
| Sr. No | Parameters | Bidder's Data | Unit |
| 1 | Compressor Capacity at suction pressure @16kg/cm ² (g) (minimum 1200 SCM/H & 876 kg/hr) (Basis for penalty) | | SCMH |
| 2 | Fuel (Gas) consumption of package in Kg/hr, Density of natural gas 0.73 Kg/SCM, NCV of 8605 Kcal/SCM (basis for loading and Penalty) | | Kg/hr |
| 3 | Gas loss as % of production, including loss from SRV, due to oil op ups and idling (Basis for loading & penalty) | | % |
| | | | |
| Guaranteed General Package Data | | | |
| Sr. No | Parameters | Bidder's Data | Unit |
| 4 | Compressor BkW in KW @ Rated Conditions (No + ve tolerance) | | KW |
| 6 | Net of all auxiliaries/package ventilation loads in KW | | KW |
| 7 | Site rated BkW of Gas Engine (No – ve tolerance) | | KW |
| 8 | Noise level @ 1 meter from enclosure (required 75 dBA) | | dB |

Note

Bidder to quote in the Unit as asked for in the above table.

Bidder has to fill all the rows in above table. If any row is not filled by bidder or above tables are modified in any manner, bid will be rejected summarily.

Conversion factor for Kg to SCM is 1 kg = 1.3699 SCM

Rated Conditions: suction pressure:16 kg/cm²g, suction temperature: 38°C, discharge pressure: 255 kg/cm²g

DATA SHEET- HEAT EXCHANGER

| | | | |
|----|--|--------------------------------------|----------------------------|
| 1 | GENERAL | | |
| 2 | PROJECT: PROCUREMENT OF COMPRESSORS | | |
| 3 | OWNER: | SITE: | |
| 4 | Item No. : Service : Intercooler / Aftercooler for Compressor Package | | |
| 5 | NOTE: ■ SCOPE OPTION / INFORMATION SPECIFIED BY PURCHASER □ INFORMATION REQUIRED FROM VENDOR | | |
| 6 | □ Manufacturer: | Type: □ Forced Draft □ Induced Draft | |
| 7 | □ Bundle Size: m x m x m | Bundles/Section | Number of Units: |
| 8 | Bundles/Unit: | In Parallel / Series | Section Size: |
| 9 | Surface/Bundle: m ² | Bare Tube: m ² | Section/Unit: |
| 10 | Surface/Bundle: m ² | Bare Tube: m ² | Plot Area/ Unit: |
| 11 | PERFORMANCE (Of One Unit) | | |
| 12 | Heat Exchanged: kcal/hr | | |
| 13 | Transfer Rate: kcal/hr m ² °C | (Finned Surface) | (Bare Surface) |
| 14 | TUBE SIDE | | |
| 15 | Fluid Circulated @15.4 EC | GAS | Gravity: Liquid API SG |
| 16 | Total Entering Gas kg/hr | | |
| 17 | Operating Temperature m ² °C/kcal | In: | Out: Fouling Resistance hr |
| 18 | Operating Pressure Passes / Bundle kg/cm ² | | |
| 19 | AIR SIDE | | |

| | | | | |
|----|---|--|----------------|----------------------------------|
| 20 | Temperature | In : 47.5 | Out: | Altitude m |
| 21 | Total Flow/Unit kg/hr | | | Static Pressure kg/cm² |
| 22 | Quantity/Fan kg/hr | | | Power/Fan kW |
| 23 | Face Velocity m/sec | | | Power/Unit kW |
| 24 | CONSTRUCTION(Each Bundle) | | | |
| 25 | Design Pressure: kg/cm²g °C | Test Pressure: kg/cm²g | | Design Temperature: |
| 26 | Code Requirements: | | | |
| 27 | Type of Tubing: | Tube Material: SA 179 | | Fin Material: Al |
| 28 | Tube Bare Tubes (no's) : | No. of rows: O.D. | | BWG/Thk Length |
| 29 | Fins : Spacing /inch. O.D. | Root Dia | | Thickness: |
| 30 | Header Type: Plug / Cover | No. of Splits: | | Material : |
| 31 | Plugs/Gaskets | Side Frame : C.S. Inside Zinc Protected | | |
| 32 | Nozzles | In : | | Out : |
| 33 | Couplings | Vent: | | Drain : |
| 34 | CONSTRUCTION(Each section) | | | |
| 35 | Structure kgf/m | CS | Sec./Gr. No. | Design Wind Load : |
| 36 | Plenum Chamber | CS inside Zinc Protected | | Type : |
| 37 | Fans | No. | Dia. | RPM Mfr. |
| 38 | Blades | Material : | No./Fan | Pitch Angle(Design) : |
| 39 | Hubs | Material : | Pitch : | Autovvariable / Adjustable (No.) |
| 40 | Louvers | Material : | Type : | Mfr. |
| 41 | Weights kg Each Section(Dry) : | | Full of Water: | |
| 42 | Each Bundle(Dry) : | | Full of Water: | |
| 43 | APPLICABLE SPECIFICATIONS API Standard 661 | | | |
| 44 | REMARKS 1. Air coolers shall be designed for 20% excess capacity than required normally. | | | |
| 45 | Exchanger shall be designed with air side temperature of 47.5 0C. | | | |
| 46 | Separate data sheet shall be filled by the bidder for each service i.e. Inter cooler and After cooler | | | |

DATA SHEET- GAS ENGINE

| | | | |
|----|--|--------------------------------|--------------------------------------|
| 1 | GENERAL | | |
| 2 | PROJECT: PROCUREMENT OF CNG COMPRESSORS | | |
| 3 | OWNER: | SITE: | |
| 4 | SERVICE: DRIVER FOR CNG COMPRESSOR | | |
| 5 | NO. REQD: | | |
| 6 | NOTE: <input checked="" type="checkbox"/> SCOPE OPTION / INFORMATION SPECIFIED BY PURCHASER <input type="checkbox"/> INFORMATION REQUIRED FROM VENDOR. | | |
| 7 | ■ SITE / INSTALLATION DATA | | |
| 8 | SITE CONDITION: | | |
| 9 | LOCATION: | ■ OUTDOOR | ■ CLOSED ROOM WITH FORCED AIR |
| 10 | VEENTILATION SYSTEM | | |
| 11 | SITE DATA: | AMBIENT TEMPERATURE (°C): | MAX: 48 |
| 12 | MIN:0 | RELATIVE HUMIDITY(%): | MAX: 90 |
| 13 | ALTITUDE(M): 560 | | |
| 14 | ELECTRICAL AREA CLASSIFICATION: | | |
| 15 | Class-I, Division I, Group D as per NEC | | |
| 16 | Zone I, Group II A/ II B as per IS/ IEC | | |
| 17 | <input type="checkbox"/> UTILITIES DATA | | |
| 18 | COOLING WATER | | |
| 19 | COOLING WATER TEMP. (°C) | SUPPLY (DESIGN/MAX/NOR/MIN): | |
| 20 | RETURN (MAX): | SUPPLY (DESIGN/MAX/NOR/MIN): | |
| 21 | COOLING WATER PR. (KG/CM²G) | SUPPLY (DESIGN/MAX/NOR/MIN): | |
| 22 | RETURN (MIN): | COOLING WATER CHARACTERISTICS: | |
| 23 | <input type="checkbox"/> INSTRUMENT AIR: | | |
| 24 | SUPPLY PRESSURE (DESIGN/MAX/NOR/MIN)(KG/CM² G): | | |
| 25 | <input type="checkbox"/> ELECTRIC POWER | | |
| 26 | ELECTRIC SUPPLY: AC / DC | VOLTS | |
| 27 | H Z | | |
| 28 | <input type="checkbox"/> APPLICABLE CODES & STANDARDS | | |

| | | |
|----|--|----------------------|
| 26 | ■ NOISE SPECIFICATION: ■ APPLICABLE TO M/CMAX. 75 DBA@ 1.0 M OUTSIDE THE ACOUSTIC ENCLOSURE | |
| 27 | ■ EXHAUST GAS EMISSION: - STATUTORY REQUIRMENTS AS PER CENTRAL POLLUTION CONTROL BOARD | |
| 28 | ■LISTING/APPROVAL OF ENGINE REQUIRED FROM: ■ UL/FM □ TAC | |
| 29 | ■ AIR RECEIVER FOR STARTING AIR SYSTEM ASME SEC-VIII DIV 1 □ AIR COMPRESSOR FOR STARTING AIR SYSTEM MANUFACTURER'S STD. | |
| 30 | □SHELL AND TUBE TYPE EXCHANGERSMANUFACTURER'S STD. □ AUXILIARY PUMPS MANUFACTURER'SSTD. | |
| 31 | □ AIR COOLED HEAT EXCHANGERS/RADIATOR MANUFACTURER'S STD. □ OTHER TANKS AND VESSELS MANUFACTURER'S STD. | |
| 32 | DRIVEN EQUIPMENT | |
| 33 | ■RECIPROCATING GAS COMPRESSOR | |
| 34 | ■ DUTY: INTERMITTENT | |
| 35 | PROBABLE PERIOD FOR CONTINUOUS RUNNING: 20 HOURS WITH FREQUENT STARTS AND STOPS | |
| 36 | ■DURATION OF MAX. LOAD: 20 HOURS | |
| 37 | □ MINIMUM BKW OF THE DRIVEN EQPT. KW: @ RPM: | |
| 38 | □RATED BKW OF THE DRIVEN EQPT. KW: @ RPM: | |
| 39 | □ MAXIMUM BKW OF THE DRIVEN EQPT. KW: @ RPM: (@ R.V. SET PRESSURE) | |
| 40 | □ FOR MECH. DRIVE APPLICATIONS: MINIMUM SITE RATING OF THE ENGINE REQUIRED KW @ RPM | |
| 41 | □ACCOUNTING FOR ENGINE DERATION FOR SITE CONDITIONS & ALTERNATOR EFFICIENCY WITH ENGINE DRIVING ITS ALL AUXILIARIES. | |
| 42 | □ DIRECTION OF ROTATION OF DRIVEN EQUIPMENT VIEWED FROM COUPLING END : | |
| 43 | □ METHOD OF DRIVE: DIRECT THRU FLEXIBLE COUPLING OR V-BELTS | |
| 44 | CONSTRUCTION FEATURES | |
| 45 | □ MANUFACTURER: | □ ENGINE MODEL: |
| 46 | ■TYPE OF ENGINE: FOUR-STROKE ENGINE V COOLING: ■ WATER COOLED | |
| 47 | □TURBO-CHARGED WITH CHARGE AIR COOLER ASPIRATED | □ NORMALLY |
| 48 | □NO. OF CYLINDERS: ARRANGEMENT: | □ CYLINDER |
| 49 | □ BORE/STROKE (MM/MM): | □ COMPRESSION RATIO: |
| 50 | □ SPEED (RPM): (M/SEC.): | □ MEAN PISTON SPEED |
| 51 | □ PERFORMANCE | |
| 52 | RATED ENGINE POWER AT STANDARD OPERATING CONDITIONS AS PER ISO 3046/ BS 5514 (ISO STD. POWER): KW @ RPM | |
| 53 | (USING ONLY THE ESSENTIAL DEPENDENT AUXILIARIES AND WITH 10 % OVERLOAD PROVISION FOR ONE HOUR WITHIN A PERIOD OF 12 HOURS OF OPERATION). | |
| 54 | RATED ENGINE POWER AT SITE CONDITIONS GUARANTEED, NO NEGATIVE TOLERANCE): KW @ RPM | |
| 55 | (USING THE ESSENTIAL DEPENDENT AUXILIARIES AND WITH 10 % OVERLOAD PROVISION FOR ONE HOUR WITHIN A PERIOD OF 12 HOURS OF OPERATION). | |
| 56 | MIN. ENGINE SITE POWER AT, WHICH ENGINE CAN BE OPERATED CONTINUOUSLY. KW @ RPM | |
| 57 | MIN. ENGINE SPEED & CORRESPONDING SITE POWER AT, WHICH ENGINE CAN BE OPERATED CONTINUOUSLY. RPM @ KW | |
| 58 | STARTING TIME REQUIRED FOR FULL LOAD OPERATION (SECONDS): | |
| 59 | AIR FLOW REQUIRED FOR OPERATION OF THE ENGINE FOR: □ COMBUSTION & SCAVENGING □ COOLING & VENTILATION OF ENCLOSURE □AIR COOLERS | |
| 60 | ESSENTIAL DEPENDENT AUXILIARIES ARE: | |
| 61 | ENGINE SHAFT DRIVEN RADIATOR FAN: | KW |
| 62 | ENGINE SHAFT DRIVEN CW PUMP: | KW |
| 63 | ENGINE SHAFT MAIN LO PUM: | KW |
| 64 | □ SPECIFIC FUEL CONSUMPTION: | |

| | | | | | |
|-----|--|----------------------------|--------------------|-----------|-----------------|
| 65 | DESCRIPTION @ REFERENCE CONDITIONS * | FUEL CONSUMPTION, GM/KW-HR | | | |
| 66 | | ISO 3046* | MANUFR'S. STD.* | SITE * | MANFR'S. SHOP * |
| 67 | (A) GUARANTEED ENGINE RATED POWER (100 % CONTINUOUS RATING) | | | | |
| 68 | (B) 75 % OF (A) | | | | |
| 69 | (C) 50 % OF (A) | | | | |
| 70 | (D) 110 % OF (A) | | | | |
| 71 | * STANDARD REFERENCE CONDITIONS: | | | | |
| 72 | TOTAL BAROMETRIC PRESSURE, P, KG/CM ² A | | | | |
| 73 | ATMOSPHERIC TEMP. °C | | | | |
| 74 | RELATIVE HUMIDITY % | | | | |
| 75 | CHARGE AIR & COOLANT TEMP °C | | | | |
| 76 | <input type="checkbox"/> SPEED GOVERNING SYSTEM | | | | |
| 77 | TYPE: <input type="checkbox"/> SINGLE SPEED <input type="checkbox"/> MULTIPLE SPEED | | | | |
| 78 | <input type="checkbox"/> ALL SPEED (VARIABLE SPEED) | | | | |
| 79 | GOVERNOR TYPE: <input type="checkbox"/> ELECTRONIC <input type="checkbox"/> ELECTRO HYDRAULIC | | | | |
| 80 | <input type="checkbox"/> MECHANICAL | | | | |
| 81 | <input type="checkbox"/> STARTING SYSTEM | | | | |
| 82 | <input checked="" type="checkbox"/> METHOD OF STARTING: AUTOMATIC | | | | |
| 83 | <input checked="" type="checkbox"/> METHOD OF STOPPING: AUTOMATIC | | | | |
| 84 | <input type="checkbox"/> TYPE OF COLD STARTING: (CONSIDERING MIN. AMBIENT TEMP. 2°C) | | | | |
| 85 | <input checked="" type="checkbox"/> TYPE OF STARTING SYSTEM: AIR STARTING THROUGH ENGINE MOUNTED PNEUMATIC MOTOR | | | | |
| 86 | REMARKS: | | | | |
| 87 | 1. BIDDER SHALL ENGINEER AND SUPPLY THE COMPLETE AIR STARTING MECHANISM INCLUDING AIR COMPRESSOR, AIR RECEIVER. | | | | |
| 88 | THE PURCHASER SHALL PROVIDE ELECTRICITY FOR AIR COMPRESSOR MOTOR. | | | | |
| 89 | <input checked="" type="checkbox"/> STARTING AIR SYSTEM: (TO BE PLACED OUTSIDE THE ENCLOSURES) | | | | |
| 90 | <input checked="" type="checkbox"/> AIR COMPRESSOR TYPE: SCREW-TYPE KW | | | | RATING: 7.5 |
| 91 | <input type="checkbox"/> RATED CAPACITY (AM3/HR AT INLET CONDITIONS): | | | | |
| 92 | <input type="checkbox"/> DISCHARGE PRESSURE (KG/CM ² G): | | | | |
| 93 | <input type="checkbox"/> BKW: <input type="checkbox"/> RPM: | | | | |
| 94 | <input checked="" type="checkbox"/> AIR COMPRESSOR DRIVEN BY: ELECTRIC MOTOR (Flame Proof) | | | | |
| 95 | <input type="checkbox"/> DRIVER RATING <input type="checkbox"/> KW: <input type="checkbox"/> RPM: | | | | |
| 96 | <input checked="" type="checkbox"/> VOLTS/N/HZ.: 230 / SINGLE/ 50 | | | | |
| 97 | <input checked="" type="checkbox"/> AIR RECEIVER WITH PRESSURE GAUGE, RELIEF VALVE & MANUAL DRAIN VALVE: | | | | |
| 98 | <input checked="" type="checkbox"/> START-STOP SWITCH FOR COMPRESSOR: AUTOMATIC | | | | |
| 99 | <input type="checkbox"/> NO. OF AIR RECEIVER: ONE /TWO CAPACITY OF EACH AIR RECEIVER (M3): | | | | |
| 100 | NOTE: TOTAL AIR RECEIVER CAPACITY SHALL BE SUITABLE FOR ATLEAST SIX (6) CONSECUTIVE STARTS. | | | | |
| 101 | <input checked="" type="checkbox"/> COOLING SYSTEM | | | | |
| 102 | TYPE: <input type="checkbox"/> OPEN CIRCUIT <input type="checkbox"/> CLOSED CIRCUIT | | | | |
| 103 | COOLING | | | | |
| 104 | WATER PUMP DRIVEN BY: <input type="checkbox"/> ELECTRIC MOTOR <input type="checkbox"/> ENGINE | | | | |
| 105 | COOLANT CIRCUIT PIPING WITH TEMP. CONTROL & MAKE-UP TANK. | | | | |
| 106 | HEAT EXCHANGER WITH ANCHOR/FOUNDATION BOLTS: AIR COOLED EXCHANGER | | | | |
| | BY-PASS VALVE: <input type="checkbox"/> CHECK VALVE: | | | | |
| | HEAT EXCHANGER TEMP (°C) <input type="checkbox"/> INLET: <input type="checkbox"/> OUTLET: | | | | |

| | | |
|-----|---|---|
| | ■FAN DRIVEN BY: DRIVER | □ |
| 107 | RATING/SPEED (KW/RPM): | |
| 108 | □ ENGINE WATER TEMP (°C): INLET: | |
| | OUTLET: | |
| 109 | PACKAGER MAY CLUB THE ENGINE JACKET AND COMPRESSOR CYLINDER COOLING WATER SYSTEM WITH ENGINE SHAFT OR COMPRESSOR SHAFT DRIVEN PUMP | |
| 110 | ■FRAME LUBRICATION SYSTEM | |
| 111 | ■TYPE: FORCE FEED LUBRICATION INCLUDING VALVES, OIL PUMP & PIPING | |
| 112 | □OIL COOLER TYPE: □AIR COOLED | |
| | □WATER COOLED | |
| 113 | □ OIL FILTERS □ SELF CLEANING □DUPLEX | |
| | □ PAPER CARTRIDGE | |
| 114 | □PRELUDE OIL PUMP DRIVEN BY (IF REQUIRED): | |
| 115 | □ PRELUBRICATION □MANUAL | |
| | □ A UTOMATIC | |
| 116 | □ TYPE/GRADE OF LUB. OIL: | |
| 117 | □ OIL CONSUMPTION (LPH): | |
| 118 | □OIL SUMP CAPACITY (LITRES): | |
| 119 | □OIL COOLER TESTING PRESSURE (KG/CM²G): | |
| 120 | □EXPLOSION RELIEF VALVE FOR CRANKCASE | |
| 121 | ■AIR INLET SYSTEM | |
| 122 | ■SUCTION AIR FILTER ■AIR INLET DUCTING / PIPING / MANIFOLDS □□ INLET SILENCER | |
| 123 | EXPANSION BELLOWS (IF REQUIRED) & ALL SUPPORTS / HANGERS | |
| 124 | ■ENGINE EXHAUST SYSTEM | |
| 125 | ■EXHAUST MANIFOLDS / DUCTING / PIPING TERMINATED AT SAFE HEIGHT OUTSIDE ENGINE ENCLOSURE EXHAUST SILENCER (RESIDENTIAL TYPE) | |
| 126 | ■EXPANSION BELLOWS ■ EXHAUST STACK / CHIMNEY ■ ALL SUPPORTS / HANGERS ■ PROTECTION | |
| 127 | □PROVIDED AS ABOVE □ YES □ | |
| | NO | |
| 128 | CONTROLS & INSTRUMENTATION | |
| 129 | ELECTRIC SUPPLY: | |
| 130 | LAMPS: ± V: AC/DC: N : ± HZ: | |
| 131 | ALARM CIRCUIT: ± V: AC/DC: N : ± HZ: | |
| 132 | TRIP CIRCUIT: ± V: AC/DC: N : ± HZ: | |
| 133 | CONTROL CIRCUIT: ± V: AC/DC: N : ± HZ: | |
| 134 | SOLENOID VALVES: ± V: AC/DC: N : ± HZ: | |
| 135 | CONTROL SWITCHES: | |
| 136 | ■ AC POWER ON/OFF SWITCH WITH INDICATION LAMP | |
| 137 | ■ CONTROL POWER ON/OFF SWITCH WITH INDICATION LAMP | |
| 138 | ■ START SWITCH WITH INDICATION YES | |
| 139 | ■ START/STOP PUSH BUTTON FOR AUX. DRIVE MOTOR | |
| 140 | ■ EMERGENCY STOP PUSH BUTTON | |
| 141 | ■ LAMP TEST PUSH BUTTON | |
| 142 | ■ ALARM/TRIP ACKNOWLEDGE /RESET PUSH BOTTON YES | |
| 143 | ■ LUBRICATING OIL HEATER 'ON' INDICATING LAMP (IF PROVIDED) | |
| 144 | ■ MOTOR INTERLOCK AGAINST START WITHOUT PRELUBRICATION | |
| 145 | | |
| 146 | NOTE: VENDOR TO PROVIDE CONTACT/SIGNAL FOR EXECUTION IN DCS. | |

| | | | |
|-----|---|---------------------------------|---------------------------------------|
| 147 | <input type="checkbox"/> MATERIAL | | |
| 148 | CHARGE AIR COOLER | SHELL: | TUBES: |
| 149 | WATER COOLER | SHELL: | TUBES: |
| 150 | AIR COOLER | SHELL: | TUBES: |
| 151 | AIR RECEIVER | | |
| 152 | | | |
| 153 | INSPECTION AND TESTING | | |
| 154 | WITNESS OBSERVE | | |
| 155 | <input type="checkbox"/> STAGE INSPECTION DURING MANUFACTURE | | |
| 156 | <input checked="" type="checkbox"/> FULL LOAD TEST AT ENGINE MANUFACTURER'S SHOP AS PER ISO (PERFORMANCE TEST) | | |
| 157 | <input type="checkbox"/> FUEL CONSUMPTION & GOVERNING TEST AT ENGINE MANUFACTURER'S SHOP AS PER ISO | | |
| 158 | <input checked="" type="checkbox"/> FULL LOAD TEST FOR 4 HOURS OF ENGINE-GENERATOR SET WITH ALL AUXILIARIES & 1HR AT FULL LOAD AT SITE. | | |
| 159 | <input checked="" type="checkbox"/> NO LOAD MECHANICAL RUN TEST AT PACKAGER'S/DRIVEN EQPT. MFR. SHOP | | |
| 160 | <input checked="" type="checkbox"/> VENDOR'S STANDARD MECHANICAL RUN TEST (FOR ALL ENGINE) | | |
| 161 | INSPECTION/TESTING WITNESSED BY: | <input type="checkbox"/> OTHERS | <input checked="" type="checkbox"/> M |
| 162 | /S OWNER OR THEIR REPRESENTATIVE | | |
| 163 | <input type="checkbox"/> WEIGHTS | | |
| 164 | NET WEIGHT OF ENGINE WITH MOUNTED ANCILLARIES (KG): | | |
| 165 | HEAVIEST PART TO BE HANDLED DURING ERECTION AND ITS WEIGHT (KG): | | |
| 166 | HEAVIEST PART TO BE HANDLED DURING NORMAL MAINTENANCE AND ITS WEIGHT (KG): | | |
| 167 | RECOMMENDED CRANE CAPACITY (TONS): | | CRANE |
| 168 | HOOK HEIGHT (M): | | |
| 169 | <input type="checkbox"/> MAINTENANCE DATA | | |
| 170 | EXPECTED PERIOD OF RUNNING BETWEEN TOP OVERHAULS: | | |
| 171 | HOURS | | |
| 172 | EXPECTED PERIOD OF RUNNING BETWEEN MAIN OVERHAULS: | | |
| 173 | HOURS | | |
| 174 | THE TYPE AND GRADE OF LUBRICATING OIL RECOMMENDED: | | |
| 175 | LUBE OIL CONSUMPTION | | (KG/HR)/ |
| 176 | (LITRES/HR) | | |
| 177 | CHANGE OF LUBRICATING OIL AFTER: | | HOURS |
| 178 | <input checked="" type="checkbox"/> SCOPE OF SUPPLY / WORK | | |
| 179 | ENGINE WITH LUBRICATION SYSTEM, GOVERNING SYSTEM, FUEL SYSTEM, COOLING SYSTEM AND STARTING SYSTEM AS SPECIFIED | | |
| 180 | SUCTION AIR FILTER WITH SUCTION PIPING | | |
| 181 | INSTRUMENTS AND CONTROLS AS SPECIFIED | | |
| 182 | INLET AND EXHAUST MANIFOLDS, EXHAUST PIPING WITH FILLINGS, BENDS AND INSULATION | | |
| 183 | EXHAUST SILENCER (RESIDENTIAL, SPARK ARRESTING TYPE) WITH EXPANSION BELLOWS AND COMPLETE WITH EXHAUST PIPING FROM | | |
| 184 | MANIFOLD TO OUTSIDE SHED WITH FITTINGS AND INSULATION. | | |
| 185 | FLYWHEEL WITH BARRING DEVICE | | |
| 186 | GUARDS FOR MOVING PARTS | | |
| 187 | COUPLING FOR ENGINE - DRIVEN EQUIPMENT | | |
| 188 | BASE PLATE FOR ENGINE & DRIVEN EQUIPMENT | | |
| 189 | MANDATORY SPARES AS PER ORDER | | |
| 190 | ERECTION AND COMMISSIONING SPARES | | |
| 191 | TORSIONAL ANALYSIS REPORT ON ENGINE | | |
| 192 | REFER TECHNICAL SPECIFICATION FOR COMPLETE SCOPE OF SUPPLY | | |
| 193 | FOUNDATION/ ANCHOR BOLTS | | |
| 194 | ANTI VIBRATION PADS | | |
| 195 | FIRST FILL OF LUBRICATING OIL AND COOLANT. | | |
| 196 | SEPERATE ACCOUSTIC ENCLOSURE WITH VENTILATION FAN | | |
| 197 | | | |

| | |
|-----|---------|
| 193 | REMARKS |
| 194 | |

DATA SHEET- CNG COMPRESSOR (3 STAGE)

| | | | |
|----|--|-----------------------------|---------------|
| 1 | GENERAL | | |
| 2 | PROJECT: PROCUREMENT OF CNG COMPRESSORS | | |
| 3 | OWNER: | SITE: | |
| 4 | SERVICE: COMPRESSOR FOR CNG MOTHER STATION | | |
| 5 | NO. REQD: | DRIVER: GAS ENGINE | |
| 6 | NOTE: ■ SCOPE OPTION / INFORMATION SPECIFIED BY PURCHASER | □ INFORMATION REQUIRED FROM | |
| 7 | □ MANUFACTURER: | □ MODEL NO.: | |
| 8 | □ PLACE OF MANUFACTURE: | | |
| 9 | ■ NO. OF STAGES: THREE | □ CYLINDER ARRANGEMENT: | |
| 10 | CYLINDER LUBRICATION: □ LUBRICATED □ MINIMUM LUBRICATED □ NON LUBRICATED | | |
| 11 | ■ DRIVER TYPE: GAS ENGINE | | |
| 12 | □ DRIVE: □ V - BELTS (ANTI-STATIC TYPE) □ DIRECT WITH COUPLING | | |
| 13 | □ DIRECTION OF ROTATION (FACING DRIVEN END): □ CLOCKWISE □ COUNTER CLOCKWISE | | |
| 14 | ■ SITE / INSTALLATION DATA | | |
| 15 | SITE DATA: MIN:0 | AMBIENT TEMPERATURE (°C): | MAX: 48 |
| 16 | | RELATIVE HUMIDITY(%): | MAX: 90 |
| 17 | | ALTITUDE(M): 560 | |
| 18 | (KM/HR): 160 (MAX) | EARTHQUAKE ZONE V | WIND VELOCITY |
| 19 | INSTALLATION ■ OUTDOOR ■ MOUNTED ON A COMMON SKID ALONG WITH DRIVER, ENCLOSED INSIDE | | |
| 20 | A ACOUSTIC ENCLOSURE | | |
| 21 | ELECTRICAL AREA HAZARD: | | |
| 22 | Class-I, Division I, Group D as per NEC or Zone I, Group II A/ II B as per IS/ IEC | | |
| 23 | APPLICABLE CODES & STANDARDS | | |
| 24 | COMPRESSOR: API 11P. 2ND EDN./ PISTON / | PIPING: ASME / ANSI B 31.3 | |

| | | | | | |
|----|---|---------|---|---------|---------|
| | TRUNK | | | | |
| 25 | PRESSURE VESSEL: ASME SEC-VIII, DIV-1. | | GAS COOLER: API 11P | | |
| 26 | OIL COOLER: TEMA 'C' | | SOUND: 75 dBA @1m FROM ENCLOSURE | | |
| 27 | <input type="checkbox"/> _____ AUX. ELECTRIC MOTORS: | | | | |
| 28 | CONTROL PANELS & INSTRUMENTATION REFER: | | | | |
| 29 | UTILITIES DATA | | | | |
| 30 | <input type="checkbox"/> Cooling Water (Not Available) | | | | |
| 31 | <input type="checkbox"/> Type: | | <input type="checkbox"/> Supply temperature (°C): | | |
| | <input type="checkbox"/> Max return temperature (°C): | | | | |
| 32 | <input type="checkbox"/> Fouling Factor: | | <input type="checkbox"/> Supply pressure (kg/cm²G): | | |
| | <input type="checkbox"/> Min. return pressure (kg/cm²G): | | | | |
| 33 | <input type="checkbox"/> Design pressure (kg/cm A): | | <input type="checkbox"/> Design temperature (°C): | | |
| 34 | <input type="checkbox"/> _____ Water Flow Rates (m3/hr): | | | | |
| 35 | <input type="checkbox"/> _____ Electricity | | | | |
| 36 | Auxiliary Motors: | | V | | Ph |
| | Hz | | | | |
| 37 | Oil Heaters: | | V | | Ph |
| | Hz | | | | |
| 38 | Solenoid Valves: AC/DC | | V | | Ph |
| | Hz | | | | |
| 39 | Instruments: AC/DC | | V | | Ph |
| | Hz | | | | |
| 40 | Local Panel INDI. / Alarm/ Ann: AC/DC | | V | | Ph |
| | Hz | | | | |
| 41 | Local Panel Trip Circuit: AC/DC | | V | | Ph |
| | Hz | | | | |
| 42 | UPS: KVA, | | V | | Ph |
| | Hz | | | | |
| 43 | <input type="checkbox"/> _____ Total Utility Consumption | | | | |
| 44 | <input type="checkbox"/> _____ Cooling Water (Make UP) (m3/hr) | | | | |
| 45 | <input type="checkbox"/> _____ Power (Auxiliaries) (kW) | | | | |
| 46 | <input type="checkbox"/> _____ Power (Heaters) (kW) | | | | |
| 47 | REMARKS: | | | | |
| 48 | Vendor/ Bidder shall estimate the requirement for all utilities and indicate the same in the tabular form. | | | | |
| 49 | <input type="checkbox"/> _____ CONSTRUCTION/ DESIGN FEATURES | | | | |
| 50 | Normenclature | Unit | Stage#1 | Stage#2 | Stage#3 |
| 51 | Cylinders | | | | |
| 52 | No. of Cylinders | | | | |
| 53 | Single Acting (SA) / Double Acting (DA) | | | | |
| 54 | Cylinder Bore / Stroke | mm/mm | | | |
| 55 | Rotational Speed | RPM | | | |
| 56 | Linear Average Piston Speed | m/sec | | | |
| 57 | Piston Displacement | m3/hr | | | |
| 58 | Cylinder Liner | | | | |
| 59 | Type of Cylinder Liner: Dry/Wet | | | | |
| 60 | Clearance Pockets Yes/No | | | | |
| 61 | Max. Allow. Working Pressure, Cylinder | kg/cm2a | | | |
| 62 | Max/Min. Allow. Working Temperature. Cylinder | °C | | | |

| | | | | | |
|-----|---|--|-------------|-------------|-------------|
| 63 | MAWP Cylinder @ Amb. Temp. | kg/cm2a | | | |
| 64 | Safety Valve Set Pressure, Cylinder | kg/cm2a | | | |
| 65 | G Helium Test Pressure, Cylinder | kg/cm2a | | | |
| 66 | Hydrostatic Test Pressure, Cylinder | kg/cm2a | | | |
| 67 | Cylinder Jacket Coling Type As Reqd. | | | | |
| 68 | Cooling Media, Cylinder Jackets Water / AIR | | | | |
| 69 | Max. Allow. Working Pressure, Cylinder Jacket | kg/cm2a | | | |
| 70 | Hydrostatic Test Pressure, Cylinder Jacket | kg/cm2a | | | |
| 71 | Suction Nozzle Size/ Rating/ Position | | | | |
| 72 | Discharge Nozzle Size/ Rating/ Position | | | | |
| 73 | Suction Valve Number | | | | |
| 74 | Average Gas Velocity | m/sec | | | |
| 75 | Discharge Valve Number | | | | |
| 76 | Average Gas Velocity | m/sec | | | |
| 77 | Type of Suction Valve- | | | | |
| 78 | Type of Discharge Valve- | | | | |
| 79 | Suction Valve Unloaders Yes/ No | | | | |
| 80 | Clearance Pockets Unloaders Type | | | | |
| 81 | Piston Rod Diameter | Mm | | | |
| 82 | Rod Reversal at Crosshead Pin (min.) | Deg. | | | |
| 83 | Piston Rod Runout Operating | | | | |
| 84 | Max. Allow. Rod Load Comp. | Kg | | | |
| 85 | Tension | Kg | | | |
| 86 | Road Load Comp. | kg | | | |
| 87 | (Inertia Alone) Tension | kg | | | |
| 88 | Rod Load Rated Pr. (Gas+Inertia) Comp. | kg | | | |
| 89 | Tension | kg | | | |
| 90 | Rod Load RV Set Comp. | kg | | | |
| 91 | (Gas+Inertia) tension | kg | | | |
| 92 | Distance piece / Packing | | | | |
| 93 | Type of Packing | | | | |
| 94 | Packing Vent Connected to ## | | | | |
| 95 | Packing Cooling | | | | |
| 96 | Type of Distance Piece | | | | |
| 97 | Cyl. Side Compartment Purged | | | | |
| 98 | Frame Side Compartment Pressurized | | | | |
| 99 | Distance Piece purge gas Pressure | mm H ₂ O | | | |
| 100 | Distance Piece purge gas Flow | Nm ³ / hr | | | |
| 101 | Distance Piece Vent to | | Safe height | Safe height | Safe height |
| 102 | Distance Piece Hydrostatic Test Pressure | kg/cm2G | | | |
| 103 | ## Packaging shall be connected to vent header (7.19.4 of API-11) | | | | |
| 104 | Frame | | | | |
| 105 | Frame Explosion proof Relief device | | | | |
| 106 | Flame Arrestor Yes/ No | | | | |
| 107 | Replacable Crosshead Shoes Yes/ No | | | | |
| 108 | Crosshead Guide Integral / Separate | | | | |
| 109 | Maximum Frame Rating | KW | | | |
| 110 | Speed- Maximum/ Minimum | | | | |
| 111 | <input type="checkbox"/> Lubrication System | | | | |
| 112 | Type of lube system | Piping Material | | | |
| 113 | | Carbon Steel | | | |
| 114 | Main Oil Pump Driven By: | Stainless Steel (all piping & valve Trims) | | | |
| 115 | Standby Oil Pump Driven By: | Auxiliary oil tank | | | |
| 116 | Hand Operated Perelube/Priming Pump: | Oil Grade: | | | |
| 117 | Suction Strainer | Lube Oil Composition | | | |

| | | | | |
|-----|---|-------------------------------------|-----------|-----------|
| 118 | Pressure Control Valve | Main pump | Make: | Model: |
| 119 | Level Sight Glass on Crankcase | | Type: | Material: |
| 120 | Type of Oil Cooler: | Standby pump | Make: | Model: |
| 121 | Size of Filter | | Type: | |
| 122 | Oil Heater (if required) | | Material: | |
| 123 | Electric Heater with thermostat (Kw) | | | |
| 124 | Thermostatic Valve | | | |
| 125 | Type of Cylinder Lubrication | Lubricator Equipped With : | | |
| 126 | Lubricator Type : Manzel or Equivalent . | level sight glass | | |
| 127 | Single plunger per feed | oil heater electric with thermostat | | |
| 128 | Divider blocks type. | Electric Heater (Kw) (if required) | | |
| 129 | Lubricator Driven By : | Auxiliary Oil Tank (if required) | | |
| 130 | Compressor Shaft | Oil Grade : | | |
| 131 | Electric Motor KW | Oil System Capacity: (min 150 Hrs.) | | |
| 132 | All tubing and valves in SS | Oil Consmpn. rate | | |
| 133 | Double Ball Check valve on each lubrication point | | | |
| 134 | <input type="checkbox"/> Cooling System | | | |
| 135 | <input type="checkbox"/> Static filled coolant system for | | | |
| 136 | All Stage Cylinders <input type="checkbox"/> 1 Stage Cylinder/s <input type="checkbox"/> 2 Stage Cylinder/s <input type="checkbox"/> 3 Stage Cylinder/s | | | |
| 137 | Including expansion chamber, Vents, Drains, Level Gauge, Pipings, etc. | | | |
| 138 | All Piping prefabricated <input type="checkbox"/> Material | | | |
| 139 | <input type="checkbox"/> Atmospheric thermosyphon cooling system for | | | |
| 140 | All Stage Cylinders <input type="checkbox"/> 1 Stage Cylinder/s <input type="checkbox"/> 2 Stage Cylinder/s <input type="checkbox"/> 3 Stage Cylinder/s | | | |
| 141 | Including expansion tank, Vents, Drains, Coolers, Level & Temp. indicators, Pipings, etc. | | | |
| 142 | All Piping prefabricated <input type="checkbox"/> Material | | | |
| 143 | <input type="checkbox"/> Forced Cooling Water System | | | |
| 144 | All Stage Cylinders <input type="checkbox"/> 1 Stage Cylinder/s <input type="checkbox"/> 2 Stage Cylinder/s <input type="checkbox"/> 3 Stage Cylinder/s | | | |
| 145 | <input type="checkbox"/> Packings <input type="checkbox"/> Oil Coolers <input type="checkbox"/> Gas Coolers | | | |
| 146 | <input type="checkbox"/> Including drains, Vents, flow & temp. Indicators, regulating & Isolation valves, complete piping to provide one | | | |
| 147 | <input type="checkbox"/> Common inlet and one common outlet connections for purchaser's interface terminated by a flanged block valve | | | |
| 148 | <input type="checkbox"/> Block valve. | | | |
| 149 | <input type="checkbox"/> Each isolatable circuit to be provided with thermal relief valve. | | | |
| 150 | All Piping prefabricated <input type="checkbox"/> Material | | | |
| 151 | <input type="checkbox"/> Self contained, forced circulation, closed circuit Cooling Water System (if reqd.) | | | |
| 152 | All Stage Cylinders <input type="checkbox"/> 1 Stage Cylinder/s <input type="checkbox"/> 2 Stage Cylinder/s <input type="checkbox"/> 3 Stage Cylinder/s | | | |
| 153 | <input type="checkbox"/> Packings <input type="checkbox"/> Oil Coolers <input type="checkbox"/> Gas Coolers | | | |
| 154 | <input type="checkbox"/> Including drains, Vents, flow & temp. indicators, Temp. Control Valve, Regulating & Isolation valves, complete piping | | | |
| 155 | <input type="checkbox"/> Main circulating pumps with drivers & suction strainers <input type="checkbox"/> Single Coolers | | | |
| 156 | <input type="checkbox"/> Reservoir (Make Up) <input type="checkbox"/> Heater (if required) | | | |
| 157 | <input type="checkbox"/> Pumps, Reservoirs, Coolers etc. to be mounted on a common skid as to make a separate console. | | | |
| 158 | <input type="checkbox"/> Material of piping: | | | |
| 159 | <input type="checkbox"/> Type of coolant: | | | |
| 160 | <input type="checkbox"/> Jacket cooling | | | |
| 161 | <input type="checkbox"/> Gas Piping System | | | |
| 162 | <input type="checkbox"/> Vendor's Supply Includes: <input type="checkbox"/> Suction Separator | | | |
| 163 | suppression equipment as per 'next' page <input type="checkbox"/> Pulsation | | | |
| 164 | <input type="checkbox"/> Suction Filter: | | | |
| 165 | Strainer on Compressor Suction <input type="checkbox"/> Temporary | | | |
| 166 | <input type="checkbox"/> Type of Strainer: | | | |
| 167 | on compressor <input type="checkbox"/> suction <input type="checkbox"/> nter-stage <input type="checkbox"/> on compressor discharge <input type="checkbox"/> Relief Valves: | | | |
| 168 | <input type="checkbox"/> Check Valve on | | | |

| | | | | |
|-----|--|---|--------------|--------------|
| | Discharge Line (compressor valve design, and suction line) | | | |
| 169 | Coolers Complete With Manual Drain Valve | <input type="checkbox"/> Process Gas | | |
| 170 | CompleteWith Manual/ Automatic Drain Values | <input type="checkbox"/> Separators | | |
| 171 | Piping | <input type="checkbox"/> ProcessGas | | |
| 172 | inlet flange of CNG PACKAGE | <input type="checkbox"/> Supply starts at | | |
| 173 | priority panel with isolation valve | <input type="checkbox"/> Terminates after | | |
| 174 | <input type="checkbox"/> Materials: | | | |
| 175 | Piping | <input type="checkbox"/> By-Pass Line | | |
| 176 | discharge and 1 st stg. Suction | <input type="checkbox"/> Between 3rd stg. | | |
| 177 | | <input type="checkbox"/> Gas cooler | | |
| 178 | Piping Between Packing Vents, PSV Relief terminating to Vent Recovery System | <input type="checkbox"/> Interconnecting | | |
| 179 | piping between distance piece terminating to Vent Recovery System upto package B/L | <input type="checkbox"/> Interconnecting | | |
| 180 | piping between Drains terminating as a single point | <input type="checkbox"/> Interconnecting | | |
| 181 | piping between Instrument Air terminating | <input type="checkbox"/> Interconnecting | | |
| 182 | Suppression Equipment | <input type="checkbox"/> Pulsation | | |
| 183 | Stage# | Stage#1 | Stage#2 | Stage#3 |
| 184 | Suction | | | |
| 185 | Pulse Equipment Required (Yes/No) | Yes | Yes | Yes |
| 186 | Inlet Pressure | | | |
| 187 | Residual Peak to Peak Pulsation% | As per API 618, Cl 3.9.2.7 | | |
| 188 | Inlet Nozzle Size/ Rating/ Position | | | |
| 189 | Discharge Nozzle Size/ Rating/ Position | | | |
| 190 | Design Pressure Kg/cm2a | | | |
| 191 | Design Temperature °C | | | |
| 192 | Volume | | | |
| 193 | Material : vessels | SA 516 Gr.60 | SA 516 Gr.60 | SA 516 Gr.60 |
| 194 | Internals | | | |
| 195 | Corrosion Allowance mm | 3 | 3 | 3 |
| 196 | Hydrostatic test Pressurekg/cm²,g | 1.3XMAWP | 1.3XMAWP | 1.3XMAWP |
| 197 | Discharge | | | |
| 198 | Pulse Equipment Required (Yes/No) | Yes | Yes | Yes |
| 199 | Inlet Pressure | | | |
| 200 | Residual Peak to Peak Pulsation% | As per API 618, Cl 3.9.2.7 | | |
| 201 | Inlet Nozzle Size/ Rating/ Position | | | |
| 202 | Discharge Nozzle Size/ Rating/ Position | | | |
| 203 | Design Pressure Kg/cm2a | | | |
| 204 | Design Temperature °C | | | |
| 205 | Volume | | | |
| 206 | Material : vessels | SA 516 Gr.60 | SA 516 Gr.60 | SA 516 Gr.60 |
| 207 | Internals | | | |
| 208 | Corrosion Allowance mm | 3 | 3 | 3 |
| 209 | Hydrostatic test Pressurekg/cm²,g | 1.3XMAWP | 1.3XMAWP | 1.3XMAWP |

| | | | | | |
|-----|--|------|--|---|----------------------------|
| 210 | Pulsation Suppressors are complete and installed on the Skid with supports & anchor bolts | | | | |
| 211 | Design Code : . ASME SECT. VIII DIV. 1 | | | | |
| 212 | Analog Piping Study / Accoustic Simulation, As per Approach 3, Cl. 3.9.2.6 API618, 4th edition | | | | |
| 213 | Upstream / downstream | | Inter-stage | | |
| 214 | Performed By: | | <input type="checkbox"/> Vendor | <input type="checkbox"/> Any other agency having similar experience | |
| 215 | Piping Mechanical Analysis | | | | |
| 216 | Performed By: | | <input type="checkbox"/> Vendor | <input type="checkbox"/> Any other agency having similar experience | |
| 217 | <input type="checkbox"/> Automatic Drain Valves For Each Stage suction KOD | | | | |
| 218 | <input type="checkbox"/> Capacity Control | | | | |
| 219 | <input type="checkbox"/> Start / Stop, based on discharge receiver pressure: Fully Automatic | | | | |
| 220 | Unloading for Start up/Shut down :Automatic Through Valve | | <input type="checkbox"/> Valve Unloader | <input type="checkbox"/> Recycle | |
| 221 | <input type="checkbox"/> Interlock against loaded start | | | | |
| 222 | <input type="checkbox"/> Automatic Control based on | | | | |
| 223 | <input type="checkbox"/> Suction Pressure Signal | | <input type="checkbox"/> Discharge Pressure | <input type="checkbox"/> FlowManual | |
| 224 | <input type="checkbox"/> Type of Actuator fluid to unload | | <input type="checkbox"/> Actuation fluid to load | <input type="checkbox"/> Actuation | |
| 225 | <input type="checkbox"/> On Power / Actuation fluid failure : Compressor to | | <input type="checkbox"/> Load | <input type="checkbox"/> Unload | |
| 226 | <input type="checkbox"/> At 0 % capacity through Valve Unloader, Compressor shall run | | | | |
| 227 | <input type="checkbox"/> Continuously | | <input type="checkbox"/> Maximum Hrs. | | |
| 228 | <input type="checkbox"/> At 25 % capacity through Valve Unloader, Compressor shall run | | | | |
| 229 | <input type="checkbox"/> Continuously | | <input type="checkbox"/> Maximum Hrs. | | |
| 230 | <input type="checkbox"/> At All other capacity, Compressor shall run continuously | | | | |
| 231 | Vendor's scope Shall Include: | | | | |
| 232 | <input type="checkbox"/> Pilot Devices (pressure / temperature / Flow devices ,Controllers & Switches) | | | | |
| 233 | <input type="checkbox"/> Intermediate Devices (Solenoid Valves Pneumatic Relay / Valves) | | | | |
| 234 | <input type="checkbox"/> Actuators | | | | |
| 235 | <input type="checkbox"/> Recycle valves | | | | |
| 236 | <input type="checkbox"/> Control Logic and System for Complete Capacity Control | | | | |
| 237 | <input type="checkbox"/> Inter Connecting Tubing, Piping, Cabling & Wiring | | | | |
| 238 | <input type="checkbox"/> Protection against extended unloaded operation (Trip) | | | | |
| 239 | <input type="checkbox"/> valve unloaders are required as such Compressor shall start / stop at specified receiver pressures. | | | | |
| 240 | <input type="checkbox"/> Purchaser's Interface | | | | |
| 241 | Type of Interface (Single Point) | Size | Rating | Face | Position/Location |
| 242 | Main Gas Piping Inlet | | | | |
| 243 | Main Gas Piping Outlet | | | | |
| 244 | Relief Valves discharge | | | | |
| 245 | Distance Piece Vent | | | | |
| 246 | Packing Vent | | | | |
| 247 | C.W. Inlet | | | | |
| 248 | C.W. Outlet | | | | |
| 249 | N2 Inlet Supply | | | | |
| 250 | N2 Vent (Safe location) | | | | |
| 251 | Drains | | | | |
| 252 | MATERIALS | | | | |
| 253 | Cylinder Materials | | | | |
| 254 | Stage# | | Stage#1 | Stage#2 | Stage#3 |
| 255 | Cylinder | | C.S./ C.I. | D.I / F.S | F.S. |
| 256 | Liner | | | | |
| 257 | Piston | | | | |
| 258 | Piston Rings | | PTFE | PTFE | PTFE |
| 259 | Rider Rings | | PTFE | PTFE | PTFE |
| 260 | Piston Rod | | Forged steel/ AISI 4142 | Forged steel/ AISI 4142 | Forged steel/ AISI 4142 |
| 261 | Packings Rings | | | | |
| 262 | Valve Seats | | | | |
| 263 | Valve Stops | | | | |

| | | | | |
|-----|---|--------------------------|--|--------------------------------------|
| 264 | Valve Rings / Plates | SS / SS | SS / SS | SS / SS |
| 265 | Valve Springs | SS | SS | SS |
| 266 | Cylinder Head | | | |
| 267 | Motion Work Materials : | | | |
| 268 | | Material /ASTM Grades | | |
| 269 | Top Cover | | <input type="checkbox"/> Cast | <input type="checkbox"/> Fabricated |
| 270 | Crankcase | | <input type="checkbox"/> Cast | <input type="checkbox"/> Fabricated |
| 271 | Crankshaft | | <input type="checkbox"/> Die Forged <input type="checkbox"/> Cast | <input type="checkbox"/> Open Forged |
| 272 | Connecting Rods | | <input type="checkbox"/> Die Forged <input type="checkbox"/> Cast | <input type="checkbox"/> Open Forged |
| 273 | Cross heads | | <input type="checkbox"/> Cast | <input type="checkbox"/> Fabricated |
| 274 | Cross heads | | | |
| 275 | Cross Head Guide | | <input type="checkbox"/> Cast | <input type="checkbox"/> Fabricated |
| 276 | Main Bearings Type | | <input type="checkbox"/> Split Precision | <input type="checkbox"/> Bush |
| 277 | Cross Head Pin Bearings Type | | <input type="checkbox"/> Split Precision | <input type="checkbox"/> Bush |
| 278 | Connecting Rod Bearings Type | | <input type="checkbox"/> Split Precision | <input type="checkbox"/> Bush |
| 279 | Cross Head Pin Type | | <input type="checkbox"/> Split Precision | <input type="checkbox"/> Bush |
| 280 | Note: | | | |
| 281 | Each package shall be provided with two number drain lines, one from Suction KOD and second drain as common drain line from intermediate and discharge KOD routed to drain vessels through gas recovery vessels | | | |
| 282 | <input type="checkbox"/> CONTROLS & INSTRUMENTATION | | | |
| 283 | <input type="checkbox"/> AC Power On/Off SwitchWith Indication Lamp | | | |
| 284 | <input type="checkbox"/> Control Power On/Off SwitchWith Indication Lamp YES | | | |
| 285 | <input type="checkbox"/> Selector Switch A/M Station For L/O Pump Motor | | | |
| 286 | <input type="checkbox"/> Selector Switch A/M Station For CW Pump Motor | | | |
| 287 | <input type="checkbox"/> Emergency Stop Push Button | | | |
| 288 | <input type="checkbox"/> Start Push Button For Air Compressor Motor | | | |
| 289 | <input type="checkbox"/> Emergency Stop Push Button for MainMotor | | | |
| 290 | <input type="checkbox"/> Lamp Test Push Button | | | |
| 291 | <input type="checkbox"/> Alarm/Trip Acknowledge /Reset Push Botton | | | |
| 292 | <input type="checkbox"/> Frame Oil Heater ON (Indicating lamp) | | | |
| 293 | <input type="checkbox"/> Lubricator Oil Heater ON (Indicating lamp) | | | |
| 294 | <input type="checkbox"/> Engine Interlock Against Loaded Start | | | |
| 295 | <input type="checkbox"/> Engine Interlock Against Start Without Prelubrication | | | |
| 296 | <input type="checkbox"/> Low Lube oil pressure | | | |
| 297 | Note: | | | |
| 298 | Minimum required indications, alarms & trips are shown herewith. Bidder shall provide any additional instrumentation for safe operation. | | | |
| 299 | Compressor shall start stop at pre determined receiver pressure as specified. Bidder shall include in his Scope includes the necessary hardware for the same. | | | |
| 300 | All inter-stage / discharge and suction scrubber shall be provided with high / low level operated auto drain solenoid valves | | | |
| 301 | INSPECTION AND TESTS | | | |
| 302 | Material Composition and Physical Properties Certificates Required For: | | | |
| 303 | ■ Cylinder and Liner | ■ Piston | | |
| 304 | ■ Crankshaft | ■ Connecting Rod | | |
| 305 | ■ Pressure Vessel | ■ Heat Exchanger | | |
| 306 | ■ X-Ray Examination for components: Pressure Vessels (certificates to be furnished). | | | |
| 307 | ■ Ultrasonic Testing for components: Piston Rod, Crankshaft, Big End Bolts, Main Brg Studs. | | | |
| 308 | ■ Magnaflux Testing for components: Crankshaft, Piston Rod, Connecting Rod. | | | |
| 309 | ■ Dye Penetrant Testing for : Cylinder, Liner, Piston. | | | |
| 310 | | Required | Observed | Witnessed |
| 311 | ■ Shop inspection by Purchaser during manufacture | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 312 | ■ Cylinder Hydrostatic | ■ | <input type="checkbox"/> | ■ |
| 313 | ■ Cylinder Pressure Test By Helium | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 314 | ■ HydrostaticTest of Pressure Vessels | ■ | <input type="checkbox"/> | ■ |
| 315 | ■ Hydrostatic Test of Distance Piece. | ■ | ■ | <input type="checkbox"/> |

| | | | | |
|-----|---|--|--------------------------|--------------------------|
| 316 | ■ Leak Proof Test of Crank case for 24 Hrs | | <input type="checkbox"/> | ■ |
| 317 | ■ Barring over to check clearance / Rod runout | ■ | <input type="checkbox"/> | ■ |
| 318 | ■ Mech. Running Test with shop Driver (4 Hours min.) | ■ | <input type="checkbox"/> | ■ |
| 319 | ■ Performance Test at Works as per IS 5456/PTC9/BS 726 (*). | ■ | <input type="checkbox"/> | ■ |
| 320 | ■ Partial Stripping and internal inspection | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 321 | ■ Functional/Continuity Tests - Control Panel. | ■ | <input type="checkbox"/> | <input type="checkbox"/> |
| 322 | ■ Field Trial Run 72 Hrs. under Vendor's Supersion (Package) | ■ | <input type="checkbox"/> | ■ |
| 323 | ■ Valve Leak Test | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 324 | ■ Lube Oil Console Run test | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 325 | ■ Closed Circuit C.W. System test | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 326 | *: During package performance test | | | |
| 327 | Test Certificates Required For: | | | |
| 328 | ■ AuxiliaryMotor & Pumps | ■ Safety Relief Valves | | |
| 329 | ■ Safety Switches | ■Solenoid Valves | | |
| 330 | <input type="checkbox"/> WEIGHTS | | | |
| 331 | Overall supply (excluding driver and gear box, if any) Kg. approx. | | | |
| 332 | Maximum erection weight Kg. approx. | | | |
| 333 | Maximum maintenance weight Kg. approx. | | | |
| 334 | Gear Box Kg. approx. | | | |
| 335 | Driver Kg. approx. | | | |
| 336 | SCOPE OF SUPPLY | | | |
| 337 | ■ Compressor Assembly complete with frame, cylinders, cross head etc. | | | |
| 338 | ■ Motion work lubrication system | | | |
| 339 | ■ Cylinder and packing lubrication system | | | |
| 340 | ■ Cooling system | | | |
| 341 | ■ ProcessGas system | | | |
| 342 | ■ Local instrumentation | | | |
| 343 | ■ Local Gauge Board | | | |
| | ■ Local Control Panel | ■ PLC Panel | | |
| 344 | ■ Man Machine Interface located in Control Room | | | |
| 345 | ■ Main driver (Gas Engine) | | | |
| | ■Barring Device : | <input type="checkbox"/> Manual | | |
| 346 | <input type="checkbox"/> Electric . Pneumatic | | | |
| 347 | ■ Flywheel | | | |
| 348 | <input type="checkbox"/> V-Belts with Pulley | | | |
| 349 | <input type="checkbox"/> Couplings | | | |
| 350 | ■ Driver Compressor | | | |
| 351 | ■ Guards for moving parts ■ | | | |
| 352 | ■ Baseplate Common for Compressor and Driver | | | |
| 353 | ■ Fabricated Steel skid Common for compressor, driver and accessories | | | |
| 354 | ■Ladders and platforms | | | |
| 355 | ■ Special Tools - One Set for each package | | | |
| 356 | ■ Anchor Bolts for Complete Package | | | |
| | ■Piping supports and brackets : | ■ prefabricated for piping in Vendor's | | |
| 357 | Scope | | | |
| 358 | ■ Supports For Cylinders & Auxiliaries, Prefabricated & fitted in the Package | | | |
| 359 | ■ Commissioning Spares, erection and commissioning spares | | | |
| 360 | ■ Mandatory Spares as specified in the Job Specification | | | |
| 361 | ■Train Torsion Analysis Study and Report | | | |
| 362 | ■Acoustic Simulation Study & Report | | | |
| 363 | ■ Vendor Data as specified | | | |
| 364 | NOTE : Refer checklist for scope of supply | | | |