

**TENDER NO: GGPL/KKD/C&P/PR 2044/2019-20/11**

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A Joint Venture of Andhra Pradesh Gas Distribution Corporation Ltd. and Hindustan Petroleum Corporation Ltd

**LIMITED DOMESTIC COMPETITIVE BIDDING**

**BID DOCUMENT**

**FOR**

**Supply of CNG Electric Motor driven Integrated  
Compressor Package for GGPL**

**(TENDER NO: GGPL/KKD/C&P/PR 2044/2019-20/11)**

**BID DOCUMENT FEE : NIL**

**DUE DATE & TIME FOR  
BID SUBMISSION : 18.12.2019 1400 Hrs. (IST)**

**DUE DATE & TIME FOR BID OPENING: 18.12.2019 1500 Hrs. (IST)**

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E-mail- [rameshna@gail.co.in/jayasree.d@apgdc.com](mailto:rameshna@gail.co.in/jayasree.d@apgdc.com)

Website: [www.godavarigas.in](http://www.godavarigas.in)

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**SECTION-I**  
**INVITATION FOR BID**  
**(IFB)**

**TENDER NO: GGPL/KKD/C&P/PR 2044/2019-20/11**

**SECTION-I**

**"INVITATION FOR BID (IFB)"**

**Ref No: GGPL/KKD/C&P/PR 2044/2019-20/11**

**Date: 02.12.2019**

**To,**

***PROSPECTIVE BIDDERS***

**SUB: TENDER DOCUMENT FOR SUPPLY OF CNG ELECTRIC MOTOR DRIVEN INTEGRATED COMPRESSOR PACKAGE FOR GGPL**

**Dear Sir/Madam,**

1.0 Godavari Gas Private Limited hereinafter called GGPL invites bids from eligible bidders for the subject Procurement, in complete accordance with the following details and enclosed tender documents.

2.0 The brief details of the tender are as under:

	NAME OF PROCUREMENT / BRIEF SCOPE OF SUPPLY	SUPPLY OF CNG ELECTRIC MOTOR DRIVEN INTEGRATED COMPRESSOR PACKAGE FOR GGPL
A	TENDER NO. & DATE	<b>GGPL/KKD/C&amp;P/PR 2044/2019- 20/11 Date: 02.12.2019</b>
B	TYPE OF BIDDING SYSTEM	TWO BID SYSTEM
C	TYPE OF TENDER	LIMITED DOMESTIC TENDER
D	DELIVERY SCHEDULE	6 months from date of FOA AS per clause no. 4 of SCC
E	BID SECURITY / EARNEST MONEY DEPOSIT (EMD) (Refer clause no.16 of ITB)	APPLICABLE Amount: Rs. 4,86,000 /-
F	AVAILABILITY OF TENDER DOCUMENT ON WEBSITE(S)	<b>From 02.12.2019 (14.00 Hrs, IST) to 18.12.2019 (14.00 Hrs, IST) on following websites:</b>  (i) GGPLs Tender Website <a href="http://www.godavarigas.in">http://www.godavarigas.in</a>
G	PRE-BID MEETING	<b>09.12.2019 (15.00 Hrs, IST)</b>
H	UN-PRICED BID OPENING	<b>Date &amp; time: 18.12.2019 /15:00 Hrs</b>

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I	CONTACT DETAILS	Name : Ramesh Naik Adavath, Designation: Chief Manager (C&P) Phone No. & Extn : 76610129777 e-mail :rameshna@gail.co.in
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**In case of the days specified above happens to be a holiday in GGPL, the next working day shall be implied.**

3.0 Bids must be submitted strictly in accordance with Clause No. 11 of ITB depending upon Type of Tender as mentioned at Clause no. 2.0 (D) of IFB. The IFB is an integral and inseparable part of the bidding document.

~~4.0 In case of e-tendering, the following documents in addition to uploading in the bid on GAIL's e-tendering website shall also be submitted in Original (in physical form) within 7 (seven) days from the bid due date provided the scanned copies of the same have been uploaded in e-tender by the bidder along with e-bid within the due date and time to the address mentioned in Bid Data Sheet(BDS):-~~

- ~~i) Demand Draft towards Tender fee (if applicable)~~
- ~~ii) EMD/Bid Security (if applicable)~~
- ~~iii) Power of Attorney~~
- ~~iv) Integrity Pact (if applicable)~~

5.0 In case of Manual Bids, bids complete in all respect should reach at the address specified in Bid Data Sheet on or before the due date & time. Bids received after the due date and time is liable to be rejected.

6.0 Bidder(s) are advised to quote strictly as per terms and conditions of the tender documents and not to stipulate any deviations/exceptions.

7.0 Any bidder, who meets the Bid Evaluation Criteria (BEC) and wishes to quote against this Tender Document, may download the complete Tender Document along with its amendment(s) if any from websites as mentioned at 2.0 (G) of IFB and submit their Bid complete in all respect as per terms & conditions of Tender Document on or before the Due Date & Time of Bid Submission.

8.0 Bid(s) received from bidders to whom tender/information regarding this Tender Document has been issued as well as offers received from the bidder(s) by downloading Tender Document from above mentioned website(s) shall be taken into consideration for evaluation & award provided that the Bidder is found responsive subject to provisions contained in Clause No. 2 of ITB.

The Tender Document calls for offers on single point "Sole Bidder" responsibility basis (except where JV/Consortium bid is allowed pursuant to clause no. 3.0 of ITB) and in total compliance of Scope of Supply as specified in Tender Document.

9.0 Clarification(s)/Corrigendum(s) if any shall also be available on above referred websites. Any revision, clarification, addendum, corrigendum, time extension, etc. to the this Tender Document will be hosted on the above mentioned website(s) only. Bidders are requested to visit the website regularly to keep themselves updated.

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- 10.0 All the bidders including those who are not willing to submit their bid are required to submit F-11 (Acknowledgement cum Consent letter) duly filled within 7 days from receipt of tender information.
- ~~11.0 SAP generated Request for Quotation (RFQ), if any shall also form an integral part of the Tender Document.~~
- 12.0 GGPL reserves the right to reject any or all the bids received at its discretion without assigning any reason whatsoever.

This is not an Order.

For & on behalf of  
Godavari Gas Private Limited



(Authorized Signatory)

Name : A RAMESH NAIK

Designation : Chief Manager (C&P).

E-mail ID : [rameshna@gail.co.in](mailto:rameshna@gail.co.in)

Contact No. : 7661029777

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**DO NOT OPEN - THIS IS A QUOTATION**

***Bid Document No.*** : .....

***Description*** : .....

***Due Date & Time*** : .....

***From:***

***To:***

.....	.....
.....	.....

***(To be pasted on the envelope containing Bid (in case of Manual Tendering)/  
Physical documents (in case of e-Tendering) )***

**SECTION-II**  
**BID EVALUATION**  
**CRITERIA &**  
**EVALUATION**  
**METHODOLOGY**

## **1.0 TECHNICAL CRITERIA:**

Bidders Qualification Criteria shall be as follows:

- i) The bidder should be a manufacturer / packager and supplier of Integrated CNG compressor and Dispenser package.
- ii) The bidder must have the single point responsibility for manufacturing / packaging, supplying, installing, commissioning and operation and maintenance of Integrated CNG compressor and Dispenser package.
- iii) The bidder should have experience of having engineered, manufactured / packaged, tested, supplied at least one integrated compressor package in India from the proposed facility of manufacturing / packaging in the last Seven years reckoned from the final bid opening date.
- iv) In case compressor manufacturer authorizes his Indian packager and supplier / dealer / subsidiary to bid, in such case, technical BEC of compressor manufacturer towards clause no. (i) and (iii) above shall be applicable.

### Note:

- a. In case the bidder is a sole Authorized Distributor/ Authorized Dealer, the bidder has to submit back-up authority letter from the concerned manufacturers who authorize them to market their product, provided further such an authority letter is valid at the time of bidding. Offers without back-up authority from manufacturer will not be considered. Required warranty cover of the manufacturers for the product will be provided by such Distributor/Dealer. Further, one manufacturer can quote only through one sole authorized Distributor/Dealer and a sole authorized distributor/Dealer shall offer product of only one manufacturer.
- b. In case the bidder is executing a rate contract which is still running and the quantity executed till one day prior to the due date of submission is equal to or more than the minimum prescribed quantity as mentioned in the BEC, such experience will also be taken into consideration provided that the bidder has submitted satisfactory supply execution certificate/Inspection certificate / Release Notes/ Invoices.
- c. A Job completed by a bidder for its own plant/projects cannot be considered as experience for the purpose of meeting BEC of the tender. However, jobs completed for Subsidiary/Fellow subsidiary / Holding company will be considered as experience for the purpose of meeting BEC subject to submission of tax paid invoice (s) duly certified by Statutory Auditor of the bidder towards payments of statutory tax in support of the job completed for Subsidiary/Fellow subsidiary/ Holding company. Such bidders to submit these documents in addition to the documents specified to meet BEC

## **2.0 FINANCIAL CRITERIA:**

- a) The minimum annual turnover achieved by the bidder as per their audited financial results in any one of the preceding three financial years shall be Rs. 65 Lakhs.
- b) Net worth of the bidder should be POSITIVE as per the last audited financial year.

- c) The minimum working capital of the bidder as per the last audited financial year shall be Rs.13 Lakhs.

If the working capital of the bidder is less than value required above, then the bidder should supplement this with a letter from their bank, having net worth not less than Rs.100 Cr, confirming the availability of line of credit for the value as indicated above.

**Annual Turnover-** In case the tenders having the bid closing date up to 30th September of the relevant financial year, and audited financial results of the immediate three preceding financial years are not available, the bidder has an option to submit the audited financial results of the three years immediately prior to that. Wherever the closing date of the bid is after 30<sup>th</sup> Sept. of the relevant financial year, bidder has to compulsorily submit the audited financial results for the immediate three preceding financial years.

**Net worth and Working Capital:** In case the tenders having the bid closing date up to 30th September of the relevant financial year, and audited financial results of the immediate preceding financial year is not available, in such case the audited financial results of the year immediately prior to that year will be considered as last financial year for Net worth/ Working Capital calculation. Wherever the closing date of the bid is after 30th Sept. of the relevant financial year, bidder has to compulsorily submit the audited financial results for the immediate preceding financial years.

### **3.0 DOCUMENTS TO BE SUBMITTED FOR COMPLIANCE TO BEC:**

Along with techno-commercial bid, the bidder must submit the proof of experience by providing the following:

1. In support of Clause No. 1.0 (i):  
If bidder is manufacturer, then Copy of BIS certificate/ISO certificate/PESO approval shall be submitted.

In case the bidder is Packager, Authorization letter from the manufacturer authorising Indian supplier shall be submitted.

2. In support of Clause No. 1.0 (ii):

Further to above, confirmation by the bidder on letter head that the bidder shall have single point responsibility for supplying, installation commissioning, operation and maintenance of Integrated Compressor Package.

3. In support of Clause No. 1.0 (iii):
  - (a) Copies of Purchase Order and
  - (b) Inspection note/ Release note

**4.0 AUTHENTICATION OF DOCUMENTS SUBMITTED IN SUPPORT OF BID EVALUATION CRITERIA (BEC):**

The documents required to be submitted by the bidder to substantiate their qualification under Bid Evaluation Criteria shall be as follows:

- (a) For authentication of document(s) submitted in support of above mentioned Technical Criteria of Bid Evaluation Criteria (BEC):

All the documents mentioned above towards substantiating Bid Evaluation Criteria – Technical, must be duly certified/attested by Chartered Engineer and Notary Public with legible stamp failing which the bid shall be liable for rejection.

- (b) For authentication of document(s) submitted in support of Financial Criteria of Bid Evaluation Criteria (BEC):

The bidder shall submit “Details of Financial Capability of Bidder” in prescribed format as enclosed duly signed and stamped by Chartered accountant.

Further, copy of audited annual financial statements submitted in bid shall be duly certified /attested by notary public with legible stamp.

**5.0 EVALUATION AND COMPARISON OF BIDS:**

- a. Evaluation shall be done on total cost (FOT site basis) including comprehensive Operation & Maintenance for 3 years incl. Guarantee period of 1 year.
  - b. Bidders are required to quote for complete scope of supply. If any bidder quotes for part scope/quantity shall be considered incomplete and shall not be evaluated, stands rejected.
  - c. SOR quantities are non split-able.
  - d. In a tie situation where two or more bidders become L1, the bidder whose turnover is more for the immediate preceding audited financial year will be decided as L1.
- e. Public Procurement Policy for Micro and Small Enterprises Clause [pursuant to relevant Clause of 40.0 of ITB

**SECTION-III**  
**INSTRUCTION TO**  
**BIDDERS**

**(TO BE READ IN CONJUNCTION WITH**  
**BIDDING DATA SHEET (BDS)**

**SECTION-III**

**INSTRUCTION TO BIDDERS**

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**INSTRUCTIONS TO BIDDERS [ITB]**  
**(TO BE READ IN CONJUNCTION WITH BIDDING DATA SHEET (BDS))**

**[A] – GENERAL**

**1 SCOPE OF BID**

- 1.1 The Employer as defined in the "General Conditions of Contract [GCC]", wishes to receive Bids as described in the Bidding Document/Tender document issued by Employer. Employer/Owner/GGPL occurring herein under shall be considered synonymous.
- 1.2 SCOPE OF BID: The scope of Supply shall be as defined in the Bidding documents.
- 1.3 The successful bidder will be expected to complete the scope of Bid within the period stated in Special Conditions of Contract.
- 1.4 Throughout the Bidding Documents, the terms 'Bid', 'Tender' & 'Offer' and their derivatives [Bidder/Tenderer, Bid/Tender/Offer etc.] are synonymous. Further, 'Day' means 'Calendar Day' and 'Singular' also means 'Plural'.

**2 ELIGIBLE BIDDERS**

- 2.1 The Bidder shall not be under a declaration of ineligibility by Employer for Corrupt/ Fraudulent/ Collusive/ Coercive practices, as defined in "Instructions to Bidders [ITB], Clause No. 39" (Action in case Corrupt/ Fraudulent/ Collusive/ Coercive Practices).
- 2.2 The Bidder is not put on 'Holiday' by GGPL or GAIL or Public Sector Project Management Consultant (like EIL, MECON only due to "poor performance" or "corrupt and fraudulent practices") or banned/blacklisted by Government department/ Public Sector on due date of submission of bid. Further, neither bidder nor their allied agency/(ies) (as defined in the Procedure for Action in case of Corrupt/ Fraudulent/ Collusive/ Coercive Practices) are on banning list of GGPL or GAIL or the Ministry of Petroleum and Natural Gas.

If the bidding documents were issued inadvertently/ downloaded from website, offers submitted by such bidders shall not be considered for opening/ evaluation/Award and will be returned immediately to such bidders.

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

It shall be the sole responsibility of the bidder to inform GGPL in case the bidder is put on 'Holiday' by GAIL or Public Sector Project Management Consultant (like EIL, Mecon. only due to "poor performance" or "corrupt and fraudulent practices") or banned/blacklisted by Government department/ Public Sector on due date of submission of bid 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 clause 39 of ITB.

- 2.3 The Bidder should not be under any liquidation court receivership or similar proceedings on due date of submission of bid.

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

It shall be the sole responsibility of the bidder to inform GGPL in case the bidder is under any liquidation court receivership or similar proceedings on due date of submission of bid 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 clause no.39 of ITB.

- 2.4 Bidder shall not be affiliated with a firm or entity:

- (i) that has provided consulting services related to the work to the Employer during the preparatory stages of the work or of the project of which the works/services forms a part of or
- (ii) that has been hired (proposed to be hired) by the Employer as an Engineer/ Consultant for the contract.

- 2.5 Neither the firm/entity appointed as the Project Management Consultant (PMC) for a contract nor its affiliates/ JV'S/ Subsidiaries shall be allowed to participate in the tendering process unless it is the sole Licensor/Licensor nominated agent/ vendor.

- 2.6 Pursuant to qualification criteria set forth in the bidding document, the Bidder shall furnish all necessary supporting documentary evidence to establish Bidder's claim of meeting qualification criteria.

- 2.7 Power of Attorney:

In case of a Single Bidder, Power of Attorney issued by the Board of Directors/ CEO / MD / Company Secretary of the Bidder/ all partners in case of Partnership firm/Proprietor in favour of the authorised employee(s) of the Bidder, in respect of the particular tender for signing the Bid and all

subsequent communications, agreements, documents etc. pertaining to the tender and to act and take any and all decision on behalf of the Bidder, is to be submitted.

In case of a Consortium/JV, Power of Attorney issued by Board of Directors/ CEO / MD / Company Secretary of the Consortium Leader as well as Consortium Member(s) of the Consortium/ partners of JV, in favour of the authorised employee(s) of the Consortium Leader/Lead member of JV, for signing the documents on behalf of the Bidder, in respect of this particular tender, to sign the Bid and all subsequent communications, agreements, documents etc. pertaining to the tender and act and take any and all decision on behalf of the Consortium/JV, are to be submitted.

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.

**3     BIDS FROM "JOINT VENTURE"/"CONSORTIUM" (FOR APPLICABILITY OF THIS CLAUSE REFER BIDDING DATA SHEET (BDS)) : Not applicable**

- 3.1 Bids from consortium/ JV of two or more members (maximum three including leader) are acceptable provided that they fulfill the qualification criteria and requirements stated in the Bidding Documents. Participating Consortium/ JV shall submit the Agreement as per the format F-17 clearly defining the scope and responsibility of each member. Members of consortium/ JV shall assume responsibility jointly & severally. The EMD shall be submitted by the Bidder (Consortium/ JV).
- 3.2 The Consortium/ JV Agreement must clearly define the leader/ lead partner, who shall be responsible for timely completion of work/ services and shall receive/ send instructions for and on behalf of the consortium during the period the bid is under evaluation as well as during the execution of contract.
- 3.3 All the members shall authorize the representative from the lead partner by submitting a Power of attorney (on a non judicial stamp paper of appropriate value) signed by legally authorized signatories of all the member(s). Such authorization must be accompanied with the bid. The authorized signatory shall sign all the documents relating to the tender/ contract. However, in case of award, payment shall be made to the consortium.
- 3.4 A consortium/JV once established at the time of submitting the Bid shall not be allowed to be altered with respect to constituting members of the JV/ Consortium or their respective roles/ scope of work, except if and when required in writing by owner. If during the evaluation of bids, a consortium/JV proposes any alteration/ changes in the orientation of consortium/JV or replacements or inclusions or exclusions of any partner(s)/ member(s) which

had originally submitted the bid, bid from such a consortium/JV shall be liable for rejection.

- 3.5 Any member of the consortium/ JV shall not be eligible either in an individual capacity or be a part of any other consortium/JV to participate in this tender. Further, no member of the consortium/ JV shall be on 'Holiday' by GGPL/ GAIL or Public Sector Project Management Consultant (like EIL, Mecon only due to "poor performance" or "corrupt and fraudulent practices") or banned/blacklisted by Government department/ Public Sector on due date of submission of bid. Offer submitted by such consortium/ JV shall not be considered for opening/ evaluation/Award.

#### **4 ONE BID PER BIDDER**

- 4.1 A Firm/Bidder shall submit only 'one [01] Bid' in the same Bidding Process. A Bidder who submits or participates in more than 'one [01] Bid' will cause all the proposals in which the Bidder has participated to be disqualified.
- 4.2 Alternative Bids shall not be considered.

#### **5 COST OF BIDDING & TENDER FEE**

##### **5.1 COST OF BIDDING**

The Bidder shall bear all costs associated with the preparation and submission of the Bid including but not limited to Bank charges all courier charges including taxes & duties etc. incurred thereof. Further, GGPL will in no case, be responsible or liable for these costs, regardless of the outcome of the bidding process.

##### **5.2 TENDER FEE: NOT APPLICABLE**

#### **6 SITE VISIT**

- 6.1 The Bidder is advised to visit and examine the site of works and its surroundings and obtain for itself on its own responsibility all information that may be necessary for preparing the Bid and entering into a Contract for the required job. The costs of visiting the site shall be borne by the Bidder.
- 6.2 The Bidder or any of its personnel or agents shall be granted permission by the Employer to enter upon its premises and land for the purpose of such visits, but only upon the express conditions that the Bidder, its personnel and agents will release and indemnify the Employer and its personnel, agents from and against all liabilities in respect thereof, and will be responsible for death or injury, loss or damage to property, and any other loss, damage, costs, and expenses incurred as a result of inspection.

- 6.3 The Bidder shall not be entitled to hold any claim against GGPL for non-compliance due to lack of any kind of pre-requisite information as it is the sole responsibility of the Bidder to obtain all the necessary information with regard to site, surrounding, working conditions, weather etc. on its own before submission of the bid.

## **[B] – BIDDING DOCUMENTS**

### **7 CONTENTS OF BIDDING DOCUMENTS**

- 7.1 The contents of Bidding Documents / Tender Documents are those stated below, and should be read in conjunction with any 'Addendum / Corrigendum' issued in accordance with "ITB: Clause-9":
- Section-I : Invitation for Bid [IFB]
  - Section-II : BID EVALUATION CRITERIA [BEC] & Evaluation methodology
  - Section-III : Instructions to Bidders [ITB]  
Annexure  
Forms & Format
  - Section-IV : Scope of Supply & Special Conditions of Contract [SCC]
  - Section-V : General Conditions of Contract [GCC]
  - Section-VI : Technical Specifications
  - Section-VII : Schedule of Rates

\*Request for Quotation', wherever applicable, shall also form part of the Bidding Document.

- 7.2 The Bidder is expected to examine all instructions, forms, terms & conditions in the Bidding Documents. The "Request for Quotation [RFQ] & Invitation for Bid (IFB)" together with all its attachments thereto, shall be considered to be read, understood and accepted by the Bidders. Failure to furnish all information required by the Bidding Documents or submission of a Bid not substantially responsive to the Bidding Documents in every respect will be at Bidder's risk and may result in the rejection of his Bid.

### **8 CLARIFICATION OF BIDDING DOCUMENTS**

- 8.1 A prospective Bidder requiring any clarification(s) of the Bidding Documents may notify GGPL in writing or by fax or email at GGPL's mailing address indicated in the BDS no later than 02 (two) days prior to pre-bid meeting (in cases where pre-bid meeting is scheduled) or 05 (five) days prior to the due date of submission of bid in cases where pre-bid meeting is not held. GGPL reserves the right to ignore the bidders request for clarification if received after the aforesaid period. GGPL may respond in writing to the request for clarification. GGPL's response including an explanation of the query, but without identifying the source of the query will be uploaded on GGPL's

tendering web site <http://www.godavarigas.in> communicated to prospective bidders by e-mail/ fax.

- 8.2 Any clarification or information required by the Bidder but same not received by the Employer at clause 8.1 (refer BDS for address) above is liable to be considered as "no clarification / information required".

## **9 AMENDMENT OF BIDDING DOCUMENTS**

- 9.1 At any time prior to the 'Bid Due Date', Owner may, for any reason, whether at its own initiative or in response to a clarification requested by a prospective Bidder, modify the Bidding Documents by addenda/ corrigendum.
- 9.2 Any addendum/ corrigendum thus issued shall be integral part of the Tender Document and shall be hosted on the websites as provided at clause no. 2.0 (H) of IFB /communicated to prospective bidders by e-mail/ fax. Bidders have to take into account all such addendum/ corrigendum before submitting their Bid.
- 9.3 The Employer, if consider necessary, may extend the date of submissions of Bid in order to allow the Bidders a reasonable time to furnish their most competitive bid taking into account the amendment issued thereof.

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## **[C] – PREPARATION OF BIDS**

### **10 LANGUAGE OF BID:**

The bid prepared by the Bidder and all correspondence, drawing(s), document(s), certificate(s) etc. relating to the Bid exchanged by Bidder and GGPL shall be written in English language only. In case a document, certificate, printed literature etc. furnished by the Bidder in a language other than English, the same should be accompanied by an English translation duly authenticated by the Chamber of Commerce of Bidders Country, in which case, for the purpose of interpretation of the Bid, the English translation shall govern.

### **11. DOCUMENTS COMPRISING THE BID**

- 11.1 In case the Bids are invited under the Manual two Bid system. The Bid prepared by the Bidder shall comprise the following components sealed in 2 different envelopes:
- 11.1.1 **ENVELOPE-I: "TECHNO-COMMERCIAL / UN-PRICED BID"** shall contain the following:
- (a) 'Covering Letter' on Bidder's 'Letterhead' clearly specifying the enclosed contents.

- (b) 'Bidder's General Information', as per 'Form F-1'.
- (c) 'Bid Form', as per 'Form F-2'
- (d) Copies of documents, as required in 'Form F-3'
- (e) As a confirmation that the prices are quoted in requisite format complying with the requirements copy of Schedule of Rate (SOR) with prices blanked out mentioning quoted / not quoted (as applicable) written against each item.
- (f) 'Letter of Authority' on the Letter Head, as per 'Form F-5'
- (g) 'No Deviation Confirmation', as per 'Form F-6'
- (h) 'Bidder's Declaration regarding Bankruptcy', in 'Form F-7'
- (i) 'Certificate for Non-Involvement of Government of India ' from Bidder, as per 'Form F-8'
- (j) 'Agreed Terms and Conditions', as per 'Form F-10'
- (k) 'ACKNOWLEDGEMENT CUM CONSENT LETTER', as per 'Form F-11'
- (l) Duly attested documents in accordance with the "BID EVALUATION CRITERIA [BEC]" establishing the qualification.
- (m) Undertaking on the Letter head, as per the Form F-12.
- (n) Power of Attorney /copy of Board Resolution, in favour of the authorized signatory of the Bid, as per clause no.2.7 of ITB
- (o) Any other information/details required as per Bidding Document
- (p) EMD in original as per Clause 16 of ITB
- (q) All forms and Formats including Annexures.
- (r) Original Tender Fee (if applicable)
- (s) List of consortium/ JV member (s), if any, and Consortium Agreement (as per format ) clearly defining their involvement & responsibility in this work, wherever applicable as specified elsewhere in the IFB/RFQ/BEC.
- (t) 'Integrity Pact' as per 'Form F-20'
- (u) 'Indemnity Bond' as per 'Form F-21'
- (v) Tender Document duly signed/ digitally signed by the Authorized Signatory.
- (w) Additional document specified in Bidding Data Sheet (BDS).

**Note:** All the pages of the Bid must be signed by the "Authorized Signatory" of the Bidder.

#### **11.1.2 ENVELOPE-II: Price Bid**

- i) The Prices are to be submitted strictly as per the Schedule of Rate of the bidding documents. GGPL shall not be responsible for any failure on the part of the bidder to follow the instructions.
- ii) 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.

- iii) 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.
- iv) In case, it is observed that any of the bidder(s) has/have offered suomoto Discount/Rebate after opening of un-priced bid but before opening of price bids such discount /rebate(s) 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 Work and the same will be conclusive and binding on the bidder.
- v) 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.
- vi) In case any bidder does not quote for any item(s) of “Schedule of Rates” and the estimated price impact is more than 10% of the quoted price, then the bid will be rejected. If such price impact of unquoted items is 10% or less of his quoted price, then the unquoted item(s) shall be loaded highest of the price quoted by the other bidders . If such bidder happens to be lowest evaluated bidder, price of unquoted items shall be considered as included in the quoted bid price.

~~11.2 In case the bids are invited under e tendering system, bidders are requested to refer instructions for participating in E Tendering enclosed herewith as Annexure III and the ready reckoner for bidders available in <https://etender.gail.co.in>. Bids submitted manually shall be rejected, the bids must be submitted on GAIL's E tendering website as follows :-~~

~~11.2.1 **PART-I: “TECHNO-COMMERCIAL/UN-PRICED BID”** comprising all the above documents mentioned at 11.1.1 along with copy of EMD/Bid Bond, Tender fee (wherever applicable), copy of Power of Attorney and copy of integrity pact should be uploaded in the private area earmarked (Tender Document) in the GGPL's e tendering portal.~~

~~Further, Bidders must submit the original " EMD & Tender Fee (wherever applicable), Power of Attorney, Integrity Pact (wherever applicable) and any other documents specified in the Tender Document to the address mentioned in IFB, in a sealed envelope, super scribing the details of Tender Document (i.e.~~

~~tender number & tender for) within 7 days from the date of un-priced bid opening.~~

~~Bidders are required to submit the EMD in original by Due Date and Time of Bid Submission or upload a scanned copy of the same in the Part-I of the Bid. If the Bidder is unable to submit EMD in original by Due Date and Time of Bid Submission, the Bidder is required to upload a scanned copy of the EMD in Part I of Bid, provided the original EMD, copy of which has been uploaded, is received within 7 days from the Due Date of Bid Opening, failing which the Bid will be rejected irrespective of their status/ranking in tendering process and notwithstanding the fact that a copy of EMD was earlier uploaded by the Bidder.~~

#### ~~11.2.2 PART-II: PRICE BID~~

~~The Prices are to be filled strictly in the Schedule of Rate of the bidding documents and provision mentioned at para 11.1.2 hereinabove and to uploaded in SOR attachment/Conditions of E-tendering portal.  
[In case of online bidding, necessary modifications w.r.t. SOR attachment and provisions for online filling the rate and its attachment, should be mentioned]~~

- ~~11.3 In case of bids invited under single bid system, a single envelope containing all documents specified at Clause 11.1.1 & 11.1.2 of ITB above form the BID. All corresponding conditions specified at Clause 11.1.1 & 11.1.2 of ITB shall become applicable in such a case.~~

### **12 SCHEDULE OF RATES / BID PRICES**

- 12.1 Unless stated otherwise in the Bidding Documents, the Contract shall be for the whole works as described in Bidding Documents, based on the rates and prices submitted by the Bidder and accepted by the Employer. The prices quoted by the Bidders will be inclusive of all taxes except GST ((CGST & SGST/UTGST or IGST).
- 12.2 Prices must be filled in format for "Schedule of Rates [SOR]" enclosed as part of Tender document. If quoted in separate typed sheets and any variation in item description, unit or quantity is noticed; the Bid is liable to be rejected.
- 12.3 **Bidder shall quote for all the items of "SOR" after careful analysis of cost involved for the performance of the completed item considering all parts of the Bidding Document.** In case any activity though specifically not covered in description of item under "SOR" but is required to complete the works as per Specifications, Scope of Work / Service, Standards, General Conditions of Contract ("GCC"), Special Conditions of Contract ("SCC") or any other part of Bidding Document, the prices quoted shall deemed to be inclusive of cost incurred for such activity.

- 12.4 All duties, taxes and other levies [if any] payable by the Contractor under the Contract, or for any other cause except final **GST (CGST & SGST/UTGST or IGST)** shall be included in the rates / prices and the total bid-price submitted by the Bidder. Applicable rate of **GST (CGST & SGST/ UTGST or IGST)** on the contract value shall be indicated in Agreed Terms & Conditions (Format-F10) and SOR
- 12.5 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. Any new taxes & Duties, if imposed by the State/ Govt. of India after due date of bid submission but before the Contractual Delivery Date, shall be reimbursed to the contractor on submission of documentary evidence for proof of payment to State/ Govt. Authorities and after ascertaining it's applicability with respect to the contract.
- 12.6 The Bidder shall quote the prices in 'figures' & words. There should not be any discrepancy between the prices indicated in figures and the price indicated in words. In case of any discrepancy, the same shall be dealt as per clause no. 30 of ITB.
- 12.7 Further, Bidder shall also mention the **Service Accounting Codes (SAC) / Harmonized System of Nomenclature (HSN)** at the designated place in SOR.
- 13 **GST (CGST & SGST/UTGST or IGST)**
- 13.1 Bidders are required to submit copy of the GST Registration Certificate while submitting the bids wherever **GST (CGST & SGST/UTGST or IGST)** is applicable.
- 13.2 Quoted prices should be inclusive of all taxes and duties, except **GST (CGST & SGST or IGST or UTGST)**. Please note that the responsibility of payment of **GST (CGST & SGST or IGST or UTGST)** lies with the Supplier of Goods / Services only. Supplier of Goods / Services (Service Provider) providing taxable service shall issue an Invoice/ Bill, as the case may be as per rules/ regulation of GST. Further, returns and details required to be filled under GST laws & rules should be timely filed by Supplier of Goods / Services (Service Provider) with requisite details.
- Payments to Service Provider for claiming **GST (CGST & SGST/UTGST or IGST)** amount will be made provided the above formalities are fulfilled. Further, GGPL may seek copies of challan and certificate from Chartered Accountant for deposit of **GST (CGST & SGST/UTGST or IGST)** collected from Owner.
- 13.3 In case CBEC (Central Board of Excise and Customs)/ any equivalent Central Government agency/State Government agency brings to the notice of GGPL that the Supplier of Goods / Services (Service Provider) has not remitted the amount towards **GST (CGST & SGST/UTGST or IGST)** collected from GGPL to the government exchequer, then, that Supplier of Goods / Services (Service Provider) shall be put under Holiday list of GGPL for period of six

months as mentioned in Procedure for Evaluation of Performance of Vendors/ Suppliers/Contractors/ Consultants.

- 13.4 In case of statutory variation in **GST (CGST & SGST/UTGST or IGST)**, 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.

Beyond the contract period, in case GGPL is not entitled for input tax credit of **GST (CGST & SGST/UTGST or IGST)**, then any increase in the rate of **GST (CGST & SGST/UTGST or IGST)** beyond the contractual delivery period shall be to Service Provider's account whereas any decrease in the rate **GST (CGST & SGST/UTGST or IGST)** shall be passed on to the Owner.

Beyond the contract period, in case GGPL is entitled for input tax credit of **GST (CGST & SGST/UTGST or IGST)**, then statutory variation in applicable **GST (CGST & SGST/UTGST or IGST)** on supply and on incidental services, shall be to GGPL's account.

Claim for payment of **GST (CGST & SGST/UTGST or IGST)**/ Statutory variation, should be raised within two [02] months from the date of issue of 'Government Notification' for payment of differential (in %) **GST (CGST & SGST/UTGST or IGST)**, otherwise claim in respect of above shall not be entertained for payment of arrears.

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

- 13.5 Where the GGPL is entitled to avail the input tax credit of **GST (CGST & SGST/UTGST or IGST)**:-

- 13.5.1 Owner/GGPL will reimburse the **GST (CGST & SGST/UTGST or IGST)** to the Supplier of Goods / Services (Service Provider) at actuals against submission of Invoices as per format specified in rules/ regulation of GST to enable Owner/GGPL to claim input tax credit of **GST (CGST & SGST/UTGST or IGST)** paid. In case of any variation in the executed quantities, the amount on which the **GST (CGST & SGST/UTGST or IGST)** is applicable shall be modified in same proportion. Returns and details required to be filled under GST laws & rules should be timely filed by supplier with requisite details.

- 13.5.2 The input tax credit of **GST (CGST & SGST/UTGST or IGST)** quoted shall be considered for evaluation of bids, as per evaluation criteria of tender document.

- 13.6 Where the GGPL is not entitled to avail/take the full input tax credit of **GST (CGST & SGST/UTGST or IGST)**:-

- 13.6.1 Owner/GGPL will reimburse **GST (CGST & SGST/UTGST or IGST)** to the Supplier of Goods / Services (Service Provider) at actuals against submission

of Invoices as per format specified in rules/ regulation of GST subject to the ceiling amount of **GST (CGST & SGST/UTGST or IGST)** as quoted by the bidder, subject to any statutory variations, except variations arising due to change in turnover. In case of any variation in the executed quantities (If directed and/or certified by the Engineer-In-Charge) the ceiling amount on which **GST (CGST & SGST/UTGST or IGST)** is applicable will be modified on pro-rata basis.

13.6.2 The bids will be evaluated based on total price including applicable **GST (CGST & SGST/UTGST or IGST)**.

13.7 GGPL will prefer to deal with registered supplier of goods/ services under GST. Therefore, bidders are requested to get themselves registered under GST, if not registered yet.

However, in case any unregistered bidder is submitting their bid, their prices will be loaded with applicable **GST (CGST & SGST/UTGST or IGST)** while evaluation of bid. Where GGPL is entitled for input credit of **GST (CGST & SGST/UTGST or IGST)**, the same will be considered for evaluation of bid as per evaluation methodology of tender document.

13.8 In case GGPL is required to pay entire/certain portion of applicable **GST (CGST & SGST/UTGST or IGST)** and remaining portion, if any, is to be deposited by Bidder directly as per **GST (CGST & SGST/UTGST or IGST)** laws, entire applicable rate/amount of **GST (CGST & SGST/UTGST or IGST)** to be indicated by bidder in the SOR.

Where GGPL has the obligation to discharge **GST (CGST & SGST/UTGST or IGST)** liability under reverse charge mechanism and GGPL has paid or is /liable to pay **GST (CGST & SGST/UTGST or IGST)** to the Government on which interest or penalties becomes payable as per GST laws for any reason which is not attributable to GGPL or ITC with respect to such payments is not available to GGPL for any reason which is not attributable to GGPL, then GGPL shall be entitled to deduct/ setoff / recover such amounts against any amounts paid or payable by GGPL to Contractor / Supplier.

13.9 Contractor shall ensure timely submission of invoice(s) as per rules/ regulations of GST with all required supporting document(s) within a period specified in Contracts/ LOA to enable GGPL to avail input tax credit. Further, returns and details required to be filled under GST laws & rules should be timely filed by supplier with requisite details.

If input tax credit with respect to **GST (CGST & SGST/UTGST or IGST)** is not available to GGPL for any reason which is not attributable to GGPL, then GGPL shall not be obligated or liable to pay or reimburse **GST (CGST & SGST/UTGST or IGST)** charged in the invoice(s) and shall be entitled to / deduct/ setoff / recover the such **GST (CGST & SGST/UTGST or IGST)** thereupon together with all penalties and interest if any, against any amounts paid or payable by GGPL to Supplier of Goods / Services.

**13.10 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 of Goods / Services may note the above and quote their prices accordingly.

13.11 In case the GST rating of vendor on the GST portal / Govt. official website is negative / black listed, then the bids may be rejected by GGPL. Further, in case rating of bidder is negative / black listed after award of work for supply of goods / services, then GGPL shall not be obligated or liable to pay or reimburse GST to such vendor and shall also be entitled to deduct / recover such GST along with all penalties / interest, if any, incurred by GGPL.

13.12 **GST (CGST & SGST/UTGST or IGST) is implemented w.e.f. 01.07.2017 which subsumed various indirect taxes and duties applicable before 01.07.2017. Accordingly, the provisions of General Condition of Contract relating to taxes and duties which are subsumed in GST are modified to aforesaid provisions mentioned in clause no. 12 and 13 of ITB.**

**14 BID CURRENCIES:** Bidders must submit bid in Indian Rupees only.

**15 BID VALIDITY**

- 15.1 Bids shall be kept valid for period specified in BDS from the final Due date of submission of bid'. A Bid valid for a shorter period may be rejected by GGPL as 'non-responsive'.
- 15.2 In exceptional circumstances, prior to expiry of the original 'Bid Validity Period', the Employer may request the Bidders to extend the 'Period of Bid Validity' for a specified additional period. The request and the responses thereto shall be made in writing or by fax/email. A Bidder may refuse the request without forfeiture of his EMD. A Bidder agreeing to the request will not be required or permitted to modify his Bid, but will be required to extend the validity of its EMD for the period of the extension and in accordance with "ITB: Clause-16" in all respects.

**16 EARNEST MONEY DEPOSIT**

- 16.1 Bid must be accompanied with earnest money (**i.e Earnest Money Deposit (EMD)**) also known as **Bid Security**) in the form of **‘Demand Draft’ / ‘Banker’s Cheque’**[in favour of **Godavari Gas Private Limited** payable at place mentioned in **BDS**] or **‘Bank Guarantee’** or **‘Letter of Credit’** strictly as per the format given in form F 4/ F- 4A (as the case may be) of the **Tender Document**. Bidder shall ensure that EMD submitted in the form of **‘Bank Guarantee’** or **‘Letter of Credit’** should have a validity of at least ‘two [02] months’ beyond the validity of the Bid. EMD submitted in the form of **‘Demand Draft’** or **‘Banker’s Cheque’** should be valid for three months.

Bid not accompanied with EMD, or EMD not in requisite format shall be liable for rejection. The EMD shall be submitted in Indian Rupees only.

- 16.2 The EMD is required to protect GGPL against the risk of Bidder’s conduct, which would warrant the forfeiture of EMD, pursuant to clause-16.7 of ITB.
- 16.3 GGPL shall not be liable to pay any documentation charges, Bank charges, commission, interest etc. on the amount of EMD. In case EMD is in the form of a ‘Bank Guarantee’, the same shall be from any Indian scheduled Bank or a branch of an International Bank situated in India and registered with ‘Reserve Bank of India’ as Scheduled Foreign Bank. However, in case of ‘Bank Guarantee’ from Banks other than the Nationalized Indian Banks, the Bank must be commercial Bank having net worth in excess of Rs. 100 Crores [Rupees One Hundred Crores] and a declaration to this effect should be made by such commercial Bank either in the ‘Bank Guarantee’ itself or separately on its letterhead.
- 16.4 Any Bid not secured in accordance with “ITB: Clause-16.1 & Clause-16.3” may be rejected by GGPL as non-responsive.

- 16.5 Unsuccessful Bidder's EMD will be discharged/ returned as promptly as possible, but not later than 'thirty [30] days' after finalization of tendering process.
- 16.6 The successful Bidder's EMD will be discharged upon the Bidder's acknowledging the 'Award' and signing the 'Agreement' (if applicable) and furnishing the 'Contract Performance Security (CPS)/ Security Deposit' pursuant to clause no. 38 of ITB.
- 16.7 Notwithstanding anything contained herein, the EMD may also be forfeited in any of the following cases:
- If a Bidder withdraws his Bid during the 'Period of Bid Validity'
  - If a Bidder has indulged in corrupt/fraudulent /collusive/coercive practice
  - If the Bidder modifies Bid during the period of bid validity (after Due Date and Time for Bid Submission).
  - Violates any other condition, mentioned elsewhere in the Tender Document, which may lead to forfeiture of EMD.
  - In the case of a successful Bidder, if the Bidder fails to:
    - to acknowledge receipt of the "Notification of Award" / Fax of Acceptance[FOA]",
    - to furnish "Contract Performance Security / Security Deposit", in accordance with "ITB: Clause-38"
    - to accept 'arithmetical corrections' as per provision of the clause 30 of ITB.
- 16.8 In case EMD is in the form of 'Bank Guarantee' or 'Letter of Credit', the same must indicate the Tender Document No. and the name of Tender Document for which the Bidder is quoting. This is essential to have proper correlation at a later date.
- 16.9 MSEs (Micro & Small Enterprises) are exempted from submission of EMD in accordance with the provisions of PPP-2012 and Clause 40 of ITB. The Government Departments/PSUs are also exempted from the payment of EMD. However, Traders/Dealers/ Distributors /Stockiest /Wholesaler are not entitled for exemption of EMD.

## **17 PRE-BID MEETING (IF APPLICABLE)**

- 17.1 The Bidder(s) or his designated representative are invited to attend a "Pre-Bid Meeting" which will be held at address specified in IFB. It is expected that a bidder shall not depute more than 02 representatives for the meeting.
- 17.2 Purpose of the meeting will be to clarify issues and to answer questions on any matter that may be raised at that stage and give hands-on e-tendering.

17.3 Text of the questions raised and the responses given, together with any responses prepared after the meeting, will be uploaded on GGPL e-tendering website against the Tender. Any modification of the Contents of Bidding Documents listed in "ITB: Clause-7.1", that may become necessary as a result of the Pre-Bid Meeting shall be made by the Employer exclusively through the issue of an Addendum / Corrigendum pursuant to "ITB: Clause-9", and not through the minutes of the Pre-Bid Meeting.

17.4 Non-attendance of the Pre-Bid Meeting will not be a cause for disqualification of Bidder.

## **18 FORMAT AND SIGNING OF BID**

18.1 The original and all copies of the Bid shall be typed or written in indelible ink [in the case of copies, photocopies are also acceptable] and shall be signed by a person or persons duly authorized to sign on behalf of the Bidder (as per POA). The name and position held by each person signing, must be typed or printed below the signature. All pages of the Bid except for un-amended printed literature where entry(s) or amendment(s) have been made shall be initialed by the person or persons signing the Bid.

18.2 The Bid shall contain no alterations, omissions, or additions, unless such corrections are initialed by the person or persons signing the Bid.

18.3 In case of e-tendering, digitally signed documents to be uploaded as detailed in addendum to ITB.

## **19 ZERO DEVIATION AND REJECTION CRITERIA**

19.1 ZERO DEVIATION: Deviation to terms and conditions of "Bidding Documents" may lead to rejection of bid. GGPL will accept bids based on terms & conditions of "Bidding Documents" only. Bidder may note GGPL will determine the substantial responsiveness of each bid to the Bidding Documents pursuant to provision contained in clause 29 of ITB. For purpose of this, a substantially responsive bid is one which conforms to all terms and conditions of the Bidding Documents without deviations or reservations. GGPL's determination of a bid's responsiveness is based on the content of the bid itself without recourse to extrinsic evidence. GGPL reserves the right to raise technical and/or commercial query(s), if required, may be raised on the bidder(s). The response(s) to the same shall be in writing, and no change in the price(s) or substance of the bids shall be sought, offered or permitted. The substance of the bid includes but not limited to prices, completion, scope, technical specifications, etc. Bidders are requested to not to take any deviation/exception to the terms and conditions laid down in this "Tender Documents", and submit all requisite documents as mentioned in this "Tender Documents", failing which their offer will be liable for rejection. If a bidder

does not reply to the queries in the permitted time frame then its bid shall be evaluated based on the documents available in the bid.

**19.2 REJECTION CRITERIA:** Notwithstanding the above, deviation to the following clauses of Tender document shall lead to summarily rejection of Bid:

- (a) Firm Price
- (b) Earnest Money Deposit / Bid Security
- (c) Specifications & Scope of Supply
- (d) Schedule of Rates / Price Schedule / Price Basis
- (e) Duration / Period of Contract/ Completion schedule
- (f) Period of Validity of Bid
- (g) Price Reduction Schedule
- (h) Contract Performance Security
- (i) Guarantee / Defect Liability Period
- (j) Arbitration / Resolution of Dispute/Jurisdiction of Court
- (k) Force Majeure & Applicable Laws
- (l) Integrity Pact, if Applicable
- (m) Any other condition specifically mentioned in the tender document elsewhere that non-compliance of the clause lead to rejection of bid

Note: Further, it is once again reminded not to mention any condition in the Bid which is contradictory to the terms and conditions of Tender document.

## **20 E-PAYMENT**

Godavari Gas Private Limited has initiated payments to Suppliers and Contractors electronically, and to facilitate the payments electronically through 'e-banking'. The successful bidder should give the details of his bank account as per the bank mandate form.

## **[D] – SUBMISSION OF BIDS**

### **21 SUBMISSION, SEALING AND MARKING OF BIDS**

- 21.1 In case of e-tendering, bids shall be submitted through e-tender mode in the manner specified elsewhere in tender document. No Manual/ Hard Copy (Original) offer shall be acceptable.
- 21.2 In case of manual tendering bid must be submitted in sealed envelope. If the envelope is not sealed & marked as per Clause No. 11 of ITB, the employer will assume no responsibility for misplacement or pre-mature opening of the bid.
- 21.3 All the bids shall be addressed to the owner at address specified in IFB.

- 21.4 Bids submitted under the name of AGENT/CONSULTANT /REPRESENTATIVE/RETAINER/ASSOCIATE etc. on behalf of a bidder/affiliate shall not be accepted.

## **22 DEADLINE FOR SUBMISSION OF BIDS**

- 22.1 In case of e-bidding, the bids must be submitted through e-tender mode not later than the date and time specified in the tender documents/BDS.
- 22.2 In case of manual tendering EMD along with bid must be submitted within the due date & time.
- 22.3 GGPL may, in exceptional circumstances and at its discretion, extend the deadline for submission of Bids (clause 9 of ITB refers). In which case all rights and obligations of GGPL and the Bidders, previously subject to the original deadline will thereafter be subject to the deadline as extended. Notice for extension of due date of submission of bid will be uploaded on GGPL's website/ communicated to the bidders.

## **23 LATE BIDS**

- 23.1 Any bids received after the notified date and time of closing of tenders will be treated as late bids.
- 23.2 ~~In case of e tendering, e tendering system of GGPL shall close immediately after the due date for submission of bid and no bids can be submitted thereafter.~~

In case of manual tendering, bids received by GGPL after the due date for submission of bids shall not be considered. Such late bids shall be returned to the bidder within "10 days" in 'unopened conditions'. The EMD of such bidders shall be returned along with the un-opened bid. In case of e-tendering, where the bid bond/physical documents has been received but the bid is not submitted by the bidder in the e-tendering portal, such bid bond/ physical documents shall be returned immediately.

- 23.3 Unsolicited Bids or Bids received to address other than one specifically stipulated in the tender document will not be considered for evaluation/opening/award if not received to the specified destination within stipulated date & time.

## **24 MODIFICATION AND WITHDRAWAL OF BIDS**

- 24.1 Modification and withdrawal of bids shall be as follows:-

### **24.1.1 IN CASE OF E- TENDERING**

~~The bidder may withdraw or modify its bid after bid submission but before the due date and time for submission as per tender document.~~

### **24.1.2 IN CASE OF MANUAL BIDDING**

The bidder may withdraw or modify its bid after bid submission but before the due date for submission as per tender document provided that the written notice of the modification/ substitution/ withdrawal is received by GGPL prior to the deadline for submission of bid.

- 24.2 The modification shall also be prepared, sealed, marked and dispatched in accordance with the provisions of the clause 11 & 22 of ITB with relevant 'Cut-Out Slip' duly pasted and mentioning on top of the envelope as "MODIFICATION". In case of withdrawal of bid, the Envelope containing withdrawal letter duly superscribing the envelope as "WITHDRAWAL" and "Tender Document number :...."/ communication regarding withdrawal of bid with "Tender Document number :...."/ must reach concerned dealing official of GGPL within Due date & Time of submission of Bid. No bid shall be modified/ withdrawn after the Due Date & Time for Bid submission.
- 24.3 Any withdrawal/ modification/substitution of Bid in the interval between the Due Date & Time for Bid submission and the expiration of the period of bid validity specified by the Bidder in their Bid shall result in the Bidder's forfeiture of EMD pursuant to clause 16 of ITB and rejection of Bid.
- 24.4 The latest Bid submitted by the Bidder shall be considered for evaluation and all other Bid(s) shall be considered to be unconditionally withdrawn.
- 24.5 In case after price bid opening the lowest evaluated bidder (L1) is not awarded the job for any mistake committed by him in bidding or withdrawal of bid or modification of bid or varying any term in regard thereof leading to re-tendering, GGPL shall forfeit EMD paid by the bidder and such bidders shall be debarred from participation in re-tendering of the same job(s)/item(s). Further, such bidder will be put on holiday for a period of six months after following the due procedure.

**25 EMPLOYER'S RIGHT TO ACCEPT ANY BID AND TO REJECT ANY OR ALL BIDS**

GGPL reserves the right to accept or reject any Bid, and to annul the Bidding process and reject all Bids, at any time prior to award of Contract, without thereby incurring any liability to the affected Bidder or Bidders or any obligations to inform the affected Bidder or Bidders of the ground for GGPL's action. However, Bidder if so desire may seek the reason (in writing) for rejection of their Bid to which GGPL shall respond quickly.

**[E] – BID OPENING AND EVALUATION**

**26 BID OPENING**

**26.1 *Unpriced Bid Opening :***

GGPL will open bids, in the presence of bidders' designated representatives who choose to attend, at date, time and location stipulated in the BDS. The

bidders' representatives, who are present shall sign a bid opening register evidencing their attendance.

## **26.2 *Priced Bid Opening:***

26.2.1 GGPL will open the price bids of those bidders who meet the qualification requirement and whose bids are determined to be technically and commercially responsive. Bidders selected for opening of their price bids shall be informed about the date of price bid opening. Bidders may depute their authorized representative to attend the bid opening. The bidders' representatives, who are present shall sign a register evidencing their attendance and may be required to be present on a short notice.

26.2.2 The price bids of those Bidders who were not found to be techno-commercially responsive shall not be opened in both manual tendering and e-tendering. In case of Manual Tender, the envelope containing Price Bid shall be returned unopened after opening of the price bids of techno-commercially responsive Bidders.

26.3 In case of bids invited under the single bid system, bid shall be opened on the specified due date & time.

## **27 CONFIDENTIALITY**

Information relating to the examination, clarification, evaluation and comparison of Bids, and recommendations for the award of a Contract, shall not be disclosed to Bidder(s) or any other persons not officially concerned with such process.

## **28 CONTACTING THE EMPLOYER**

28.1 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. Information relating to the examination, clarification, evaluation & recommendation for award shall not be disclosed.

28.2 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.

## **29 EXAMINATION OF BIDS AND DETERMINATION OF RESPONSIVENESS**

29.1 The owner's determination of a bid's responsiveness is based on the content of the bid only. Prior to the detailed evaluation of Bids, the Employer will determine whether each Bid:-

- (a) Meets the "Bid Evaluation Criteria" of the Bidding Documents;
- (b) Has been properly signed;

- (c) Is accompanied by the required 'Earnest Money / Bid Security';
  - (d) Is substantially responsive to the requirements of the Bidding Documents; and
  - (e) Provides any clarification and/or substantiation that the Employer may require to determine responsiveness pursuant to "ITB: Clause-29.2"
- 29.2 A substantially responsive Bid is one which conforms to all the terms, conditions and specifications of the Bidding Documents without material deviations or reservations or omissions for this purpose employer defines the foregoing terms below:-
- a) "Deviation" is departure from the requirement specified in the tender documents.
  - b) "Reservation" is the setting of limiting conditions or withholding from complete acceptance of the requirement in the tender documents.
  - c) "Omission" is the failure to submit part or all of the information or documentation required in the tender document.
- 29.3 A material deviation, reservation or omission is one that,
- a) If accepted would,
    - i) Affect in any substantial way the scope, quality, or performance of the job as specified in tender documents.
    - ii) Limit, in any substantial way, inconsistent with the Tender Document, the Employer's rights or the tenderer's obligations under the proposed Contract.
  - b) If rectified, would unfairly affect the competitive position of other bidders presenting substantially responsive bids.
- 29.4 The employer shall examine all aspects of the bid to confirm that all requirements have been met without any material deviation, reservation or omission.
- 29.5 If a Bid is not substantially responsive, it may be rejected by the Employer and may not subsequently be made responsive by correction or withdrawal of the of material deviation, reservation or omission.

### **30 CORRECTION OF ERRORS**

- 30.1 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:
- (i) When there is a difference between the rates in figures and words, the rate which corresponds to the amount worked out by the Bidder (by multiplying the quantity and rate) shall be taken as correct.

- (ii) When the rate quoted by the Bidder in figures and words tallies but the amount is incorrect, the rate quoted by the contractor shall be taken as correct and not the amount and the amount shall be re-calculated/ corrected accordingly.
  - (iii) When it is not possible to ascertain the correct rate, in the manner prescribed above, the rate as quoted in words shall be adopted and the amount worked out, for comparison purposes
- 30.2 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.

**31 CONVERSION TO SINGLE CURRENCY FOR COMPARISON OF BIDS**

Not Applicable. All bids submitted must be in the currency specified at clause 14 of ITB.

**32 EVALUATION AND COMPARISON OF BIDS**

Bid shall be evaluated as per evaluation criteria mentioned in Section-II of bidding documents.

**33 COMPENSATION FOR EXTENDED STAY (FOR APPLICABILITY OF THIS CLAUSE REFER BDS):-**

- 33.1 In the event of the time of completions of work getting delayed beyond the time schedule indicated in the bidding document plus a grace period equivalent to 1/5<sup>th</sup> of the time schedule or 2 months whichever is more, due to reasons solely attributable to Employer, the Contractor shall be paid compensation for extended stay (ESC) to maintain necessary organizational set up and construction tools, tackles, equipment etc. at site of work.
- 33.2 The bidder is required to specify the rate for ESC on per month basis in the "PRICE PART" of his bid, which shall be considered for loading on total quoted price during price bid evaluation. The loading shall be done of a period of 1/5<sup>th</sup> of the time schedule or 1 month whichever is less. In case bidder does not indicate the rate for ESC in price part of his bid, it will be presumed that no ESC is required by the bidder and evaluation shall be carried out accordingly.

**34 PURCHASE PREFERENCE**

Purchase preference to Central government public sector Undertaking and Micro and Small Enterprises (MSEs) shall be allowed as per Government instructions in vogue.

**[F] – AWARD OF CONTRACT**

**35 AWARD**

Subject to "ITB: Clause-29", GGPL will award the Contract to the successful Bidder whose Bid has been determined to be substantially responsive and has

been determined as the lowest provided that bidder, is determined to be qualified to satisfactorily perform the Contract.

### **36 NOTIFICATION OF AWARD / FAX OF ACCEPTANCE**

36.1 Prior to the expiry of 'Period of Bid Validity', Notification of Award for acceptance of the Bid will be intimated to the successful Bidder by GGPL either by Fax / E - mail /Letter or like means defined as the "Fax of Acceptance (FOA)". The Contract shall enter into force on the date of FOA and the same shall be binding on GGPL and successful Bidder (i.e. Contractor/Service Provider). The Notification of Award/FOA will constitute the formation of a Contract. The detailed Letter of Acceptance shall be issued thereafter incorporating terms & conditions of Tender Document, Corrigendum, Clarification(s), Bid and agreed variation(s)/acceptable deviation(s), if any. GGPL may choose to issue Notification of Award in form of detailed Letter of Acceptance without issuing FOA and in such case the Contract shall enter into force on the date of detailed Letter of Acceptance only.

36.2 Contract period shall commence from the date of "Notification of Award" or as mentioned in the Notification of Award. The "Notification of Award" will constitute the formation of a Contract, until the Contract has been effected pursuant to signing of Contract as per "ITB: Clause-37".

Upon the successful Bidder's / Contractor's furnishing of 'Contract Performance Security / Security Deposit', pursuant to "ITB: Clause-38", GGPL will promptly discharge his 'Earnest Money / Bid Security', pursuant to "ITB: Clause-16"

### **37 SIGNING OF AGREEMENT**

37.1 GGPL will award the Contract to the successful Bidder, who, within 'fifteen [15] days' of receipt of the same, shall sign and return the acknowledged copy to GGPL.

37.2 The successful Bidder/Contractor shall be required to execute an 'Agreement' in the proforma given in this Bidding Document on a 'non-judicial stamp paper' of appropriate value [cost of the 'stamp-paper' shall be borne by the successful Bidder/Contractor] and of 'state' specified in Bidding Data Sheet (BDS)only, within 'fifteen [15] days' of receipt of the "Fax of Acceptance [FOA]" of the Tender by the successful Bidder/Contractor failure on the part of the successful Bidder/Contractor to sign the 'Agreement' within the above stipulated period, shall constitute sufficient grounds for forfeiture of EMD/Security Deposit.

### **38 CONTRACT PERFORMANCE SECURITY / SECURITY DEPOSIT**

38.1 Within 30 days of the receipt of the notification of award/ Fax of Acceptance from GGPL, the successful bidder shall furnish the Contract Performance Security (CPS) in accordance with of General Conditions of the Contract. The CPS shall be in the form of either Banker's Cheque or Demand Draft or Bank Guarantee or Letter of Credit and shall be in the currency of the Contract.

However, CPS shall not be applicable in cases where in the order value as specified in Notification of Award is less than INR 5 Lakh (exclusive of taxes & duties).

- 38.2 The contract performance security shall be for an amount equal to specified in Bidding Data Sheet (BDS) towards faithful performance of the contractual obligations and performance of equipment. For the purpose of CPS, Contract/order value shall be exclusive of **GST (CGST & SGST/UTGST or IGST)** to be reimbursed by the Owner.

Bank Guarantee towards CPS shall be from any Indian scheduled bank or a branch of an International bank situated in India and registered with Reserve bank of India as scheduled foreign bank in case of Indian bidder as well as foreign bidder. However, in case of bank guarantees from banks other than the Nationalized Indian banks, the bank must be a commercial bank having net worth in excess of Rs 100 crores and a declaration to this effect should be made by such commercial bank either in the Bank Guarantee itself or separately on its letterhead. This bank guarantee shall be valid for a period as three months beyond the DLP specified in Bid Data Sheet.

- 38.3 Failure of the successful bidder to comply with the requirements of this article shall constitute sufficient grounds for the annulment of the award and forfeiture of the EMD.
- 38.4 The CPS has to cover the entire contract value including extra works/services also. As long as the CPS submitted at the time of award take cares the extra works/ services executed and total executed value are within the awarded contract price, there is no need for additional CPS. As soon as the total executed value is likely to burst the ceiling of awarded contract price, the contractor should furnish additional CPS.

**39 PROCEDURE FOR ACTION IN CASE CORRUPT/ FRAUDULENT/COLLUSIVE/ COERCIVE PRACTICES**

- 39.1 Procedure for action in case Corrupt/ Fraudulent/Collusive/Coercive Practices is enclosed at Annexure-I.
- 39.2 The Fraud Prevention Policy document is available on GAIL's website ([www.gailonline.com](http://www.gailonline.com))
- 39.3 **NON-APPLICABILITY OF ARBITRATION CLAUSE IN CASE OF BANNING OF VENDORS/ SUPPLIERS / CONTRACTORS/BIDDERS/ CONSULTANTS INDULGED IN FRAUDULENT/ COERCIVE PRACTICES**

Notwithstanding anything contained contrary in GCC and other "CONTRACT DOCUMENTS", in case it is found that the Vendors/ Suppliers / Contractors/Bidders/ Consultants indulged in fraudulent/ coercive practices at the time of bidding, during execution of the contract etc., and/or on other grounds as mentioned in GAIL's "Procedure for action in case

Corrupt/Fraudulent/Collusive/Coercive Practices” (Annexure-I), the contractor/bidder shall be banned (in terms of aforesaid procedure) from the date of issuance of such order by GGPL, to such Vendors/ Suppliers / Contractors/Bidders/ Consultants.

The Vendor/ Supplier / Contractor/ Bidder/Consultant understands and agrees that in such cases where Vendor/ Supplier / Contractor/ Bidder/Consultant has been banned (in terms of aforesaid procedure) from the date of issuance of such order by GGPL, such decision of GGPL shall be final and binding on such Vendor/ Supplier / Contractor/ Bidder/Consultant and the ‘Arbitration clause’ in the GCC and other "CONTRACT DOCUMENTS" shall not be applicable for any consequential issue /dispute arising in the matter.

#### **40 PUBLIC PROCUREMENT POLICY FOR MICRO AND SMALL ENTERPRISES**

40.1 Following provision has been incorporated in tender for MSEs, in line with notification of Government of India, vide Gazette of India No. 503 dated 26.03.2012 proclaiming the Public Procurement Policy on procurement of goods and services from Micro and Small Enterprises (MSEs)

- i) Issue of tender document to MSEs free of cost.
- ii) Exemption to MSEs from payment of EMD/Bid Security.
- iii) In Tender, participating Micro and Small Enterprises quoting price within price band of L1+15% shall also be allowed to supply a portion of requirement by bringing down their prices to L1 price in a situation where L1 price is from someone other than a micro and small enterprises and such micro and small enterprises shall be allowed to supply upto 25% of the total tendered value. In case of more than one such Micro and Small Enterprises, the supply shall be shared proportionately (to tendered quantity). Further, out of above 25%, 5% (20% of 25%) shall be reserved for MSEs owned by SC/ST entrepreneurs. Further, 3% shall be reserved for MSEs owned by women within above 25% reservation. The respective quota(s) shall be transferred to other MSEs in case of non-availability of MSEs owned by SC/ST entrepreneurs/ MSEs owned by Women.

Further, the definition of MSEs owned by Women shall be as per the definition for MSEs owned by SC/ST Entrepreneurs.

The quoted prices against various items shall remain valid in case of splitting of quantities of the items above.

In case tendered item is non-splitable or non- dividable (specified in Bid Data Sheet), MSE quoting price within price band L1 (other than MSE)

+ 15% , may be awarded for full/ complete supply of total tendered value subject to matching of L1 price.

40.2 The MSE(s) owned by SC/ST Entrepreneurs shall mean:-

- a) In case of proprietary MSE, Proprietor(s) shall be SC/ST.
- b) In case of partnership MSE, the SC/ST partners shall be holding atleast 51% share in the unit
- c) In case of private Limited Companies, at least 51% share is held by SC/ST. If the MSE is owned by SC/ST Entrepreneurs, the bidder shall furnish appropriate documentary evidence in this regard.

The MSE(s) owned by Women shall mean:-

- a) In case of proprietary MSE, Proprietor(s) shall be Women.
- b) In case of partnership MSE, the Women partners shall be holding atleast 51% share in the unit
- c) In case of private Limited Companies, at least 51% share is held by Women. If the MSE is owned by Women Entrepreneurs, the bidder shall furnish appropriate documentary evidence in this regard.

40.3 In case bidder is a Micro or Small Enterprise under the Micro, Small and Medium Enterprises Development Act, 2006, the bidder shall submit the following :

- a) Documentary evidence that the bidder is a Micro or Small Enterprises registered with District Industries Centers or Khadi and Village Industries National Small Industries Corporation or Directorate of Handicrafts and Handloom or any other body specified by Ministry of Micro, Small and Medium Enterprises or Udyog Aadhaar Memorandum.
- b) If the MSE is owned by SC/ST Entrepreneurs/ Women Entrepreneur, the bidder shall furnish appropriate documentary evidence in this regard.

The above documents submitted by the bidder shall be duly certified by the Chartered Accountant (not being an employee or a Director or not having any interest in the bidder's company/firm) and notary public with legible stamp.

If the bidder does not provide the above confirmation or appropriate document or any evidence, then it will be presumed that they do not qualify for any preference admissible in the Public Procurement Policy (PPP) 2012.

Further, MSEs who are availing the benefits of the Public Procurement Policy (PPP) 2012 get themselves registered with MSME Data Bank being operated by NSIC, under SME Division, M/o MSME, in order to create proper data base of MSEs which are making supplies to CPSUs.

**41 AHR ITEMS**

In item rate contract where the quoted rates for the items exceed 50% of the estimate rates, such items will be considered as Abnormally High Rates (AHR) items and payment of AHR items beyond the SOR stipulated quantities shall be made at the lowest amongst the following rates:

- I) Rates as per SOR, quoted by the Contractor/Bidder.
- II) Rate of the item, which shall be derived as follows:
  - a. Based on rates of Machine and labour as available from the contract (which includes contractor's supervision, profit, overheads and other expenses).
  - b. In case rates are not available in the contract, rates will be calculated based on prevailing market rates of machine, material and labour plus 15% to cover contractor's supervision profit, overhead & other expenses.

**42 VENDOR PERFORMANCE EVALUATION**

Shall be as stipulated Annexure II to ITB herewith.

**43 INCOME TAX & CORPORATE TAX**

- 43.1 Income tax deduction shall be made from all payments made to the contractor as per the rules and regulations in force and in accordance with the Income Tax Act prevailing from time to time.
- 43.2 Corporate Tax liability, if any, shall be to the contractor's account.
- 43.3 Work Contract tax/ GST as may be applicable shall be deducted as per trade tax.
- 43.4 TDS, wherever applicable, shall be deducted as per applicable act/law/rule.

**43.4 MENTIONING OF PAN NO. IN INVOICE/BILL**

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.

Accordingly, supplier/ contractor/ service provider/ consultant should mention their PAN no. in their invoice/ bill for any transaction exceeding Rs. 2 lakhs. As provided in the notification, in case supplier/ contractor/ service provider/ consultant 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 fulfillment of above requirement

**44. SETTLEMENT OF DISPUTES BETWEEN GOVERNMENT DEPARTMENT AND ANOTHER AND ONE GOVERNMENT**

**DEPARTMENT AND PUBLIC ENTERPRISE AND ONE PUBLIC ENTERPRISE AND ANOTHER**

In the event of any dispute or difference relating to the interpretation and application of the provisions of the contracts, such dispute or difference shall be referred by either party for Arbitration to the sole Arbitrator in the Department of Public Enterprises to be nominated by the Secretary to the Government of India in-charge of the Department of Public Enterprises. The Arbitration and Conciliation Act, 1996 shall not be applicable to arbitrator under this clause. The award of the Arbitrator shall be binding upon the parties to the dispute, provided, however, any party aggrieved by such award may make a further reference for setting aside or revision of the award to the Law Secretary, Department of Legal Affairs, Ministry of Law & Justice, Government of India. Upon such reference the dispute shall be decided by the Law Secretary or the Special Secretary / Additional Secretary, when so authorized by the Law Secretary, whose decision shall bind the Parties finally and conclusively. The parties to the dispute will share equally the cost of arbitration as intimated by the Arbitrator.

**45 DISPUTE RESOLUTION (ADDENDUM TO PROVISION REGARDING APPLICABLE LAWS AND SETTLEMENT OF DISPUTES OF GCC)**

- 45.1 GAIL (India) Limited has framed the Conciliation Rules 2010 in conformity with supplementary to Part – III of the Indian Arbitration and Conciliation Act 1996 for speedier, cost effective and amicable settlement of disputes through conciliation. A copy of the said rules made available on GAIL's web site [www.gailonline.com](http://www.gailonline.com) for reference. Unless otherwise specified, the matters where decision of the Engineer-in-Charge is deemed to be final and binding as provided in the Agreement and the issues/disputes which cannot be mutually resolved within a reasonable time, all disputes shall be settled in accordance with the Conciliation Rules 2010.
- 45.2 Any dispute(s)/difference(s)/issue(s) of any kind whatsoever between/amongst the Parties arising under/out of/in connection with this contract shall be settled in accordance with the aforesaid rules.
- 45.3 In case of any dispute(s)/difference(s)/issue(s), a Party shall notify the other Party (ies) in writing about such a dispute(s) / difference(s) / issue(s) between / amongst the Parties and that such a Party wishes to refer the dispute(s)/difference(s)/issue(s) to Conciliation. Such Invitation for Conciliation shall contain sufficient information as to the dispute(s)/difference(s)/issue(s) to enable the other Party (ies) to be fully informed as to the nature of the dispute(s)/difference(s)/issue(s), the amount of monetary claim, if any, and apparent cause(s) of action.
- 45.4 Conciliation proceedings commence when the other Party(ies) accept(s) the invitation to conciliate and confirmed in writing. If the other Party (ies) reject(s) the invitation, there will be no conciliation proceedings.
- 45.5 If the Party initiating conciliation does not receive a reply within thirty days from the date on which he/she sends the invitation, or within such other period

of time as specified in the invitation, he/she may elect to treat this as a rejection of the invitation to conciliate. If he/she so elects, he/she shall inform the other Party(ies) accordingly.

- 45.6 Where Invitation for Conciliation has been furnished, the Parties shall attempt to settle such dispute(s) amicably under Part-III of the Indian Arbitration and Conciliation Act, 1996 and GAIL (India) Limited Conciliation Rules, 2010. It would be only after exhausting the option of Conciliation as an Alternate Dispute Resolution Mechanism that the Parties hereto shall go for Arbitration. For the purpose of this clause, the option of ‘Conciliation’ shall be deemed to have been exhausted, even in case of rejection of ‘Conciliation’ by any of the Parties.
- 45.7 The cost of Conciliation proceedings including but not limited to fees for Conciliator(s), Airfare, Local Transport, Accommodation, cost towards conference facility etc. shall be borne by the Parties equally.
- 45.8 The Parties shall freeze claim(s) of interest, if any, and shall not claim the same during the pendency of Conciliation proceedings. The Settlement Agreement, as and when reached/agreed upon, shall be signed between the Parties and Conciliation proceedings shall stand terminated on the date of the Settlement Agreement.

46.0 **INAM-PRO (PLATFORM FOR INFRASTRUCTURE AND MATERIALS PROVIDERS)**

INAM-Pro (Platform for infrastructure and materials providers) is a web based platform for infrastructure provides and materials suppliers and was developed by Ministry of Road Transport and Highways (MoRT&H) with a view to reduce project execution delays on account of supply shortages and inspire greater confidence in contractors to procure cement to start with directly from the manufacturers. Presently, numerous cement companies are registered in the portal and offering cement for sale on the portal with a commitment period of 3 years. These companies have bound themselves by ceiling rates for the entire commitment period, wherein they are allowed to reduce or increase their cement rates any number of times within the ceiling rate, but are not permitted to exceed the said ceiling rate.

MoRT&H is expanding the reach of this web-portal by increasing both the product width as well as the product depth. They are working on incorporating 60 plus product categories. The product range will span from large machineries like Earth Movers and Concrete Mixers, to even the smallest items like road studs. MoRT&H intend to turn it into a portal which services every infrastructure development related need of a modern contractor.

GGPL’s contractors may use this innovative platform, wherever applicable. The usage of web – Portal is a completely voluntary exercise. The platform, however, can serve as a benchmark for comparison of offered prices and products.

47. **PROMOTION OF PAYMENT THROUGH CARDS AND DIGITAL MEANS**

To promote cashless transactions, the onward payments by Contractors to their employees, service providers, sub-contractors and suppliers may be made through Cards and Digital means to the extent possible

48. **CONTRACTOR TO ENGAGE CONTRACT MANPOWER BELONGING TO SCHEDULED CASTES AND WEAKER SECTIONS OF THE SOCIETY**

While engaging the contractual manpower, Contractors are required to make efforts to provide opportunity of employment to the people belonging to Scheduled Castes and weaker sections of the society also in order to have a fair representation of these sections.

49. **QUARTERLY CLOSURE OF THE CONTRACT (FOR APPLICABILITY OF THIS CLAUSE REFER BDS):-**

During execution of contracts/orders, various issues may arise. In order to timely detect and to address the contractual issue (s) during the execution of contracts, GGPL has introduced a mechanism of quarterly closure of the contract, under which all the issues related to the contract execution will be monitored on quarterly basis for resolution.

Vendors/Contractors are required to co-operate with EIC for proper implementation of this mechanism for smooth execution of the contract.”

50. **PROVISIONS FOR STARTUPS (AS DEFINED IN GAZETTE NOTIFICATION NO. D.L-33004/99 DATED 18.02.2016 AND 23.05.2017 OF MINISTRY OF COMMERCE AND INDUSTRY AND AS AMENDED FROM TIME TO TIME) [FOR APPLICABILITY REFER BDS]**

As mentioned in Section-II, Prior turnover and prior experience shall not be required for all Startups [whether Micro & Small Enterprises (MSEs) or otherwise] subject to their meeting the quality and technical specifications specified in tender document. Further, the Startups are also exempted from submission of EMDs. For availing the relaxation, bidder is required to submit requisite certificate towards Startup enterprise registration issued by Department of Industrial Policy and Promotion, Ministry of Commerce and the certificate should be certified by the Chartered Accountant (not being an resource or a Director or not having any interest in the bidder's company/firm) and notary public with legible stamp. If a Startup [whether Micro & Small Enterprises (MSEs) or otherwise] gets qualified without turnover and experience criteria specified in tender and emerges lowest bidder, the order on such Startup shall be placed for entire tendered quantity/group/item/part wise as stated in tender. If a Startup emerge lowest bidder, the LoA on such Startup shall be placed for entire tendered quantity/group/item/part (as the case may be). However, during the Kick of Meeting monthly milestones/ check points

would be drawn. Further, the performance of such contractor/ service provider will be reviewed more carefully and action to be taken as per provision of contract in case of failure/ poor performance.

===== X =====

## Annexure-I

**PROCEDURE FOR ACTION IN CASE**  
**CORRUPT/FRAUDULENT/COLLUSIVE/COERCIVE PRACTICES**

**A Definitions:**

- A.1 “Corrupt Practice” means the offering, giving, receiving or soliciting, directly or indirectly, anything of value to improperly influence the actions in selection process or in contract execution.
- “Corrupt Practice” also includes any omission for misrepresentation that may mislead or attempt to mislead so that financial or other benefit may be obtained or an obligation avoided.
- A.2 “Fraudulent Practice” means and include any act or omission committed by a agency or with his connivance or by his agent by misrepresenting/ submitting false documents and/ or false information or concealment of facts or to deceive in order to influence a selection process or during execution of contract/ order.
- A.3 “Collusive Practice amongst bidders (prior to or after bid submission)” means a scheme or arrangement designed to establish bid prices at artificial non-competitive levels and to deprive the Employer of the benefits of free and open competition.
- A.4 “Coercive practice” means impairing or harming or threatening to impair or harm directly or indirectly, any agency or its property to influence the improperly actions of an agency, obstruction of any investigation or auditing of a procurement process.
- A.5 “Vendor/Supplier/Contractor/Consultant/Bidder” is herein after referred as “Agency”
- A.6 “Appellate Authority” shall mean Committee of Directors consisting of Director (Finance) and Director (BD) for works centers under Director (Projects). For all other cases committee of Directors shall consist of Director (Finance) & Director (Projects).
- A.7 “Competent Authority” shall mean the authority, who is competent to take final decision for Suspension of business dealing with an Agency/ (ies) and Banning of business dealings with Agency/ (ies) and shall be the “Director” concerned.
- A.8 “Allied Agency” shall mean all the concerns within the sphere of effective influence of banned/ suspended agencies. In determining this, the following factors may be taken into consideration:
- (a) Whether the management is common;
  - (b) Majority interest in the management is held by the partners or directors of banned/ suspended firm.
  - (c) substantial or majority shares are owned by banned/ suspended agency and by virtue of this it has a controlling voice.
- A.9 “Investigating Agency” shall mean any department or unit of GAIL investigating into the conduct of Agency/ party and shall include the Vigilance

Department of the GAIL, Central Bureau of Investigation, State Police or any other agency set up by the Central or state government having power to investigate.

**B Actions against bidder(s) indulging in corrupt /fraudulent/ collusive/ coercive practice**

**B.1 Irregularities noticed during the evaluation of the bids :**

If it is observed during bidding process/ bids evaluation stage that a bidder has indulged in corrupt/fraudulent /collusive/coercive practice, the bid of such Bidder (s) shall be rejected and its Earnest Money Deposit (EMD) shall be forfeited.

Further, such agency shall be banned for future business with GGPL for a period specified in para B 2.2 below from the date of issue of banning order.

**B.2 Irregularities noticed after award of contract**

**(i) During execution of contract:**

If an agency, is found to have indulged in corrupt/fraudulent/collusive/coercive practices, during execution of contract, the agency shall be banned for future business with GGPL for a period specified in para B 2.2 below from the date of issue of banning order.

The concerned order (s)/ contract(s) where corrupt/fraudulent/collusive practices is observed, shall be suspended with immediate effect by Engineer-in-Charge (EIC)/ Employer whereby the supply/ work/ service and payment etc. will be suspended. The action shall be initiated for putting the agency on banning.

After conclusion of process, the order (s)/ contract (s) where it is concluded that such irregularities have been committed shall be terminated and Contract cum Performance Bank Guarantee (CPBG)/ Contract Performance Security(CPS) submitted by agency against such order (s)/ contract (s) shall also be forfeited. The amount that may have become due to the contractor on account of work already executed by him shall be payable to the contractor and this amount shall be subject to adjustment against any amounts due from the contractor under the terms of the contract.

No risk and cost provision will be enforced in such cases.

**(ii) After execution of contract and during Defect liability period (DLP)/ Warranty/Guarantee Period:**

If an agency is found to have indulged in corrupt/fraudulent/collusive/coercive practices, after execution of contract and during DLP/

Warranty/Guarantee Period, the agency shall be banned for future business with GAIL for a period specified in para B 2.2 below from the date of issue of banning order.

Further, the Contract cum Performance Bank Guarantee (CPBG)/Contract Performance Security (CPS) submitted by agency against such order (s)/ contract (s) shall be forfeited.

**(iii) After expiry of Defect liability period (DLP)/ Warranty/Guarantee Period**

If an agency is found to have indulged in corrupt/fraudulent/collusive/coercive practices, after expiry of Defect liability period (DLP)/ Warranty/Guarantee Period, the agency shall be banned for future business with GGPL for a period specified in para B 2.2 below from the date of issue of banning order.

**B.2.2 Period of Banning**

Banning period shall be reckoned from the date of banning order and shall be 3 years.

In exceptional cases where the act of vendor/ contractor is a threat to the National Security, the banning shall be for indefinite period.

**C Effect of banning on other ongoing contracts/ tenders**

C.1 If an agency is put on Banning, such agency should not be considered in ongoing tenders/future tenders.

C.2 However, if such an agency is already executing other order (s)/ contract (s) where no corrupt/fraudulent/ collusive/coercive practice is found, the agency should be allowed to continue till its completion without any further increase in scope except those incidental to original scope mentioned in the contract.

C.3 If an agency is put on the Banning List during tendering and no irregularity is found in the case under process:

C.3.1 after issue of the enquiry /bid/tender but before opening of Technical bid, the bid submitted by the agency shall be ignored.

C.3.2 after opening Technical bid but before opening the Price bid, the Price bid of the agency shall not be opened and BG/EMD submitted by the agency shall be returned to the agency.

C.3.3 after opening of price, BG/EMD made by the agency shall be returned; the offer of the agency shall be ignored & will not be further evaluated. If the agency is put on banning list for fraud/ mis-appropriation of facts committed in the same tender/other tender where errant agency emerges as the lowest (L1), then such tender shall also be cancelled and re-invited.

**D. Procedure for Suspension of Bidder**

**D.1 Initiation of Suspension**

Action for suspension business dealing with any agency/(ies) shall be initiated by Corporate C&P Department when

- (i) Corporate Vigilance Department based on the fact of the case gathered during investigation by them recommend for specific immediate action against the agency.
- (ii) Corporate Vigilance Department based on the input from Investigating agency, forward for specific immediate action against the agency.
- (iii) Non performance of Vendor/Supplier/Contractor/Consultant leading to termination of Contract/ Order.

**D.2 Suspension Procedure:**

- D.2.1 The order of suspension would operate initially for a period not more than six months and is to be communicated to the agency and also to Corporate Vigilance Department. Period of suspension can be extended with the approval of the Competent Authority by one month at a time with a ceiling of six months pending a conclusive decision to put the agency on banning list.
- D.2.2 During the period of suspension, no new business dealing may be held with the agency.
- D.2.3 Period of suspension shall be accounted for in the final order passed for banning of business with the agency.
- D.2.4 The decision regarding suspension of business dealings should also be communicated to the agency.
- D.2.5 If a prima-facie, case is made out that the agency is guilty on the grounds which can result in banning of business dealings, proposal for issuance of suspension order and show cause notice shall be put up to the Competent Authority. The suspension order and show cause notice must include that (i) the agency is put on suspension list and (ii) why action should not be taken for banning the agency for future business from GAIL.

The competent authority to approve the suspension will be same as that for according approval for banning.

**D 3 Effect of Suspension of business:**

Effect of suspension on other on-going/future tenders will be as under:

- D.3.1 No enquiry/bid/tender shall be entertained from an agency as long as the name of agency appears in the Suspension List.
- D.3.2 If an agency is put on the Suspension List during tendering:

- D.3.2.1 after issue of the enquiry /bid/tender but before opening of Technical bid, the bid submitted by the agency shall be ignored.
- D.3.2.2 after opening Technical bid but before opening the Price bid, the Price bid of the agency shall not be opened and BG/EMD submitted by the agency shall be returned to the agency.
- D.3.2.3 after opening of price, BG/EMD made by the agency shall be returned; the offer of the agency shall be ignored & will not be further evaluated. If the agency is put on Suspension list for fraud/ mis-appropriation of facts conducted in the same tender/other tender where errant agency emerges as the lowest (L1), then such tender shall also be cancelled and re-invited.
- D.3.3 The existing contract (s)/ order (s) under execution shall continue.
- D.3.4 Tenders invited for procurement of goods, works and services shall have provision that the bidder shall submit a undertaking to the effect that (i) neither the bidder themselves nor their allied agency/(ies) are on banning list of GAIL or the Ministry of Petroleum and Natural Gas and (ii) bidder is not banned by any Government department/ Public Sector.
- F. Appeal against the Decision of the Competent Authority:**
- F.1 The agency may file an appeal against the order of the Competent Authority for putting the agency on banning list. The appeal shall be filed to Appellate Authority. Such an appeal shall be preferred within one month from the of receipt of banning order.
- F.2 Appellate Authority would consider the appeal and pass appropriate order which shall be communicated to the party as well as the Competent Authority.
- F.3 Appeal process may be completed within 45 days of filing of appeal with the Appellate Authority.
- G. Wherever there is contradiction with respect to terms of 'Integrity pact' , GCC and 'Procedure for action in case of Corrupt/Fraudulent/ Collusive/Coercive Practice', the provisions of 'Procedure for action in case of Corrupt/Fraudulent/ Collusive/Coercive Practice' shall prevail.

**Annexure-II**

**PROCEDURE FOR EVALUATION OF PERFORMANCE OF VENDORS/  
SUPPLIERS/ CONTRACTORS/ CONSULTANTS**

**1.0 OBJECTIVE**

The objective of Evaluation of Performance aims to recognize, and develop reliable Vendors/ Suppliers/Contractors/ Consultants so that they consistently meet or exceed expectations and requirements.

The purpose of this procedure is to put in place a system to monitor performance of Vendors/ Suppliers/Contractors/ Consultants associated with GGPL in Projects and in O&M so as to ensure timely completion of various projects, timely receipt of supplies including completion of works & services for operation and maintenance of operating plants and quality standards in all respects.

## **2.0 METHODOLOGY**

### **i) Preparation of Performance Rating Data Sheet**

Performance rating data Sheet for each and every Vendor/ Supplier/Contractor/ Consultant for all orders/Contracts with a value of Rs. 7 Lakhs and above is recommended to be drawn up. These data sheets are to be separately prepared for orders/ contracts related to Projects and O&M. Format, Parameters, Process, responsibility for preparation of Performance Rating Data Sheet are separately mentioned.

### **ii) Measurement of Performance**

Based on the parameters defined in Data Sheet, Performance of concerned Vendor/ Supplier/Contractor/ Consultant would be computed and graded accordingly. The measurement of the performance of the Party would be its ability to achieve the minimum scoring of 60% points in the given parameters.

### **iii) Initiation of Measures:**

Depending upon the Grading of Performance, corrective measures would be initiated by taking up the matter with concerned Vendor/ Supplier/Contractor/ Consultant. Response of Vendor/ Supplier/Contractor/ Consultant would be considered before deciding further course of action.

### **iv) Implementation of Corrective Measures:**

Based on the response of Vendor/ Supplier/Contractor/ Consultant, concerned Engineer-in-Charge for the Projects and/or OIC in case of O&M would recommend for continuation or discontinuation of such party from the business of GGPL.

### **v) Orders/contracts placed on Proprietary/OEM basis for O&M will be evaluated and, if required, corrective action will be taken for improvement in future.**

## **3.0 PROCESS OF EVALUATION OF PERFORMANCE OF VENDORS/ SUPPLIERS/ CONTRACTORS/ CONSULTANTS**

### **3.1 FOR PROJECTS**

- i) Evaluation of performance of Vendors/ Suppliers/Contractors/ Consultants in case of PROJECTS shall be done immediately with commissioning of any Project.
- ii) On commissioning of any Project, EIC (Engineer-in-charge)/ Project-in-charge shall prepare a Performance Rating Data Sheet (Format at Annexure-1) for all Orders and Contracts.
- iii) Depending upon the Performance Rating, following action need to be initiated by Engineer-in-charge/Project-in-charge:

Sl.No.	Performance Rating	Action
1	POOR	Seek explanation for Poor performance
2	FAIR	Seek explanation for Fair performance
3	GOOD	Letter to the concerned for improving performance in future
4	VERY GOOD	No further action

- iv) Reply from concerned Vendor/ Supplier/Contractor/ Consultant shall be examined. In case of satisfactory reply, Performance Rating data Sheet to be closed with a letter to the concerned for improving performance in future.
- v) When no reply is received or reasons indicated are unsatisfactory, the following actions need to be taken:

**A) Where Performance rating is “POOR”:**

Recommend such defaulting Vendor/ Supplier/Contractor/ Consultant for putting on Holiday for a period from one to three years as given below:

- (i) Poor Performance due to reasons other than Quality : **One Year**
- (ii) Poor Performance on account of Quality (if any mark obtained against Quality parameter is less than 30): **Two Years**
- (iii) Poor Performance leading to termination of contract or Offloading of contract due to poor performance solely attributable to Vendor/ Supplier/Contractor/ Consultant or Repeated Offence: **Three Years**

Non performance of a Vendor/Supplier/Contractor/Consultant leading to termination of Contract/ Order, such Vendor/ Supplier/ Contractor/Consultant are also to be considered for Suspension.

In all such cases, concerned site will put up recommendation for issuance of SCN and putting the party on suspension list as per process defined for suspension in “Procedure for Action in case of Corrupt/ Fraudulent/ Collusive/ Coercive Practices”

(B) Where Performance rating is “FAIR”:

Recommend for issuance of warning to such defaulting Vendor/ Supplier/Contractor/ Consultant to improve their performance.

### 3.2 FOR CONSULTANCY JOBS

Monitoring and Evaluation of consultancy jobs will be carried out in the same way as described in para 3.1 for Projects.

### 3.3 FOR OPERATION & MAINTENANCE

- i) Evaluation of performance of Vendors/ Suppliers/Contractors/ Consultants in case of Operation and Maintenance shall be done immediately after execution of order/ contract.
- ii) After execution of orders a Performance Rating Data Sheet (Format at Annexure-2) shall be prepared for Orders by Site C&P and for Contracts/Services by respective Engineer-In-Charge.
- iii) Depending upon Performance Rating, following action need to be initiated by Site C&P:

Sl. No.	Performance Rating	Action
1	<b>POOR</b>	Seek explanation for Poor performance
2.	<b>FAIR</b>	Seek explanation for Fair performance
3	<b>GOOD</b>	Letter to the concerned for improving performance in future.
4	<b>VERY GOOD</b>	No further action

- iv) Reply from concerned Vendor/ Supplier/Contractor/ Consultant shall be examined. In case of satisfactory reply, Performance Rating data Sheet to be closed with a letter to the concerned for improving performance in future.
- v) When no reply is received or reasons indicated are unsatisfactory, the following actions need to be taken:
  - A) Where performance rating is “POOR”

Recommend such defaulting Vendor/Supplier/Contractor/Consultant for putting on Holiday for a period from one to three years as given below:

- (i) Poor Performance due to reasons other than Quality : **One Year**
- (ii) Poor Performance on account of Quality (if any mark obtained against Quality parameter is less than 30): **Two Years**
- (iv) Poor Performance leading to termination of contract or Offloading of contract due to poor performance solely attributable to Vendor/Supplier/Contractor/Consultant or Repeated Offence: **Three Years**

Non-performance of a Vendor/Supplier/Contractor/Consultant leading to termination of Contract/ Order such Vendor/ Supplier/ Contractor/Consultant are also to be considered for Suspension.

In all such cases, concerned site will put up recommendation for issuance of SCN and putting the party on suspension list as per process defined for suspension in “Procedure for Action in case of Corrupt/ Fraudulent/ Collusive/ Coercive Practices”

(B) Where Performance rating is “FAIR”

Recommend for issuance of warning to such defaulting Vendors/Contractors/Consultants to improve their performance.

4.0 **EXCLUSIONS:**

The following would be excluded from the scope of evaluation of performance of Vendors/ Suppliers/Contractors/ Consultants:

- i) Orders/Contracts below the value of Rs. 7 Lakhs.
- ii) One time Vendor/ Supplier/Contractor/ Consultant.
- iii) Orders for Misc./Administrative items/ Non stock Non valued items.

However, concerned Engineer-in-Charge /OICs will continue to monitor such cases so as to minimize the impact on Projects/O&M plants due to non performance of Vendors/ Suppliers/Contractors/ Consultants in all such cases.

5.0 **REVIEW & RESTORATION OF PARITES PUT ON HOLIDAY**

- 5.1 An order for Holiday passed for a certain specified period shall deemed to have been automatically revoked on the expiry of that specified period and it will not be necessary to issue a specific formal order of revocation.

Further, in case Vendor/ Supplier/Contractor/ Consultant is put on holiday due to quality, and new order is placed on bidder after restoration of Vendor/ Supplier/Contractor/ Consultant, such order will be properly monitored during execution stage by the concerned site.

## **6.0 EFFECT OF HOLIDAY**

6.1 If a Vendor/ Supplier/Contractor/ Consultant is put on Holiday, such Vendor/ Supplier/Contractor/ Consultant should not be considered in ongoing tenders/future tenders.

6.2 However, if such Vendor/ Supplier/Contractor/ Consultant is already executing any other order/ contract and their performance is satisfactory in terms of the relevant contract, should be allowed to continue till its completion without any further increase in scope except those incidental to original scope mentioned in the contract. In such a case CPBG will not be forfeited and payment will be made as per provisions of concerned contract. However, this would be without prejudice to other terms and conditions of the contract.

6.3. Effect on other ongoing tendering:

6.3.1 After issue of the enquiry /bid/tender but before opening of Technical bid, the bid submitted by the party shall be ignored.

6.3.2 after opening Technical bid but before opening the Price bid, the Price bid of the party shall not be opened and BG/EMD submitted by the party shall be returned to the party.

6.3.3 after opening of price, BG/EMD made by the party shall be returned; the offer of the party shall be ignored & will not be further evaluated. If errant party emerges as the lowest (L1), then such tender shall also be cancelled and re-invited.

7.0 While putting the Vendor/ Supplier/Contractor/ Consultant on holiday as per the procedure, the holding company, subsidiary, joint venture, sister concerns, group division of the errant Vendor/ Supplier/Contractor/ Consultant shall not be considered for putting on holiday list.

Any bidder, put on holiday, will not be allowed to bid through consortium route also in new tender during the period of holiday.

8.0 If an unsuccessful bidder makes any vexatious, frivolous or malicious complaint against the tender process with the intention of delaying or defeating any procurement or causing loss to GAIL or any other bidder, such bidder will be put on holiday for a period of six months, if such complaint is proved to be vexatious, frivolous or malicious, after following the due procedure.

**9. APPEAL AGAINST THE DECISION OF THE COMPETENT AUTHORITY:**

- (a) The party may file an appeal against the order of the Competent Authority for putting the party on Holiday list. The appeal shall be filed to Appellate Authority. Such an appeal shall be preferred within one month from the of receipt of Holiday order.
- (b) Appellate Authority would consider the appeal and pass appropriate order which shall be communicated to the party as well as the Competent Authority.
- (c) Appeal process may be completed within 45 days of filing of appeal with the Appellate Authority.
- (d) “Appellate Authority” shall mean Committee of Directors consisting of Director (Finance) and Director (BD) for works centers under Director (Projects). For all other cases committee of Directors shall consist of Director (Finance) & Director (Projects).

**10. ERRANT BIDDER**

In case after price bid opening the lowest evaluated bidder (L1) is not awarded the job for any mistake committed by him in bidding or withdrawal of bid or modification of bid or varying any term in regard thereof leading to re-tendering, GGPL shall forfeit EMD paid by the bidder and such bidders shall be debarred from participation in re-tendering of the same job(s)/item(s).

Further, such bidder will be put on holiday for a period of six months after following the due procedure.

- 11. In case GST department brings to the notice of GGPL that a Party has not paid to the credit of the Government the GST collected from GGPL, then party will be put on holiday for a period of six months after following the due procedure.

**Annexure-1**

**GGPL  
PERFORMANCE RATING DATA SHEET  
(FOR PROJECTS/ CONSULTANCY JOBS)**

- i) Project/Work Centre :
- ii) Order/ Contract No. & date :
- iii) Brief description of Items :  
Works/Assignment
- iv) Order/Contract value (Rs.) :
- v) Name of Vendor/Supplier/ :

Contractor/ Consultant

vi) Contracted delivery/ Completion Schedule :

vii) Actual delivery/ Completion date :

Performance Parameter	Delivery/ Completion Performance	Quality Performance	Reliability Performance#	Total
Maximum Marks	40	40	20	100
Marks Allocated				

Note:

Remarks (if any)

### PERFORMANCE RATING (\*\*)

Note :

(#) Vendor/Supplier/Contractor/Consultant who seek repeated financial assistance or deviation beyond contract payment term or seeking direct payment to the sub-vendor/sub-contractor due to financial constraints, then '0' marks should be allotted against Reliability Performance.

(\*) Allocation of marks should be as per enclosed instructions

(\*\*) Performance rating shall be classified as under :

Sl. No.	Range (Marks)	Rating
1	60 & below	POOR
2	61-75	FAIR
3	76-90	GOOD
4	More than 90	VERY GOOD

Signature of Authorised Signatory:

Name:

Designation:

### Instructions for allocation of marks

1. Marks are to be allocated as under :

#### 1.1 DELIVERY/ COMPLETION PERFORMANCE 40 Marks

Delivery Period/ Completion Schedule	Delay in Weeks	Marks
a) Upto 3 months	Before CDD	40
	Delay upto 4 weeks	35
	" 8 weeks	30
	" 10 weeks	25
	" 12 weeks	20

	” 16 weeks	15
	More than 16 weeks	0
b) Above 3 months	Before CDD	40
	Delay upto 4 weeks	35
	” 8 weeks	30
	” 10 weeks	25
	” 16 weeks	20
	” 20 weeks	15
	” 24 weeks	10
	More than 24 weeks	0

## 1.2 QUALITY PERFORMANCE

**40 Marks**

For Normal Cases : No Defects/ No Deviation/ No failure: 40 marks

i) Rejection/Defects	Marks to be allocated on	10 marks
	Pro-rata basis for acceptable	
	Quantity as compared to total	
	Quantity for normal cases	
ii) When quality	Failure of severe nature	0 marks
failure endanger	- Moderate nature	5 marks
system integration	- low severe nature	10-25 marks
and safety of the		
system		
iii) Number of	1. No deviation	5 marks
deviations	2. No. of deviations $\leq 2$	2 marks
	3. No. of deviations $> 2$	0 marks

## 1.3 RELIABILITY PERFORMANCE

**20 Marks**

A.	FOR WORKS/CONTRACTS	
i)	Submission of order acceptance, agreement, PBG, Drawings and other documents within time	4 marks
ii)	Mobilization of resources as per Contract and in time	4 marks
iii)	Liquidation of Check-list points	4 marks
iv)	Compliance to statutory and HS&E	4 marks

	requirements  or  Reliability of Estimates/Design/Drawing etc. in case of Consultancy jobs	
v)	Timely submission of estimates and other documents for Extra, Substituted & AHR items	4 marks
<b>B.</b>	<b>FOR SUPPLIES</b>	
i)	Submission of order acceptance, PBG, Drawings and other documents within time	5 marks
ii)	Attending complaints and requests for after sales service/ warranty repairs and/ or query/ advice (upto the evaluation period).	5 marks
iii)	Response to various correspondence and conformance to standards like ISO	5 marks
iv)	Submission of all required documents including Test Certificates at the time of supply	5 marks

**Annexure-2**

**GGPL  
PERFORMANCE RATING DATA SHEET  
(FOR O&M)**

- i) Location :
- ii) Order/ Contract No. & date :
- iii) Brief description of Items :  
Works/Assignment
- iv) Order / Contract value (Rs.) :
- v) Name of Vendor/Supplier/ :  
Contractor/ Consultant
- vi) Contract delivery/ :  
Completion Schedule

vii) Actual delivery/ :  
Completion date

Performance Parameter	Delivery Performance	Quality Performance	Reliability Performance#	Total
Maximum Marks	40	40	20	100
Marks Allocated (*)				

Remarks (if any)

**PERFORMANCE RATING (\*\*)**

Note :

- (#) Vendor/Supplier/Contractor/Consultant who seek repeated financial assistance or deviation beyond contract payment term or seeking direct payment to the sub-vendor/sub-contractor due to financial constraints, then '0' marks should be allotted against Reliability Performance
- (\*) Allocation of marks should be as per enclosed instructions
- (\*\*) Performance rating shall be classified as under :

Sl. No.	Range (Marks)	Rating
1	60 & below	POOR
2	61-75	FAIR
3	76-90	GOOD
4	More than 90	VERY GOOD

Signature of  
Authorised Signatory:

Name:

Designation:

**Instructions for allocation of marks (For O&M)**

1. Marks are to be allocated as under :

**1.1 DELIVERY/ COMPLETION PERFORMANCE 40 Marks**

Delivery Period/ Completion Schedule	Delay in Weeks	Marks
a) Upto 3 months	Before CDD	40
	Delay upto 4 weeks	35
	" 8 weeks	30
	" 10 weeks	25
	" 12 weeks	20
	" 16 weeks	15
	More than 16 weeks	0

b) Above 3 months	Before CDD	40
	Delay upto 4 weeks	35
	" 8 weeks	30
	" 10 weeks	25
	" 16 weeks	20
	" 20 weeks	15
	" 24 weeks	10
	More than 24 weeks	0

## 1.2 QUALITY PERFORMANCE 40 Marks

For Normal Cases : No Defects/ No Deviation/ No failure: 40 marks

i) Rejection/Defects	Marks to be allocated on prorata basis for acceptable quantity as compared to total quantity for normal cases	10 marks
ii) When quality failure endanger system integration and safety of the system	Failure of severe nature - Moderate nature - low severe nature	0 marks 5 marks 10-25 marks
iii) Number of deviations	1. No deviation 2. No. of deviations $\leq 2$ 3. No. of deviations $> 2$	5 marks 2 marks 0 marks

## 1.3 RELIABILITY PERFORMANCE 20 Marks

A.	FOR WORKS/CONTRACTS	
i)	Submission of order acceptance, agreement, PBG, Drawings and other documents within time	4 marks
ii)	Mobilization of resources as per Contract and in time	4 marks
iii)	Liquidation of Check-list points	4 marks
iv)	Compliance to statutory and HS&E requirements or	4 marks

	Reliability of Estimates/Design/Drawing etc. in case of Consultancy jobs	
v)	Timely submission of estimates and other documents for Extra, Substituted & AHR items	4 marks
<b>B.</b>	<b>FOR SUPPLIES</b>	
i)	Submission of order acceptance, PBG, Drawings and other documents within time	5 marks
ii)	Attending complaints and requests for after sales service/ warranty repairs and/ or query/ advice (upto the evaluation period).	5 marks
iii)	Response to various correspondence and conformance to standards like ISO	5 marks
iv)	Submission of all required documents including Test Certificates at the time of supply	5 marks

**ANNEXURE-IV****BIDDING DATA SHEET (BDS)****ITB TO BE READ IN CONJUNCTION WITH THE FOLLOWING:**

<b>A. GENERAL</b>	
<b>ITB clause</b>	<b>Description</b>
<b>1.2</b>	The Invitation for Bids/ Tender no is : <b>GGPL/KKD/C&amp;P/PR 2044/2019-20/11.</b>
<b>1.1</b>	The Employer/Owner is: <b>Godavari Gas Private Limited,</b>
<b>2.1</b>	The name of the Works/Services to be performed is: <b>Supply of CNG Electric Motor driven Integrated Compressor Package for GGPL</b>
<b>3</b>	<b>BIDS FROM CONSORTIUM/JOINT VENTURE : NOT APPLICABLE</b>
<b>5.2.1</b>	Demand Draft/ Banker's Cheque towards Tender fee (if applicable) shall be in favour of <b>Godavari Gas Private Limited</b> payable at Rajamahendravaram, E.G Dist Andhra Pradesh
<b>B. BIDDING DOCUMENT</b>	
<b>ITB clause</b>	<b>Description</b>
<b>8.1</b>	For <b><u>clarification purposes</u></b> only, the communication address is: Attention: Ramesh Naik A, CM (C&P) Street Address: Registered office: #85-06-23/2, 2nd Floor, Morampudi Junction, Near Indian Oil Petrol Bunk, Rajahmundry East Godavari - 533107 A.P. INDIA. Email: rameshna@gail.co.in/jayasree.d@apgcd.com/kavya.gorle@apgcd.in
<b>C. PREPARATION OF BIDS</b>	
<b>ITB clause</b>	<b>Description</b>
<b>11.1.1 (u)</b>	The Bidder shall submit with its Techno-commercial/ Un priced bid the following additional documents (SCC Refers): Integrity Pact

<b>12</b>	Additional Provision for Schedule of Rate/ Bid Price are as under: NIL
<b>12. &amp; 13</b>	Whether GGPL will be able to avail input tax credit in the instant tender: <b>NO</b>
<b>14</b>	The currency of the Bid shall be INR
<b>15</b>	The bid validity period shall be 3 Months from final 'Bid Due Date'.
<b>16.1</b>	In case ' <b>Earnest Money / Bid Security</b> ' is in the form of ' <b>Demand Draft</b> ' or ' <b>Banker's Cheque</b> ', the same should be favor of <b>Godavari Gas Private Limited</b> payable at Rajamahendravaram, E.G Dist Andhra Pradesh. Details of GGPL's Bank is Canara Bank, Hyderabad Industrial Finance Branch, A/C No. 2423201000324, IFSC Code: CNRB0002423
<b>D. SUBMISSION AND OPENING OF BIDS</b>	
<b>ITB clause</b>	<b>Description</b>
<b>18</b>	In addition to the original of the Bid, the number of copies required is one.
<b>22</b>	The E-Tender No. of this bidding process is: <b><u>Not applicable</u></b>
<b>22.3 and 4.0 of IFB</b>	For <b><u>bid submission purposes</u></b> only (Manual) or the submission of physical document as per clause no. 4.0 of IFB, the Owner's address is : Attention: Ramesh Naik A, CM (C&P) Street Address: Registered office: #85-06-23/2, 2nd Floor, Morampudi Junction, Near Indian Oil Petrol Bunk, Rajahmundry East Godavari - 533107 A.P. INDIA. Email: <a href="mailto:rameshna@gail.co.in">rameshna@gail.co.in</a> / <a href="mailto:jayasree.d@apgdc.com">jayasree.d@apgdc.com</a> / <a href="mailto:kavya.gorle@apgdc.in">kavya.gorle@apgdc.in</a>
<b>26</b>	<b>The bid opening shall take place at:</b> <b>Godavari Gas Private Limited</b> Attention: Registered office: #85-06-23/2, 2nd Floor, Morampudi Junction, Near Indian Oil Petrol Bunk, Rajahmundry East Godavari - 533107 A.P. INDIA. Email: <a href="mailto:rameshna@gail.co.in">rameshna@gail.co.in</a> <b>Date: 18.12.2019/ Time: 15:00 Hrs</b>
<b>E. EVALUATION, AND COMPARISON OF BIDS</b>	

ITB clause	Description
32	Evaluation Methodology is mentioned in Section-II.
33	Compensation for Extended Stay: <b>NOT APPLICABLE</b>
40	Public Procurement policy for Micro and Small Enterprises: <b>APPLICABLE</b>
50	Provisions for Start-Ups: <b>NOT APPLICABLE</b>
<b>F. AWARD OF CONTRACT</b>	
ITB clause	Description
37	State of which stamp paper is required for Contract Agreement: <b>Andhra Pradesh</b>
38	Contract Performance Security/ Security Deposit : <b>Applicable</b> <b>If applicable:</b> 10% of Contract/Order value within 30 days of award or 5% of Contract/Order value within 30 days of award and balance to be deducted against each RA bills till balance 5% is deducted/for supply, it is to be deducted from the invoice. This deducted amount can be released/deduction can be stopped against submission of bank guarantee of equivalent amount.
40	Whether tendered item is split able or divisible : <b>NO</b>
41	Provision of AHR Item : <b>Not Applicable</b>
Clause no. 27.3 of GCC	Bonus for Early Completion: <b>Not Applicable</b>

# **FORMS & FORMAT**

**LIST OF FORMS & FORMAT**

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F-20	INTEGRITY PACT
F-21	INDEMNITY BOND

**TENDER NO: GGPL/KKD/C&P/PR 2044/2019-20/11**

**F-1**

**BIDDER'S GENERAL INFORMATION**

To,  
M/s GGPL  
Rajahmahendravaram

TENDER NO:

1	Bidder Name	
2	Status of Firm	Proprietorship Firm/Partnership firm/ Limited/Others If Others Specify: _____ [Enclose certificate of Registration]
3	Name of Proprietor/Partners/Directors of the firm/company	
4	Number of Years in Operation	
5	Address of Registered Office:  *In case of Partnership firm, enclose letter mentioning current address of the firm and the full names and current addresses of all the partners of the firm.	<div>City:</div> <div>District:</div> <div>State:</div> <div>PIN/ZIP:</div>
6	Operation Address (if different from above)	<div>City:</div> <div>District:</div> <div>State:</div> <div>PIN/ZIP:</div>
8	Telephone Number	_____ (Country Code) (Area Code) (Telephone No.)
9	E-mail address	
10	Website	
11	Fax Number:	_____ (Country Code) (Area Code) (Telephone No.)

**TENDER NO: GGPL/KKD/C&P/PR 2044/2019-20/11**

12	ISO Certification, if any	{ If yes, please furnish details }
13	Bid Currency	
14	Banker's Name	
15	Branch	
17	Bank account number	
18	PAN No.	[Enclose copy of PAN Card]
19	GST no.	[Enclose copy of GST Registration Certificate]
20	EPF Registration No.	[Enclose copy of EPF Registration Certificate]
21	ESI code No.	[Enclose copy of relevant document]
22	We (Bidder) are cover under the definition of section 2 (n) of the MSMED Act	Yes / No <i>(If the response to the above is 'Yes', Bidder to provide Purchaser a copy of the Entrepreneurs Memorandum (EM) filled with the authority specified by the respective State Government.)</i>
23	Whether Micro/Small/Medium Enterprise	(Bidder to submit documents as specified it ITB)
24	Type of Entity	Corporate/ Non-Corporate (As per Service tax Act). (In case of Non-Corporate Entity, bidder will submit documentary evidence for same).

Place:

Date:

[Signature of Authorized Signatory of Bidder]

Name:

Designation:

Seal:

**TENDER NO: GGPL/KKD/C&P/PR 2044/2019-20/11**

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**F-2**  
**BID FORM**

To,

M/s Godavari Gas Private Limited  
Rajahmahendravaram

SUB:

TENDER NO:

Dear Sir,

After examining / reviewing the Bidding Documents for the tender of  
“\_\_\_\_\_” including  
"Specifications & Scope of Work", "General Conditions of Contract [GCC]", "Special  
Conditions of Contract [SCC]" and "Schedule of Rates [SOR]", etc. the receipt of which is  
hereby duly acknowledged, we, the undersigned, are pleased to offer to execute the whole  
part of the job and in conformity with the said Bid Documents, including Addenda /  
Corrigenda Nos. \_\_\_\_\_.

We confirm that this Bid is valid for a period as specified in BDS from the date of opening of  
"Techno-Commercial / Un-priced Bid", and it shall remain binding upon us and may be  
accepted by any time before the expiry of that period.

If our Bid is accepted, we will provide the "Contract Performance Security / Security  
Deposit" equal to "\_\_\_\_\_ of the Contract Price" or as mentioned in Tender Document  
for the due performance within "thirty [30] days" of such Award.

Until a final Agreement/Letter of Award is prepared and executed, the tender document  
(including addenda/ corrigenda) together with the "Notification of Award" shall constitute a  
binding Agreement between us.

We understand that Bidding Document is not exhaustive and any action and activity not  
mentioned in Bidding Documents but may be inferred to be included to meet the intend of the  
Bidding Documents shall be deemed to be mentioned in Bidding Documents unless otherwise  
specifically excluded and we confirm to perform for fulfillment of Agreement and  
completeness of the Work in all respects within the time frame and agreed price.

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

Place:

Date:

[Signature of Authorized Signatory of Bidder]

Name:

Designation:

Seal:

**F-3**  
**LIST OF ENCLOSURES**

To,

M/s Godavari Gas Private Limited  
Rajahmahendravaram

SUB:

TENDER NO:

**Dear Sir,**

We are enclosing the following documents as part of the bid:

1. Power of Attorney of the signatory to the Bidding Document.
2. Document showing annual turnover for the last three years such as annual reports, profit and loss account, net worth etc. along with information as sought in enclosed format F-16
3. Document showing Financial Situation Information as sought in enclosed format F-16
4. Copy of Bidding Documents along with addendum/corrigendum duly signed and sealed on each page, in token of confirmation that Bid Documents are considered in full while preparing the bid and in case of award, work will be executed in accordance with the provisions detailed in Bid Documents.
5. Documentary Evidences showing the Bidder's claim of meeting Technical Criteria as mentioned in Clause 4 of ITB.
6. Bid Security/EMD\*
7. Tender Fee\*
8. Integrity Pact\*
9. Power of Attorney\*
10. Duly certified document from chartered engineer and or chartered accountant.

Note:

\* In case of e-bidding the bidder has the option to submit specified documents in physical form on/before the bid due date or within seven days from the bid opening date. However, scanned copy of these (same) documents must be submitted on-line as part of e-bid before the bid due date/time.

Place:

[Signature of Authorized Signatory of Bidder]

Date:

Name:

Designation:

Seal:

TENDER NO: GGPL/KKD/C&P/PR 2044/2019-20/11

**FORMAT F-4**

**PROFORMA OF "BANK GUARANTEE"**  
**FOR "EARNEST MONEY / BID SECURITY"**

(To be stamped in accordance with the Stamp Act)

Ref.....

Bank Guarantee No.....

Date.....

To,

M/s Godavari Gas Private Limited  
D. No.: 85-06-23/2, 2nd Floor, Above Happy Home Furniture Shop,  
40th Ward, Morumpudi Junction,  
Rajamahendravaram – 533103  
East Godavari Dist, Andhra Pradesh

SUB:

TENDER NO:

**Dear Sir(s),**

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

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

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

This guarantee shall be irrevocable and shall remain valid up to \_\_\_\_\_ [this date should be two (02) months beyond the validity of the bid]. If any further extension of this guarantee is required, the same shall be extended to such required period on receiving instructions from M/s. \_\_\_\_\_ whose behalf this guarantee is issued.

In witness whereof the Bank, through its authorized officer, has set its hand and stamp on this \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_ at \_\_\_\_\_.

WITNESS:

(SIGNATURE)  
(NAME)

(SIGNATURE)  
(NAME)

Designation with Bank Stamp

**(OFFICIAL ADDRESS)**

Attorney as per  
Power of Attorney No. \_\_\_\_\_  
Date: \_\_\_\_\_

**INSTRUCTIONS FOR FURNISHING "BID SECURITY / EARNEST  
MONEY" BY "BANK GUARANTEE"**

1. The Bank Guarantee by Bidders will be given on non-judicial stamp paper as per "Stamp Duty" applicable. The non-judicial stamp paper should be in the name of the issuing Bank. In case of foreign Bank, the said Bank's Guarantee to be issued by its correspondent Bank in India on requisite non-judicial stamp paper
2. The expiry date should be arrived at in accordance with "ITB: Clause-15.1".
3. The Bank Guarantee by bidders will be given from Bank as specified in "ITB".
4. A letter from the issuing Bank of the requisite Bank Guarantee confirming that said Bank Guarantee / all future communication relating to the Bank Guarantee shall be forwarded to the Employer at its address as mentioned at "ITB".
5. Bidders must indicate the full postal address of the Bank along with the Bank's E-mail / Fax / Phone from where the Earnest Money Bond has been issued.
6. If a Bank Guarantee is issued by a commercial Bank, then a letter to Employer confirming its net worth is more than Rs. 1,000,000,000.00 [Rupees One Hundred Crores] or equivalent along with documentary evidence.

**F-4A**  
**PROFORMA OF "LETTER OF CREDIT"**  
**FOR "EARNEST MONEY / BID SECURITY"**

To,

M/s Godavari Gas Private Limited  
D. No.: 85-06-23/2, 2nd Floor,  
Above Happy Home Furniture Shop,  
40th Ward, Morumpudi Junction,  
Rajamahendravaram – 533103  
East Godavari Dist, Andhra Pradesh

SUB:

TENDER NO:

**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 hereby authorized to draw on ..... (Name of Applicant/Bidder 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 **Godavari Gas Private Limited**, 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 **Godavari Gas Private Limited** 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 Security within 30 days before expiry of Bid Security.
    - (c) Fails to accept arithmetic corrections as per tender conditions.
  - (iv) The Bidder defaults w.r.t. any terms & conditions of Tender Document which call for forfeiture of Earnest Money Deposit (EMD).
2. This Irrevocable Letter of Credit has been established towards EMD/Bid Security against Tender No ..... for ..... (Name of Tender Document)

**TENDER NO: GGPL/KKD/C&P/PR 2044/2019-20/11**

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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/Bidder)

FOR .....

**Authorized Signature**  
(Original Bank)

**Counter Signature**

---

**F-5**  
**LETTER OF AUTHORITY**

[Pro forma for Letter of Authority for Attending Subsequent 'Negotiations' / 'Pre-Bid Meetings' / 'Un-priced Bid Opening' / 'Price Bid Opening']

**TENDER NO: GGPL/KKD/C&P/PR 2044/2019-20/11**

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Ref:

Date:

To,

M/s Godavari Gas Private Limited

Rajahmahendravaram

SUB:

TENDER NO:

**Dear Sir,**

I/We, \_\_\_\_\_ hereby authorize the following representative(s) for attending any 'Negotiations' / 'Meetings [Pre-Bid Meeting]', 'Un-priced Bid Opening', 'Price Bid Opening' and for any subsequent correspondence / communication against the above Bidding Documents:

[1] Name & Designation \_\_\_\_\_ Signature \_\_\_\_\_

Phone/Cell:

Fax:

E-mail: ..... @ .....

[2] Name & Designation \_\_\_\_\_ Signature \_\_\_\_\_

Phone/Cell:

Fax:

E-mail: ..... @ .....

We confirm that we shall be bound by all commitments made by aforementioned authorised representative(s).

Place:

[Signature of Authorized Signatory of Bidder]

Date:

Name:

Designation:

Seal:

Note: This "Letter of Authority" should be on the **"letterhead"** of the Firm / Bidder and should be signed by a person competent and having the 'Power of Attorney' to bind the Bidder. Not more than 'two [02] persons per Bidder' are permitted to attend "Techno-commercial / Un-priced" & "Price Bid" Openings. Bidders authorized representative is required to carry a copy of this authority letter while attending the un-priced and priced bid opening, the same shall be submitted to **Godavari Gas Private Limited**.

**TENDER NO: GGPL/KKD/C&P/PR 2044/2019-20/11**

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**F-6**  
**"NO DEVIATION" CONFIRMATION**

To,

M/s Godavari Gas Private Limited  
Rajahmahendravaram

SUB:

TENDER NO:

**Dear Sir,**

We understand that any 'deviation / exception' in any form may result in rejection of Bid. We, therefore, certify that we have not taken any 'exception / deviation' anywhere in the Bid and we agree that if any 'deviation / exception' is mentioned or noticed, our Bid may be rejected.

Place:

Date:

[Signature of Authorized Signatory of Bidder]

Name:

Designation:

Seal:

**F-7**  
**DECLARATION REGARDING HOLIDAY/BANNING AND LIQUIDATION,**  
**COURT RECEIVERSHIP**

To,

M/s Godavari Gas Private Limited  
Rajamahendravaram

SUB:

TENDER NO:

**Dear Sir,**

We hereby confirm that we are not on 'Holiday' by GGPL / GAIL or Public Sector Project Management Consultant (like EIL, Mecon only due to "poor performance" or "corrupt and fraudulent practices") or banned by Government department/ Public Sector on due date of submission of bid.

Further, we confirm that neither we nor our allied agency/(ies) (as defined in the Procedure for Action in case of Corrupt/ Fraudulent/ Collusive/ Coercive Practices) are on banning list of GGPL or the Ministry of Petroleum and Natural Gas.

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

In case it comes to the notice of GGPL that the bidder has given wrong declaration in this regard, the same shall be dealt as 'fraudulent practices' and action shall be initiated as per the Procedure for action in case of Corrupt/Fraudulent/Collusive/Coercive Practices.

Further, we also confirm that in case there is any change in status of the declaration prior to award of contract, the same will be promptly informed to GGPL by us.

Place:

Date:

[Signature of Authorized Signatory of Bidder]

Name:

Designation:

Seal:

**F-8**

**CERTIFICATE FOR NON-INVOLVMENT OF GOVT. OF INDIA**

To,

M/s Godavari Gas Private Limited  
Rajahmahendravaram

SUB:

TENDER NO:

**Dear Sir,**

If we become a successful Bidder and pursuant to the provisions of the Bidding Documents, award is given to us for the tender for“ \_\_\_\_\_”,the following

Certificate shall be automatically enforceable:

"We agree and acknowledge that the Employer is entering into the Agreement solely on its own behalf and not on behalf of any other person or entity. In particular, it is expressly understood & agreed that the Government of India is not a party to the Agreement and has no liabilities, obligations or rights thereunder. It is expressly understood and agreed that the Employer is authorized to enter into Agreement, solely on its own behalf under the applicable laws of India. We expressly agree, acknowledge and understand that the Employer is not an agent, representative or delegate of the Government of India. It is further understood and agreed that the Government of India is not and shall not be liable for any acts, omissions, commissions, breaches or other wrongs arising out of the Agreement. Accordingly, we hereby expressly waive, release and forego any and all actions or claims, including cross claims, VIP claims or counter claims against the Government of India arising out of the Agreement and covenants not to sue to Government of India as to any manner, claim, cause of action or things whatsoever arising of or under the Agreement."

Place:

Date:

[Signature of Authorized Signatory of Bidder]

Name:

Designation:

Seal:

**F-9**

**PROFORMA OF "BANK GUARANTEE" FOR "CONTRACT  
PERFORMANCE SECURITY / SECURITY DEPOSIT"**  
**(ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)**

To,  
M/s Godavari Gas Private Limited  
Rajahmahendravaram

**Dear Sir(s),**

M/s. \_\_\_\_\_ having registered office at \_\_\_\_\_ (herein after called the “contractor/supplier” which expression shall wherever the context so require include its successors and assignees) have been placed/ awarded the job/work of \_\_\_\_\_ vide PO/LOA /FOA No. \_\_\_\_\_ dated \_\_\_\_\_ for **Godavari Gas Private Limited** having registered office at .....(herein after called the “GGPL” which expression shall wherever the context so require include its successors and assignees).

The Contract conditions provide that the SUPPLIER/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/Scheduled Commercial Bank, undertaking full responsibility to indemnify **Godavari Gas Private Limited**, in case of default.

The said M/s. \_\_\_\_\_ 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 to give the irrevocable & unconditional guarantee to you that if default shall be made by M/s. \_\_\_\_\_ in performing any of the terms and conditions of the tender/order/contract or in payment of any money payable to **Godavari Gas Private Limited** we shall on first demand pay without demur, contest, protest and/ or without any recourse to the contractor to GGPL in such manner as GGPL may direct the said amount of Rupees \_\_\_\_\_ only or such portion thereof not exceeding the said sum as you may require from time to time.
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 order/contract with the said M/s. \_\_\_\_\_ and to enforce or to forbear from endorsing any powers or rights or by reason of time being given to the said M/s. \_\_\_\_\_ and such postponement forbearance would not have the effect of releasing the bank from its obligation under this debt.

3. Your right to recover the said sum of Rs. \_\_\_\_\_ (Rupees \_\_\_\_\_) from us in manner aforesaid is absolute & unequivocal and 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 or arbitrator or any other authority/forum and any demand made by you in the bank shall be conclusive and binding. The bank shall not be released of its obligations under these presents by any exercise by you of its liberty with reference to matter aforesaid or any of their or by reason or any other act of omission or commission on your part or any other indulgence shown by you or by any other matter or changed what so ever which under law would, but for this provision, have the effect of releasing the bank.
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 supplier/contractor 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 upto \_\_\_\_\_ (this date should be 90 days after the expiry of defect liability period/ Guarantee period) \_\_\_\_\_. The bank undertakes not to revoke this guarantee during its currency without your previous consent and further agrees that the guarantee shall continue to be enforceable until it is discharged by GGPL in writing. However, if for any reason, the supplier/contractor is unable to complete the supply/work within the period stipulated in the order/contract and in case of extension of the date of delivery/completion resulting extension of defect liability period/guarantee period of the supplier/contractor fails to perform the supply/work fully, the bank hereby agrees to further extend this guarantee at the instance of the supplier/contractor till such time as may be determined by GGPL. If any further extension of this guarantee is required, the same shall be extended to such required period on receiving instruction from M/s. \_\_\_\_\_ (contractor) on whose behalf this guarantee is issued.
6. Bank also agrees that GGPL at its option shall be entitled to enforce this Guarantee against the bank (as principal debtor) in the first instant, without proceeding against the supplier/contractor and notwithstanding any security or other guarantee that GGPL may have in relation to the supplier's/contractor's liabilities.
7. The amount under the Bank Guarantee is payable forthwith without any delay by Bank upon the written demand raised by GGPL. Any dispute arising out of or in relation to the said Bank Guarantee shall be subject to the exclusive jurisdiction of courts at Andhra Pradesh.

7. Therefore, we hereby affirm that we are guarantors and responsible to you on behalf of the Supplier/Contractor up to a total amount of \_\_\_\_\_ (amount of guarantees in words and figures) and we undertake to pay you, upon your first written demand declaring the Supplier/Contractor to be in default under the order/contract and without caveat or argument, any sum or sums within the limits of (amounts of guarantee) as aforesaid, without your needing to prove or show grounds or reasons for your demand or the sum specified therein.
8. 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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**INSTRUCTIONS FOR FURNISHING**  
**"CONTRACT PERFORMANCE SECURITY / SECURITY DEPOSIT" BY "BANK**  
**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 Andhra Pradesh.
2. The Bank Guarantee by Bidders will be given from bank as specified in Tender.
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.
4. If a Bank Guarantee is issued by a commercial bank, then a letter to Employer and copy to Consultant (if applicable) confirming its net worth is more than Rs. 100,00,00,000.00 [Rupees One Hundred Crores] or its equivalent in foreign currency along with documentary evidence.

**TENDER NO: GGPL/KKD/C&P/PR 2044/2019-20/11**

**F-10**  
**AGREED TERMS & CONDITIONS**

To,

M/s Godavari Gas Private Limited  
Rajahmahendravaram

SUB:

TENDER NO:

This Questionnaire duly filled in, signed & stamped must form part of Bidder's Bid and should be returned along with Un-priced Bid. Clauses confirmed hereunder need not be repeated in the Bid.

Sl.	DESCRIPTION	BIDDER'S CONFIRMATION
1	Bidder's name and address	
2.	Please confirm the currency of quoted prices is in Indian Rupees.	
3.	Confirm quoted prices will remain firm and fixed till complete execution of the order.	
4	Rate of applicable GST	CGST:.....% SGST:.....% IGST:.....% Total : .....%
4.1	Whether in the instant tender GST is covered in reverse charge rule of Goods and service tax	Yes/ No  In case of Yes, please specify GST) payable by: GGPL:.....% Bidder:.....%
5.	i) Confirm acceptance of relevant Terms of Payment specified in the Bid Document. ii) In case of delay, the bills shall be submitted after deducting the price reduction due to delay.	
6.	Confirm that Contract Performance Security will be furnished as per Bid Document.	
7.	Confirm that Contract Performance Security shall be from any Indian scheduled bank or a branch of an International bank situated in India and registered with Reserve bank of India as scheduled foreign bank. However, in case of bank guarantees from banks other than the Nationalised Indian banks, the bank must be a commercial bank having net worth in excess of Rs 100 crores and a declaration to this effect shall be made by such commercial bank either in the Bank Guarantee itself or separately on its letterhead.	
8.	Confirm compliance to Completion Schedule as specified in Bid document. Confirm contract period shall be reckoned	

**TENDER NO: GGPL/KKD/C&P/PR 2044/2019-20/11**

Sl.	DESCRIPTION	BIDDER'S CONFIRMATION
	from the date of Fax of Acceptance.	
9.	Confirm acceptance of Price Reduction Schedule for delay in completion schedule specified in Bid document.	
10.	a) Confirm acceptance of all terms and conditions of Bid Document (all sections). b) Confirm that printed terms and conditions of bidder are not applicable.	
11.	Confirm your offer is valid for period specified in BDS from Final/Extended due date of opening of Techno-commercial Bids.	
12.	Please furnish EMD/Bid Security details : a) EMD/ Bid Security No. & date b) Value c) Validity	
13.	Confirm acceptance to all provisions of ITB read in conjunction with Bid Data Sheet (BDS).	
14.	Confirm that Annual Reports for the last three financial years are furnished along with the Un-priced Bid.	
15.	Confirm that, in case of contradiction between the confirmations provided in this format and terms & conditions mentioned elsewhere in the offer, the confirmations given in this format shall prevail.	
16.	Confirm the none of Directors of bidder is a relative of any Director of Owner or the bidder is a firm in which any Director of Owner/ GGPL or his relative is a partner.	
17.	All correspondence must be in ENGLISH language only.	
18.	Owner reserves the right to make any change in the terms & conditions of the TENDER/BIDDING DOCUMENT and to reject any or all bids.	
19.	Confirm that all Bank charges associated with Bidder's Bank shall be borne by Bidder.	

Place:

Date:

[Signature of Authorized Signatory of Bidder]

Name:

Designation:

Seal:

**TENDER NO: GGPL/KKD/C&P/PR 2044/2019-20/11**

**F-11**  
**ACKNOWLEDGEMENT CUM CONSENT LETTER**

**(On receipt of tender document/information regarding the tender, Bidder shall acknowledge the receipt and confirm his intention to bid or reason for non-participation against the enquiry /tender through e-mail/fax to concerned executive in GGPL issued the tender, by filling up the Format)**

To,

M/s Godavari Gas Private Limited  
Rajahmahendravaram

SUB:

TENDER NO:

Dear Sir,

We hereby acknowledge receipt of a complete set of bidding document along with enclosures for subject item/job and/or the information regarding the subject tender.

- We intend to bid as requested for the subject item/job and furnish following details with respect to our quoting office:

Postal Address with Pin Code : .....

Telephone Number : .....

Fax Number : .....

Contact Person : .....

E-mail Address : .....

Mobile No. : .....

Date : .....

Seal/Stamp : .....

- We are unable to bid for the reason given below:

Reasons for non-submission of bid:

---

Agency's Name : .....

Signature : .....

Name : .....

Designation : .....

Date : .....

Seal/Stamp : .....

**TENDER NO: GGPL/KKD/C&P/PR 2044/2019-20/11**

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**F-12**  
**UNDERTAKING ON LETTERHEAD**

To,

M/s Godavari Gas Private Limited  
Rajahmahendravaram

SUB:

TENDER NO:

Dear Sir

We hereby confirm that “The contents of this Tender Document No. \_\_\_\_\_ have not been modified or altered by M/s. ....(Name of the bidder with complete address). In case, it is found that the tender document has been modified / altered by the bidder, the bid submitted by M/s.....(Name of the bidder) shall be liable for rejection”.

Place:

Date:

[Signature of Authorized Signatory of Bidder]

Name:

Designation:

Seal:

**TENDER NO: GGPL/KKD/C&P/PR 2044/2019-20/11**

**F-13**  
**BIDDER'S EXPERIENCE**

To,

M/s Godavari Gas Private Limited  
Rajahmahendravaram

SUB:

TENDER NO:

Sl. No	Description of the Services	LOA /WO No. and date	Full Address & phone nos. of Client. <i>Name, designation and address of Engineer/ Officer-in-Charge (for cases other than purchase)</i>	Postal &	Value of Contract /Order (Specify Currency Amount)	Date of Commencement of Services	Scheduled Completion Time (Months)	Date of Actual Completion	Reasons for delay in execution, if any
(1)	(2)	(3)	(5)	(6)	(7)	(8)	(9)	(10)	

Place:

Date:

[Signature of Authorized Signatory of Bidder]

Name:

Designation:

Seal:

**F-14**  
**CHECK LIST**

Bidders are requested to duly fill in the checklist. This checklist gives only certain important items to facilitate the bidder to make sure that the necessary data/information as called for in the bid document has been submitted by them along with their offer. This, however, does not relieve the bidder of his responsibilities to make sure that his offer is otherwise complete in all respects.

Please ensure compliance and tick (√) against following points:

S. No.	DESCRIPTION	CHECK BOX	REFERENCE PAGE NO. OF THE BID SUBMITTED
1.0	Digitally Signing (in case of e-bidding)/ Signing and Stamping (in case of manual bidding) on each sheet of offer, original bidding document including SCC, ITB, GCC ,SOR drawings, addendum (if any)		
2.0	Confirm that the following details have been submitted in the Un-priced part of the bid		
i	Covering Letter, Letter of Submission		
ii	Bid Security		
iii	Signed and stamped original copy of bidding document along with drawings and addendum (if any)		
iv	Power of Attorney in the name of person signing the bid.		
v	Copies of documents defining constitution or legal status, place of registration and principal place of business of the company		
vi	Bidders declaration that regarding, Holiday/ Banning, liquidation court receivership or similar proceedings		
vii	Details and documentary proof required against qualification criteria along with complete documents establishing ownership of equipment as per SCC are enclosed		
viii	Confirm submission of document along with unpriced bid as per bid requirement.		
3.0	Confirm that all forms duly filled in are		

**TENDER NO: GGPL/KKD/C&P/PR 2044/2019-20/11**

	enclosed with the bid duly signed by authorised person(s)		
4.0	Confirm that the price part as per Price Schedule format submitted with Bidding Document/ uploaded in case of e-bid.		
7.0	Confirm that annual reports for last three financial years & duly filled in Form 16 are enclosed in the offer for financial assessment (where financial criteria of BEC is applicable).		

Place:

[Signature of Authorized Signatory of Bidder]

Date:

Name:

Designation:

Seal:

**F-15**  
**FORMAT FOR CERTIFICATE FROM BANK**  
**IF BIDDER'S WORKING CAPITAL IS INADEQUATE/NEGATIVE**

**TENDER NO: GGPL/KKD/C&P/PR 2044/2019-20/11**

(To be provided on Bank's letter head)

Date:

To,  
M/s. Godavari Gas Private Limited

-----  
-----  
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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 GGPL's RFQ/Tender no. .... dated ..... for .....(Name of the supply/work/services/consultancy) and as per the terms of the said RFQ/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

**F-16**
**FORMAT FOR CHARTERED ACCOUNTANT CERTIFICATE/ CERTIFIED PUBLIC  
ACCOUNTANT (CPA) FOR FINANCIAL CAPABILITY OF THE BIDDER**

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

**A. AUDITED ANNUAL TURNOVER\* OF LAST 3 YEARS:**

Year	Amount (Currency)
Year 1: FY 2018-19	
Year 2: FY 2017-18	
Year 3: FY 2016-17	

**B. NETWORTH\* AS PER LAST AUDITED FINANCIAL STATEMENT: FY 2018-19**

Description	C. Year FY 2018-19
	Amount (Currency)
1. Net Worth	

**D. WORKING CAPITAL\* AS PER LAST AUDITED FINANCIAL STATEMENT : FY 2018-19**

Description	E. Year FY 2018-19
	Amount (Currency)
1. Current Assets	
2. Current Liabilities	
3. Working Capital (Current Assets-Current liabilities)	

***\*Refer Instructions***

**Note: It is further certified that the above mentioned applicable figures are matching with the returns filed with Registrar of Companies (ROC) [Applicable only in case of Indian Companies]**

**TENDER NO: GGPL/KKD/C&P/PR 2044/2019-20/11**

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Name of Audit Firm:	[Signature of Authorized Signatory]
Chartered Accountant/CPA	Name:
Date:	Designation:
UDIN No.	Seal:
Membership No.:	

**Instructions:**

1. The Separate Pro-forma shall be used for each member in case of JV/ Consortium.
2. The financial year would be the same as one normally followed by the bidder for its Annual Report.
3. The bidder shall provide the audited annual financial statements as required for this Tender document. Failure to do so would result in the Proposal being considered as non- responsive.
4. 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 plus Free Reserves & Surplus less accumulated losses, deferred expenditure and miscellaneous expenditure not written off, if any.
5. **Above figures shall be calculated after considering the qualification, if any, made by the statutory auditor on the audited financial statements of the bidder including quantified financial implication.**
6. This certificate is to be submitted on the letter head of Chartered Accountant/CPA.

**F-17**

**~~(TO BE INCLUDED ONLY WHERE CONSORTIUM/JV ARE  
ALLOWED)~~**

TENDER NO: GGPL/KKD/C&P/PR 2044/2019-20/11

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**FORMAT FOR CONSORTIUM/JV AGREEMENT**  
**(ON NON JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)**

**CONSORTIUM/JV AGREEMENT**

**TENDER NO: GGPL/KKD/C&P/PR 2044/2019-20/11**

**F-18**

**BIDDER'S QUERIES FOR PRE BID MEETING**

To,

M/s Godavari Gas Private Limited  
 Rajahmahendravaram

Sub :

Tender No :

SL. NO.	REFERENCE OF BIDDING DOCUMENT				BIDDER'S QUERY	GGPL'S REPLY
	SEC. NO.	Page No.	Clause No.	Subject		

**NOTE: The Pre-Bid Queries may be sent by fax and also by e-mail before due date for receipt of Bidder's queries.**

**SIGNATURE OF BIDDER:** \_\_\_\_\_

**NAME OF BIDDER :** \_\_\_\_\_

**F-19**

**E-Banking Mandate Form**

(To be issued on vendors 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 Godavari Gas Private Limited 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 GGPL 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  
bank)

(Signature of authorized officer of

**F-20**  
**INTEGRITY PACT**

**INTRODUCTION:**

Godavari Gas as one of its endeavor to maintain and foster most ethical and corruption free business environment, have decided to adopt the Integrity Pact, a tool developed by the Transparency International, to ensure that all activities and transactions between the Company (Godavari Gas) and its Counterparties (Bidders, Contractors, Vendors, Suppliers, Service Providers/Consultants etc.) are handled in a fair and transparent manner, completely free of corruption.

Considering the above, the details mentioned at attached Annexure-1 are applicable as stated in Instruction to Bidders of Bid Document in addition to the existing stipulation regarding Corrupt and Fraudulent Practices.

The copy of the Integrity Pact at Annexure- 2 shall be included in the Bid submitted by the bidder. In case a bidder does not sign the Integrity Pact, his bid shall be liable for rejection.

**ANNEXURE-1**

**Bidder is required to sign the Integrity Pact with GGPL as per format & terms and conditions enclosed with tender. In case a bidder does not sign the Integrity Pact, his bid shall be liable for rejection.**

**I COMMITMENTS AND OBLIGATIONS OF THE “COUNTERPARTY”**

- a) The Counterparty, directly or indirectly (through agent, consultant, advisor, etc.), shall not pay any bribe/ influence or give undue/ unlawful benefit to anyone to gain undue advantage in dealing with GGPL.
- b) The Counterparty will not engage in collusion of any kind including price fixation etc. with other Counterparts.
- c) The counterparty will not pass GGPL’s confidential information to any third party unless specifically authorized by GGPL in writing.
- d) The Counterparties shall promote and observe best ethical practices within their respective organizations.
- e) The Counterparty shall inform the Independent External Monitor.
  - i) If it received any demand, directly or indirectly, for a bribe/ favour or any illegal gratification/ payment / benefit;
  - ii) If it comes to know of any unethical or illegal payment / benefit;
  - iii) If it makes any payment to any GGPL associate.
- f) The Counterparty shall not make any false or misleading allegations against GGPL or its associates.

**II VIOLATIONS & CONSEQUENCES:**

- a) If a Counterparty commits a violation of its Commitments and Obligations under the Integrity Pact Programme during bidding process, their entire Earnest Money Deposit/ Bid Security, would be forfeited and in addition, they may be blacklisted from the GGPL business in future.
- b) In case of violation of the Integrity pact by Counterparty after award of the Contract, GGPL shall be entitled to terminate the Contract. GGPL would forfeit the security deposits, encash the bank guarantee (s) and other payments payable to Counterparty in such cases,
- c) Subject to satisfaction of the Independent External Monitor, GGPL may ban/ blacklist/ put on holiday and exclude the Counterparty from future dealings until GGPL is satisfied that the Counterparty shall not commit any such violation in future.
- d) In addition to above, GGPL reserves its right to initiate criminal proceedings against the violating Counterparty, if the allegations by Counterparty are found frivolous, untrue and misleading and may also impose exemplary cost for the same.
- e) The Counterparty will be entitled to claim as determined by the Independent External Monitor, if the above (d) is found incorrect.

**INDEPENDENT EXTRNAL MONITORS (IEMS)**

**TENDER NO: GGPL/KKD/C&P/PR 2044/2019-20/11**

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The following Independent External Monitors (IEMs) have been appointed by GGPL, in terms of Integrity Pact(IP) which forms part of GGPL Tenders / Contracts.

- i) \*\*\*\*\*
- ii) \*\*\*\*\*
- iii) \*\*\*\*\*

The bidder(s), in case of any dispute(s) / complaint(s) pertaining to this tender may raise the issue either with the designated tender issuing officer in Godavari Gas or directly with Vigilance office, Godavari Gas Private Limited, D. No.85-06-23/2, 2<sup>nd</sup> Floor, Morampudi Junction, Near Indian Oil Petrol Bunk, Rajahmundry – 533107.

ANNEXURE-2

**INTEGRITY PACT**

(To be executed on plain paper)

Between GGPL, (here-in-after referred to as “Principal”).

**AND**

\_\_\_\_\_ (here-in-after referred to as “The Bidder/  
Contractor”).

(Principal and the Bidder / Contractor are here-in-after are referred to individually as “Party” or collectively as “Parties”).

**PREAMBLE**

The Principal intends to award under laid down organizational procedures, contract/s for \_\_\_\_\_

The Principal values full compliance with all relevant laws and regulations, and the principles of economic use of resources, and of fairness and transparency in its relations with its Bidder/s and Contractor/s.

In order to achieve these goals, the Principal co-operates with the renowned International Non-Governmental Organisation ‘Transparency International’ (TI). Following TI’s national and international experience, the Principal will appoint an Independent External Monitor who will monitor the tender process, the execution of the contract etc. for compliance with the principles mentioned above.

**Section 1 – Commitments of the Principal**

1. The Principal commits itself to take all measures necessary to prevent corruption and to observe the following Principles in this regard:-
  - i) No employee of the Principal, either in person or through family members, including relatives, will in connection with the tender for or the execution of a contract, demand or accept a promise for or accept for him/herself or for a third person, any material or immaterial benefit to which he/she is not legally entitled.
  - ii) The Principal shall, during the tender process treat all Bidders with equity. The Principal undertakes and ensures that before and during the tender process shall provide and share the same information to all Bidders and will not provide to any Bidder confidential / additional information through which one particular Bidder could take an advantage in relation to the tender process or the contract execution.

- iii) In case, any misconduct on the part of any official (s) is reported by the BIDDER to the PRINCIPAL with full and verifiable facts and the same is prima facie found to be correct by the PRINCIPAL, necessary disciplinary proceedings, or any other action as deemed fit, including criminal proceedings may be initiated by the PRINCIPAL and such person shall be debarred from further dealings related to the contract process. In such a case, while an enquiry is being conducted by the PRINCIPAL the proceedings under the contract would not be stalled..
2. If the Principal obtains information on the conduct of any of its employees which is a criminal offence under the Anti-Corruption Laws of India, or if there be a substantive suspicion in this regard, the Principal will inform its Vigilance Office and in addition can initiate disciplinary actions.

## **Section 2 – Commitments and Undertakings by the Bidder/Contractor**

1. The Bidder / Contractor commits and undertakes to take all measures necessary to prevent malpractices & corruption. He commits himself to observe the following principles during his participation in the tender process and during the contract execution:
- i) The Bidder / Contractor undertakes not to, directly or through any other person or firm offer, promise or give or influence to any employee of the Principal associated with the tender process or the execution of the contract or to any other person on their behalf any material or immaterial benefit to which he / she is not legally entitled in order to obtain in exchange any advantage of any kind whatsoever during the tender process or during the execution of the contract.
  - ii) The Bidder / Contractor undertakes not to enter into any undisclosed agreement or understanding, whether formal or informal with other Bidders. This applies in particular to prices, specifications, certifications, subsidiary contracts, submission or non-submission of bids or any other action to restrict competitiveness or to introduce cartelization in the bidding process.
  - iii) The Bidder / Contractor undertakes not to commit any offence under the relevant Anti-corruption Laws of India. Further, the Bidder / Contractor will not use improperly any information or document provided by the Principal as part of the business relationship regarding plans, technical proposals and business details, including information contained or transmitted electronically for the purposes of competition or personal gain and will not pass the information so acquired on to others.
  - iv) The Bidder / Contractor will, when presenting his bid undertakes to disclose any and all payments made, is committed to or intends to make to agents, brokers or any other intermediaries in connection with the award of the contract.

2. The Bidder / Contractor will not instigate and allure third persons / parties to commit offences outlined above or be an accessory to such offences.

**Section 3 – Disqualification from tender process and exclusion from future contracts**

If the Bidder, before the award of contract, has committed a transgression through a violation of any provisions of Section 2 or in any other form so as to put his reliability or credibility as Bidder into question, the Principal shall be entitled to disqualify, put on holiday or blacklist the Bidder including from the future tender process or to terminate the contract, if already signed, on that ground.

1. If the Bidder / Contractor has committed a transgression through a violation of any provisions of Section 2 so as to put his reliability or credibility into question, the Principal shall be entitled to exclude including blacklist and put on holiday the Bidder / Contractor from entering into any GGPL future contract tender processes. The imposition and duration of the exclusion will be determined by the severity of the transgression. The severity will be determined by the Principal taking into consideration the full facts and circumstances of each case particularly taking into account the number of transgressions, the position of the transgressors within the company hierarchy of the Bidder and the amount of the damage. The exclusion may be imposed for a minimum period of 6 months and maximum of three years.
2. A transgression is considered to have occurred if the Principal after due consideration of the available evidence, concludes that no reasonable doubt is possible.
3. The Bidder with its free consent and without any influence agrees and undertakes to respect and uphold the Principal's absolute rights to resort to and impose such exclusion and further accepts and undertakes not to challenge or question such exclusion on any ground, including the lack of any hearing before the decision to resort to such exclusion is taken. This undertaking is given freely and after obtaining independent legal advice.
4. Subject to the full satisfaction of the Principal, the exclusion of the Bidder / Contractor could be revoked by Principal prematurely if the bidder / contractor can prove that he has restored / recouped the damage caused by him and has installed a suitable corruption prevention system in his organization.

**Section 4 – Forfeiture of EMD / Security Deposits**

1. If the Principal has disqualified the Bidder from the tender process prior to the award in terms of Section 3, and during the execution of the contract, the Principal shall forfeit earnest money deposit / bid security money, encash the

bank guarantee including due payments in addition to blacklisting or putting on holiday the bidder and terminating the contract.

2. If the Principal has terminated the contract according to Section 3, or if the Principal is entitled to terminate the contract according to Section 3, the Principal shall be entitled to demand and recover from the Contractor liquidated damages equivalent to Earnest Money Deposit / Security Deposit / Performance Bank Guarantee.
3. The bidder agrees and undertakes to pay the said amounts without protest or demur subject only to condition that if the Bidder / Contractor can prove and establish that the exclusion of the Bidder from the tender process or the termination of the contract after the contract award has caused no damage or less damage than the amount of the liquidated damages, the Bidder / Contractor shall compensate the Principal only to the extent of the damage in the amount proved.

#### **Section 5 – Previous transgression**

1. The Bidder swears on oath that no previous transgression has occurred during the last three years with any other Company in any country conforming to the TI approach or including with any other Public Sector Enterprise / Undertaking in India that could justify his exclusion from the tender process.
2. If the Bidder makes incorrect statement on this subject, he shall be disqualified from the tender process or the contract, if already awarded, could be liable to be terminated on this ground.

#### **Section 6 – Equal treatment to all Bidders / Contractors / Subcontractors**

1. The Bidder / Contractor undertakes to demand from all its sub-contractors, if any, an undertaking and commitment in conformity with this Integrity Pact, and to submit it to the Principal before signing of the contract.
2. The Principal will enter into agreements with similar conditions, as stipulated herein, with all Bidders, Contractors and Subcontractors.
3. The Principal shall disqualify from the tender process all Bidders who do not sign this Pact or violate any of its provisions.

#### **Section 7 – Criminal charges against violating Bidders / Contractors / Sub-contractors**

If the Principal obtains knowledge of conduct of a Bidder, Contractor or Subcontractor, or of an employee or a representative or an associate of a Bidder, Contractor or Subcontractor which constitutes corruption, or if the Principal has

substantive suspicion in this regard, the Principal will inform the Vigilance Office / Department for initiating appropriate action for above.

### **Section 8 –Independent External Monitor / Monitors**

1. The Principal appoints competent and credible external independent Monitor for this Pact. The task of the Monitor is to review independently and objectively, whether and to what extent the parties comply with the obligations under this agreement.
2. The Monitor is not subject to any instructions by the representatives of the parties and performs his functions neutrally and independently. He reports to the Chairperson of the Board of the Principal.
3. The Contractor accepts that the Monitor has the right to access without restriction to all Project documentation of the Principal including that provided by the Contractor. The Contractor will also grant the Monitor, upon his request and demonstration of a valid interest, unrestricted and unconditional access to his project documentation. The same is applicable to Sub-contractors. The Monitor is under contractual obligation to treat the information and documents of the Bidder / Contractor / Sub-contractor with confidentiality.
4. The Principal will provide to the Monitor sufficient information about all meetings among the parties related to the Project provided such meetings could have an impact on the contractual relations between the Principal and the Contractor. The parties offer to the Monitor the option to participate in such meetings.
5. As soon as the Monitor notices, or believes to notice, a violation of this agreement he will so inform the Management of the Principal and request the Management to discontinue or heal the violation or to take other relevant action. The monitor can in this regard submit non-binding recommendations. Beyond this, the Monitor has no right to demand from the parties that they act in a specific manner, refrain from action or tolerate action. However, the Independent External Monitor shall give an opportunity to the bidder / contractor to present its case before making its recommendations to the Principal.
6. The Monitor will submit a written report to the Chairperson of the Board of the Principal within 8 to 10 weeks from the date of reference or intimation to him by the 'Principal' and should the occasion arise, submit proposals for taking corrective measures.
7. Monitor shall be entitled to compensation by the Principal.

8. If the Monitor has reported to the Chairperson of the Board a substantiated suspicion of an offence under relevant Anti-Corruption laws of India, and the Chairperson has not, within reasonable time, taken visible action to proceed against such offence or reported it to the Vigilance Office, the Monitor may also transmit this information directly to the Central Vigilance Commissioner, Government of India.
9. The word 'Monitor' would include both singular and plural.
10. Independent External Monitor shall be required to maintain confidentiality of the information acquired and gathered during their tenure / role as Independent Monitor. Any breach in this regard would be subject to the legal judicial system of India.
11. The Independent External Monitors shall be responsible to oversee the implementation of Integrity Pact Program to prevent corruption, bribes or any other unethical practices in the GGPL. However, Monitor(s) shall be personally and severally be liable for any action or suit brought by Bidder / Contractor / against the Monitor, in case the findings of Independent Monitor is / are found incorrect or biased or prejudiced.
12. Independent External Monitor(s) shall be required to furnish an Undertaking and shall disclose before taking any assignment that he / she has no interest in the matter or connected with the party (bidder / contractor) in any manner.

### **Section 9 – Pact Duration**

The provisions of this Pact shall come into effect from the date of signing of this Pact by the both parties. It expires for the Contractor 12 months after the last payment under the respective contract, and for all other Bidders 6 months after the contract has been awarded.

If any claim is made / lodged by either party during this time, the same shall be binding and continue to be valid despite the lapse of this pact as specified above, unless it is discharged/determined by the Chairperson of the Principal.

### **Section 10 – Miscellaneous provisions**

1. This agreement is subject to Indian Law. Place of performance and jurisdiction is the Registered Office of the Principal, i.e. New Delhi. The Arbitration clause provided in main tender document / contract shall not be applicable for any issue / dispute arising under Integrity Pact.
2. Changes and supplements as well as termination notices, if any, need to be made in writing. Side agreements have not been made.

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3. If the Contractor / Bidder is a partnership concern or a consortium, this agreement must be signed by all partners or consortium members.
4. In case any or several of the provisions of this agreement turn out to be void, the remainder of this pact shall remain valid. The parties to this pact however, shall strive to come to an agreement to their original intentions in such a case.

-----  
(Name & Designation)  
For the Principal

-----  
(Name & Designation)  
For the Bidder/Contractor

Place -----

Witness 1: -----

Date -----

Witness 2: -----

**F-21**  
**INDEMNITY BOND**

WHEREAS Godavari Gas Private Limited (hereinafter referred to as “**GGPL**”) which expression shall, unless repugnant to the context include its successors and assigns, having its registered office at D. No.: 85-06-23/2, 2nd Floor, Above Happy Home Furniture Shop, 40th Ward, Morampudi Junction, Rajamahendravaram – 533103] has entered into a contract with \_\_\_\_\_ (herein after referred to as the “**Contractor**”) which expression shall unless repugnant to the context include its representatives, successors and assigns, having its registered office at \_\_\_\_\_ and on the terms and conditions as set out, inter-alia in the **LOA No.** \_\_\_\_\_ and various documents forming part thereof, hereinafter collectively referred to as the “**CONTRACT**” which expression shall include all amendments, modifications and / or variations thereto.

GGPL has also advised the Contractor to execute an Indemnity Bond in general in favour of GGPL indemnifying GGPL and its employees and Directors including Independent Directors from all consequences which may arise out of any prospective litigation or proceedings filed or may be initiated by any third party, including any Banker / financial institution / worker(s) / vendor(s) / subcontractor(s) etc. who may have been associated or engaged by the Contractor directly or indirectly with or without consent of GGPL for above works.

NOW, THEREFORE, in consideration of the promises aforesaid, the Contractor hereby irrevocably and unconditionally undertakes to indemnify and keep indemnified GGPL and all its employees, Directors, including Independent Directors, from and against all/any claim(s), damages, loss, which may arise out of any litigations/liabilities that may be raised by the Contractor or any third party against GGPL under or in relation to this contract. The Contractor undertakes to compensate and pay to GGPL and/or any of its employees, Directors including Independent Directors, forth with on demand without any protest the amount claimed by GGPL for itself and for and on behalf of its employees, Directors including Independent Directors together with direct/indirect expenses including all legal expenses incurred by them or any of them on account of such litigation or proceedings.

AND THE CONTRACTOR hereby further agrees with GGPL that:

This Indemnity shall remain valid and irrevocable for all claims of GGPL and/or any of its employees and Directors including Independent Directors arising out of said contract with respect to any such litigation / court case for which GGPL and/or its employees and Directors including Independent Directors has been made party until now or here-in-after.

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This Indemnity shall not be discharged/revoked by any change/modification/amendment/assignment of the contract or any merger of the Contractor with other entity or any change in the constitution/structure of the

Contractor's firm/Company or any conditions thereof including insolvency etc. of the Contractor, but shall be in all respects and for all purposes binding and operative until any/all claims for payment of GGPL are settled by the Contractor and/or GGPL discharges the Contractor in writing from this Indemnity.

The undersigned has full power to execute this Indemnity Bond for and on behalf of the

Contractor and the same stands valid.

SIGNED BY :

For \_\_\_\_\_

*Authorised Representative*

Place:

Dated:

Witnesses:

1.

2.

# **SECTION – IV**

## **SCOPE OF SUPPLY**

**&**

## **SPECIAL CONDITIONS OF CONTRACT**

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**Special Conditions of Contract (SCC)****1. GENERAL DEFINITIONS**

1.1. In addition to meaning ascribed to certain capitalized terms in Section III “GCC – GOODS / WORKS”, following initial capitalized terms shall have the meaning as ascribed to such term hereunder. In case any term defined hereunder is also defined in Section III “GCC – GOODS / WORKS”, the meaning ascribed to such term hereunder shall prevail:

**1.1.1. Definitions**

Effective date : shall mean the date on which Contractor’s obligations will commence and that will be date of issuance of Fax of Acceptance

Commissioning : shall mean completion of erection, installation, hook-up & site acceptance of Field Trial Run test of Integrated CNG Compressor Package to Owner/ Consultant as defined in bid documents.

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

1.3 Notwithstanding the sub-division 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.

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

1.5 Wherever it is mentioned in the specifications that the Contractor shall perform certain work or provide certain facilities, it is understood that the Contractor shall do so at his cost and the value of contract shall be deemed to have included cost of such performance and provisions, so mentioned.

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

1.7 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, the following shall prevail to the extent of such irreconcilable conflict in order of precedence:

- i) Letter of Acceptance along with Statement of Agreed Variations, if any

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- ii) Fax of Intent
- iii) Schedule of Rates as enclosures to Fax of Intent (If applicable)
- iv) Job Particular Specifications
- v) Drawings
- vi) Technical Material Specifications
- vii) Instruction to Bidders
- viii) Special Conditions of Contract
- ix) General Conditions of Contract
- x) Applicable Standards as specified
- x) Indian Standards
- xi) Other applicable Standards

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

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

### **2.0 SCOPE OF WORK & SCOPE OF SUPPLY**

2.1 The detailed scope of work shall be as specified in Technical Volume

### **3.0 CONSTRUCTION WATER AND POWER SUPPLY**

3.1 No water and power will be provided by the owner. It should be the responsibilities of the contractor to arrange water and power at his own cost.

### **4.0 COMPLETION SCHEDULE (DOMESTIC & FOREIGN BIDDERS)**

The time schedule envisaged for CNG Integrated Compressor Package shall be as under:

<b>Description</b>	<b>Qty</b>	<b>Time Period</b>
<b>CNG Integrated Compressor Package Consisting Of  Compression, Storage &amp; Dispensing unit of 400 SCMH</b>	One	Supply of 01 No. of Integrated Compressor Package within 6 months from date of Fax of Acceptance (FOA) Erection, testing & commissioning excluding PGT (Performance Guarantee test) & AMC (Annual maintenance comprehensive) within 4 weeks from the date of intimation by EIC.

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The basis of delivery for Domestic will be FOT site.

Comprehensive annual repair & maintenance Contract for a period of 3 (three) years shall begin from the date of completion of WORK as certified by the ENGINEER IN CHARGE which is indicated in the Completion Certificate

**COMPLIANCE WITH LAWS**

5.0 The Contractor shall abide by all applicable rules, regulations, statutes, laws governing the performance of works in India.

**6.0 GOVERNMENT OF INDIA NOT LIABLE**

6.1 It is expressly understood and agreed by and between the Contractor and the Owner/ Consultant that the Owner Consultant is entering into this agreement solely on its own behalf and not on behalf of any other person or entity. In particular, it is expressly understood and agreed that the Government of India is not a party to this agreement and has no liabilities, obligations or rights there under. It is expressly understood and agreed that the Owner Consultant is an independent legal entity with power and authority to enter into contract, solely in its own behalf under the applicable laws of India and general principle of Contract Law. The Contractor expressly agrees, acknowledges and understands that the Owner / Consultant are not an agent, representative or delegate of Govt. of India. It is further understood and agreed that the Govt. of India is not and shall not be liable for any acts, omissions, commissions, breaches or other wrongs arising out of the contract. Accordingly, contractor hereby expressly waives, releases and foregoes any and all actions or claims including cross claims, impleader claims or counter claim against the Govt. of India arising out of this contract and covenants not to sue to Govt. of India in any manner, claim, and cause of action or thing whatsoever arising out of or under this agreement.

**7.0 LIMITATION OF LIABILITY**

7.1 The final payment by the Owner/ Consultant in pursuance of the Contract terms shall not mean release of the Contractor from all of his liabilities under the Contract. The Contractor shall be liable and committed under this contract to fulfill all his liabilities and responsibilities, till the time of release of contract performance guarantee by the Owner/ Consultant.

7.2 Notwithstanding anything contrary contained herein, the aggregate total liability of Contractor under the Contract or otherwise shall be limited to 100% of Contract value. However, neither party shall be liable to the other party for any indirect and consequential damages, loss of profit or loss of production.

**8.0 CONTRACT PERFORMANCE GUARANTEE**

8.1 Bidder shall submit Contract Performance Guarantee as per clause no. 38 of ITB in the form of irrevocable Bank Guarantee/ Demand Draft /Banker's Cheque.

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**9.0 SUBSEQUENT LEGISLATION**

9.1 All duties, taxes, fees, charges, expenses, etc. (except where otherwise expressly provided in the Contract) as may be levied/ imposed in consequence of execution of the works or in relation thereto or in connection therewith as per the Act, laws, Rules, Regulations in force shall be to

Contractors account. However, any new taxes / duties imposed after the date of submission of price bid & up to Contractual Completion date shall be to the owner's account but such Taxes / duties imposed beyond Contractual Completion date shall be to the Contractors account.

**10.0 TAXES, DUTIES AND LEVIES SHALL BE AS PER CLAUSE NO.13 OF ITB**

**11. DELETED**

**12. DELETED**

**13. DELETED**

**14.0 DELETED**

**15. ISSUE OF ESSENTIALITY CERTIFICATE**

No essentiality certificate shall be issued by GGPL.

**16. WITHHOLDING, ACCOUNTING AND TAX REQUIREMENTS**

16.1 Contractor 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 is conducting operations and to pay the same promptly and directly when due to the proper authority. Contractor 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 will furnish the evidence of payment of applicable taxes, in the country (ies) of the Contractor's and his sub-contractor(s) and expatriate employees.

**17. FIRM PRICE**

17.1 The quoted prices shall be firm and shall not be subject to price escalation till the work is completed in all respects.

**18. WORKS CONTRACT**

18.1 The work covered under this contract shall be treated as "Works Contract".

**19. PROVIDENT FUND ACT (FOR INDIAN BIDDERS AS WELL AS INDIAN ASSOCIATE OF FOREIGN BIDDER)**

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19.1 The Contractor shall strictly comply with the provisions of Employees Provident Fund Act and register them 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 RPFC for the preceding months.

**20. PAYMENT TERMS AND MODE OF PAYMENT**

20.1 The terms and mode of payment shall be as per SECTION – III D hereto.

**21. ADDITIONAL WORKS/EXTRA WORKS**

OWNER reserves their right to execute any additional works/extra works, during the execution of work, either by themselves or by appointing any other agency even though such works are incidental to and necessary for the completion of works awarded to the contractor. In the event of such decisions taken by OWNER, contractor is required to extend necessary cooperation, and act as per the instructions of Engineer-in-Charge.

**22. SITE HANDOVER AND PERMITS:**

The Owner shall provide to the Contractor free of cost the site (as per scope of work) for the Works and permissions and permits (if any) necessary for the site.

The contractor shall complete all site activities including Field Trial run, Performance Guarantee test (PGT), operation and maintenance for 3 years & handing over of system to Owner.

The Contractor shall commence work at any site which has been handed over to them irrespective of the location of site as defined in bid document on priority basis. If necessary, because of any problem or difficulty in handing over of site, or the procurement therefore at any site due to the existence of any unforeseen or force Majeure conditions covering at any location, the Contractor shall within the scope of the work and without entitlement to additional compensation therefore forthwith proceed to the next possible site of its continuance, where there is no hindrance and/or in which the construction work can be continued and shall move in the opposite direction, if necessary.

The Owner shall likewise endeavor to procure the permits/ licenses required to be procured by the Owner under the Contract sufficient in advance to enable the Contractor to continue movement in the same direction. Should however for any cause such permission/license not be available in time to match the progress of work, the Contractor shall forthwith the scope of the work and without entitlement to additional compensation therefore forthwith proceed with the work at the next possible site of its continuance including movement in the opposite direction, if necessary.

The contractor is required to maintain the Hindrance Register for site activities. All hindrances encountered in the execution needs to be logged in this register & shall be jointly signed.

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**23. DELETED**

**24. STATUTORY APPROVALS**

24.1 The package supplier shall give necessary documents for obtaining approval from CCOE and any other concerned authority as required by the client.

**25. TESTS AND INSPECTION**

25.1 The Contractor shall carry out the various tests as enumerated in the technical specifications of this bid document and the technical documents that have been part of bidding document and will be furnished to him during the performance of the work & no separate payment shall be made unless otherwise specified in Price Schedule.

**26. PRICE REDUCTION SCHEDULE (PRS)**

Pursuant to cl. no. 27.1 of GCC - Work, the Price reduction schedule shall be modified to the following extent:-

26.1 Price Reduction Schedule shall be separately applicable for integrated compressor package, as required to be delivered/ commissioned as per order/ intimation given by Godavari Gas @1/2 (half)% of the Contract Value of respective parts i.e., Part-A for Supply (on FOT site basis) & Part-B for Installation, Testing & Commissioning as indicated in FOA, per complete week of delay or part thereof:

Further, Price Reduction Schedule for delay in completion will be applicable separately for:

- i) Part A: Supply on FOT site basis
- ii) Part B: Installation, Testing & Commissioning

26.2 Price reduction schedule for supply shall be applicable @1/2 (half)% on the value of undelivered/ incomplete delivered INTEGRATED compressor package unit(s) as per complete week of delay or part thereof.

Note: INTEGRATED Compressor package shall be considered delivered only after receipt of integrated compressor package unit on FOT site basis, complete in all respect with all required parts & accessories. Supply value of complete integrated compressor package unit shall be considered for PRS purpose.

26.3 Similarly, Price Reduction Schedule for Installation, Testing & Commissioning shall be applicable @1/2 (half)% on Commissioning value of incomplete integrated compressor package unit(s) as per complete week of delay or part thereof.

26.4 The maximum value of PRS shall be limited to 5% (five percent) of total contract price as per Price Schedule excluding amount pertaining AMC (O&M charges), if any. For PRS purpose, the above mentioned contract price shall be excluding taxes and duties.

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26.5 The applicable Penalty during the Comprehensive annual repair & maintenance Contract will be as indicated in the Technical Specification of the Tender document.

**27. BONUS FOR EARLY COMPLETION**

27.1 Clause No. 27.3 of GCC-Works shall not be applicable for this tender.

**28. ORIGIN OF GOODS**

28.1 A certificate issued by relevant Chamber of Commerce to this effect shall form part of shipping document.

**29. LIEN**

29.1 Contractor 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 shall at his own cost defend, indemnify and hold harmless Owner or its authorized representative from such disputes of title/liens, costs, consequences etc.

**30. GOVERNING LAW**

30.1 Laws of India will govern the Contract and Bengaluru Courts in the State of Karnataka will have exclusive jurisdiction or all matters related to Contract.

**31. DEFECT LIABILITY PERIOD**

31.1 The defect liability period shall be as per clause 80.0 of GCC-Works. The sub clause no. 80.1 of GCC Works shall stand modified as under:

31.2 The BIDDER/ SUPPLIER shall guarantee the installation/WORK for a period of 12 months from the date of completion of WORK as certified by the ENGINEER IN CHARGE which is indicated in the Completion Certificate or 24 months from the date of supply (on FOT site basis), whichever is earlier. Any damage or defect that may arise or lie undiscovered at the time of issue of Completion Certificate, connected in any way with the equipment or materials supplied by him or in the workmanship, shall be rectified or replaced by the BIDDER at his own expense as deemed necessary by the ENGINEER IN CHARGE or in default, the ENGINEER IN CHARGE may carry out such works by other work and deduct actual cost incurred towards labour, supervision and materials consumables or otherwise plus 100% towards overheads (of which the certificate of ENGINEER IN CHARGE shall be final) from any sums that may then be or at any time thereafter, become due to the BIDDER or from his Contract Performance Security, or the proceeds of sale thereof or a sufficient part on thereof.

**32. INSPECTION OF SUPPLY ITEMS**

32.1 All inspection and tests on bought out items shall be made as per the specifications forming part of this contract. Various stages of inspection and testing are indicated in the bidding document and shall also be identified after receipt of Quality Assurance Programme from the Contractor/ Manufacturer.

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32.2 The contractor/sub-contractor shall provide all instruments, tools, necessary testing and other inspection facilities to inspection engineer of Owner/Consultant free of cost for carrying out inspection.

32.3 Vendor shall advise Owner/ Consultant in writing at least 10 days in advance of the date of final inspection/tests. Manufactures inspection or testing certificates for equipment and materials supplied, may be considered for acceptance at the discretion of Owner/ Consultant. All costs towards testing etc. shall be borne by the Vendor within their quoted rates. All inspection of various items shall be carried out based on Quality Assurance Plan, which will be submitted by the Vendor and duly approved by Owner/ Consultant.

**33. DELETED**

**34. DELETED**

**35. SITE CLEANING**

35.1 The Contractor shall clean and keep clean the work site from time to time to the satisfaction of the Engineer- in-Charge for easy access to work site and to ensure safe passage, movement and working.

**36. COORDINATION WITH OTHER AGENCIES**

36.1 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. Proper coordination with other agencies will be Contractors responsibility. In case of any dispute, the decision of Engineer-in-Charge shall be final and binding on the Contractor.

**37. DELETED**

**38. DELETED**

**39.0 EXTENDED STAY COMPENSATION**

39.1 The Extended Stay Compensation (ECS) is not applicable in the instant tender.

**40. INSURANCE**

40.1 Insurance for free issue material

All supplies at FOB Seaport for Foreign bidder and FOT site for Indian bidder shall be considered free issue material to contractor.

Bidder shall at his own expense arrange, secure and maintain insurance cover of value not less than the supply value (including custom duty, CVD, Special Duty, Cess etc. as applicable) upto 15 days beyond commercial operation by purchaser or 14 months from the date of supply on FOT site basis, whichever is

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earlier. Contractor's quoted price shall be inclusive of all costs on account of insurance liabilities covered under the Contract. Bidder to note that the beneficiary of insurance cover shall be the Owner.

Indemnity Bond to be executed by the supplier while taking custody of all supplies from owner at the time of custom clearance and transporting to site for completion his scope of work.

#### 40.2 Insurance in India

40.2.1 In addition to the insurance covers specified in the General Conditions of Contract to be obtained and maintained by the contractor, Contractor shall at his own expense arrange secure and maintain insurance with reputable insurance companies to the satisfaction of the Owner/ Consultant as may be necessary and to its full value for all such amounts to project the works in progress from time to time and the interest of Owner/ Consultant against all risks as detailed herein. The form and the limit of such insurance as defined 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/ Consultant. However, irrespective of work acceptance, the responsibility to maintain adequate insurance coverage at all times during the period of contract till completion of installation, testing & commissioning including PG tests shall be that of contractor alone. Contractor's failure in this regard shall not relieve him of any of his responsibilities and obligations under contractor.

40.2.2 Any loss or damage to the equipment during ocean transportation, port/ custom clearance, inland and port handling, inland transportation, storage, erection and commissioning till such time the work is taken over by Owner/ Consultant, 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/ Consultant 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/ Consultant immediately upon the contractor having taken such insurance coverage. Contractor shall also inform the Owner/ Consultant 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.

40.2.3 The risks that are to be covered under the insurances 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 equipments, plants and materials.

40.2.4 All costs on account of insurance liabilities covered under this contract will be to contractor's account and will be Contract Price. However Owner/ Consultant may from time to 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.

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

40.2.6 Owner will be co-insured in the policy.

40.2.7 Contractor will be required to submit documentary proof for the transit insurance before dispatch.

#### **41. PERFORMANCE EVALUATION**

Contractors Performance will be evaluated from receipt of bid until completion of Works as per format attached herewith as Annexure II to ITB.

#### **42.0 TRAINING OF PURCHASER'S PERSONNEL**

Contractors shall train Purchaser's personnel as per the scope define in the particular Job Specifications, technical specification, Price Schedule. Bidder's quoted price shall include all expenses towards their personnel's travel, transportation, boarding, loading, living and personnel expenses, etc. for on-site training.

Travel, transportation, venue, boarding, lodging & personnel expenses of Purchaser's personnel shall be borne by Purchaser.

#### **43.0 QUALITY ASSURANCE / QUALITY CONTROL PROGRAMME**

43.1 Bidder shall include in his offer the Quality assurances Programme containing the overall quality management and procedures which is required to be adhered to during the execution of Vendor.

After the award of the contract detailed quality assurance programme to be followed for the execution of contract under various divisions of work will be mutually discussed and agreed to.

43.2 The Vendor shall establish document and maintain an effective quality assurance system as outlines in recognized codes.

43.3 Quality Assurance system plans/procedures of the Vendor shall be furnished in the form of a QA manual. This document should cover details of the personnel responsible for the Quality Assurance, plans or procedures to be followed for quality control in respect of design, Engineering, Procurement, Supply, Installation, Testing and Commissioning. The quality assurance system should indicate organizational approach for quality control and quality assurance of the construction activities, at all stages of work at site as well as the manufacture's works and dispatch of materials.

43.4 The Owner/Consultant or their representative reserve the right to inspect witness, review any or all stages of work at shop/site as deemed necessary for quality assurance.

#### **44.0 ERECTION AND INSTALLATION**

The CONTRACTOR shall carry out required supervision and inspection as per quality Assurance plan and furnish all assistance required by the OWNER in carrying out inspection work during this phase. The OWNER will have engineers, inspectors or other authorised representatives present who are to have free access to the WORK at all times. If an OWNER's representative notifies the CONTRACTOR's authorised representative not lower than a Foreman of any deficiency, or recommends action regarding compliance

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with the SPECIFICATIONS, the CONTRACTOR shall make every effort to carry out such instructions to complete the WORK conforming to the SPECIFICATIONS and approved DRAWINGS in the fullest degree consistent with best industry practice.

**45.0 deleted****46.0 FIELD INSPECTION**

CONTRACTOR shall have at all times during the performance of the WORK, a Competent Superintendent on the premises. Any instruction given to such superintendent shall be construed as having been given to the CONTRACTOR.

**47.0 PROJECT SCHEDULING & MONITORING**

The following schedules/documents/reports shall be prepared and submitted by the Bidder/Contractor for review/approval at various stages of the contract.

**47.1 ALONG WITH BID****a) Time Schedule**

The Completion Time Schedule for the work (including mobilization period) as per Invitation for bid, Section-I of Tender in all respect, from the date of issue of Fax of Acceptance.

The Bidder is required to submit a Project Time Schedule in Bar Chart Form, along with the Bid. The Schedule shall cover all aspects like sub-ordering, manufacturing and delivery, indicated in the Bid Document. The Owner interface activities shall be clearly identified with their latest required dates. Owner reserves the right to disqualify the Bidder if the above Schedule submitted by the Bidder is not in line with the overall Project requirement.

**b) Scheduling & Monitoring System**

The Bidders should describe their system of Project Scheduling and monitoring, the extent of computerization, level of detailing, tracing methodology etc. with the name of computer package and sample outputs.

**47.2 AFTER THE AWARD OF CONTRACT****a) Overall Project Schedule**

The Contractor shall submit within 1 week of Fax of Acceptance, a sufficiently detailed overall Project Schedule in the activity network form, clearly indicating the major milestones, interrelationship/interdependence between various activities together with analysis of critical path and floats.

The network will be reviewed and approved by Engineer- in-Charge and the comments if any shall be incorporated in the network before issuing the same for implementation. The network thus finalised

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shall form part of the contract document and the same shall not be revised without the prior permission from Engineer-in- Charge during the entire period of contract.

**b) Progress Measurement Methodology**

The contractor is required to submit within 1 week of award of WORK, the methodology of progress measurement of sub-ordering, manufacturing/delivery, sub- contracting construction and commissioning works and the basis of computation of overall services/physical progress informed. Owner reserves the right to modify the methodology in part or in full.

**c) Functional Schedules**

The contractor should prepare detailed functional schedules in line with network for functional monitoring and control and submit scheduled progress covers for each function viz. ordering, delivery and construction.

**48.0 COMPLETION OF THE FACILITIES**

48.1 Purchaser will take over the Work on its Completion.

**49.0 STORAGE AND PRESERVATION**

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

In case of delay in availability of site, supplies may be stored at GGPL's store and during the tenure of supplies in GGPL store, responsibility for safe custody, storage and preservation shall be GGPL, however, all loading/un-loading shall be in bidder's scope. Thereafter, beyond the point of receiving supplies from GGPL's store and till handing over of complete facility to the purchaser, responsibility of safe custody, storage and preservation shall be of bidder.

**50.0 HEALTH, SAFETY AND ENVIRONMENT (HSE)**

50.1 The Contractor will strictly adhere to HSE requirements as per Technical Specifications.

**51.0 DELETED****52.0 Instruction to Bidder**

52.1 This enquiry envisages total responsibility for complete work from design, engineering, manufacture, supply/ shipment, port handling, clearance at port of entry in India, inland transportation within India upto the designated Project Sites, all taxes, duties, levies, fees, octroi, etc. as applicable and payable by the bidders under the Contract in India, all insurance, handling of goods 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, other associated works including materials, tools/

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tackles etc., and civil works (limited to grouting of package) prior to start of work at sites till the time of installation, testing, commissioning, performance test, Site Acceptance Test, Trial Run and handing over at site to the Owner and Operation and Maintenance Work as specified in technical parts for the items stated in Price Schedule and in Technical Part.

However in case of foreign bidders, after supplying on CIF basis, bidder shall receive compressor packages from Owner's designated store for site activities & shall handle the material on complete responsibility basis till completion of work & acceptance by owner.

52.2 In case of Foreign Bidder, Custom clearance, port handling & Inland forwarding of supplies from port of entry to designated stores shall be arranged by GODAVARI Gas.

52.3 The Supplier, wherever applicable shall after proper painting, pack and crate all goods for sea/air/road/rail transportation in a manner suitable to tropical humid climatic region in accordance with the internationally accepted practices and in such a manner so as to protect it from damage and deterioration, in transit by sea or air or road or rail and during storage at the storehouse till the time of issuance to erection contractor. The Seller shall be held responsible for all damages due to improper packing. The Seller shall insure sizing for packing of all over sized consignments in such a way that availability of carrier and/or road/rail route is properly taken in to consideration. Supplier shall follow the packing, marketing and shipping instructions as per tender.

52.4 Owner shall be issuing concessional forms like Form-C or any other such forms, for availing concessional taxes/ duties by the bidder, if available.

52.5 The quoted price shall be deemed to be inclusive of all applicable taxes & duties till the complete execution of the order as applicable in India under this contract and the bidder shall not be eligible for any compensation on this account.

Both Indian and Foreign Bidders shall not be eligible for compensation by the Owner for any variations whatsoever in the aforesaid taxes/ duties/ levies, etc. as included in the total price except for statutory variation as provided under tender document. Non-compliance to the provisions of this Article as aforesaid shall lead to rejection of offer.

52.6 All Bidders are requested to indicate positively the division of work

- (a) To be directly undertaken by the Bidder
- (b) Envisaged to be undertaken by Bidder's Sub-contractor under Bidder's shall Overall responsibility.
- (c) A copy of MOU (Memorandum of Understanding) shall be furnished along with the offer.

**53.0 Overseas bidders may provide the service towards installation, configuration, testing and commissioning of Integrated CNG Compressor Package in India through their Indian subsidiaries/ associates.**

Foreign Bidder because of various constraints of distance, unfamiliarity with local and lack of any established branch office in India, may quote on the basis of tie up with any Indian Sub-contractor for the

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activities to be undertaken in India, they may do so provided their bid is submitted on PACKAGE BASIS WITH OVERALL CONTRACTUAL RESPONSIBILITY WITH THE FOREIGN BIDDER ONLY. All payments under the contract shall however, be payable to Foreign Bidders only. Payments shall be made as per 'PAYMENT TERMS & MODE OF PAYMENT' as per APPENDIX - I TO SPECIAL CONDITION OF CONTRACT.

OR

In case requested by overseas bidders, a separate order may be placed by M/s Godavari Gas Private Limited on the Indian subsidiaries/ associates of Foreign bidders towards installation, configuration, testing and commissioning of Integrated CNG Compressor Package in India. However, the foreign bidder shall be fully responsible liable for the performance of its Indian subsidiaries/ associates and the performance security for entire Package (for Foreign bidder's scope and Indian bidders scope) shall be submitted by Foreign bidder as per the provision of contract. The CPBG shall be submitted in separate parts as per the currency(ies) quoted by foreign bidder.

The scope of work by Indian subsidiaries/ associates shall be as given in the tender document for installation, configuration, testing and commissioning of various INTEGRATED CNG COMPRESSOR PACKAGE.

The foreign bidder shall submit the MOU/ Agreement indicating clear scope of work such as marine insurance, custom clearance, transportation to site etc. between foreign bidder and Indian subsidiaries/ associates, along with the signed and stamped copy of tender document, addendum/ corrigendum by Indian subsidiaries/ associates as a token of acceptance to the terms & conditions contained in the tender document / addendum/ corrigendum.

The foreign bidder shall indicate the total amount of installation, configuration, testing and commissioning of Integrated CNG Compressor Package in the Price Schedule format enclosed with the tender document.

The payment shall be released as per the Section III D towards installation, configuration, testing and commissioning of Integrated CNG Compressor Package only after approval of foreign bidder.

The foreign bidder shall be responsible for the entire scope of work including that of its Indian subsidiaries/ associates and the placement of order on Indian subsidiaries/ associates shall not release the foreign bidder towards their obligation to the conditions of tender document.

**54.0 LOCAL CONDITION**

54.1 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.

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54.2 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.

54.3 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.

54.4 The Purchaser/Consultant will not provide any power and water connection and The Contractor 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.

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

**56.0 DELETED****57.0 ARBITRATION**

57.1 Clause No. 30.4 of GCC-Goods & 107.0 of GCC-Works pertaining to Arbitration shall be replaced by the following:-

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

57.1.2 The Employer/Consultant (GGPL) shall suggest a panel of three independent and distinguished persons to the other party (Bidder/Contractor/ Supplier/Buyer as the case may be) to select any one among them to act as the sole Arbitrator.

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

57.1.4 The award of the Sole Arbitrator shall be final and binding on the parties and unless directed/awarded otherwise by the Sole Arbitrator, the cost of arbitration proceedings shall be shared

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equally by the Parties. The arbitration proceeding shall be in English language and the venue shall be at Bengaluru, Karnataka, India.

57.1.5 Subject to the above, the provisions of (Indian) Arbitration & Conciliation Act, 1996 and the rules framed there under shall be applicable.

57.1.6 All matters relating to this contract are subject to the exclusive jurisdiction of the Courts situated in the State of Andhra Pradesh (India).

57.1.7 Bidders/ Supplier/ Contractors may please note that the Arbitration & Conciliation Act, 1996 was enacted by the Indian Parliament and is based on United Nations Commission on International Trade Law (UNCITRAL, model law), which were prepared after extensive consultation with Arbitral Institutions and centers of International Commercial Arbitration. The United Nations General Assembly vide resolution 31/98 adopted the UNCITRAL Arbitration rules on 15 December 1976.

**57.1.8 DISPUTE RESOLUTION****57.1.8.1 GENERAL**

Any dispute(s)/ difference(s)/issue(s) of any kind whatsoever between/ amongst the Parties arising under/ out of/ in connection with this agreement shall be settled in accordance with provisions of this Article.

**57.1.8.1 INVITATION FOR CONCILIATION**

57.1.8.1.1 In case of any dispute(s)/ difference(s)/issue(s), as mentioned above, a Party shall notify the other party(ies) in writing about such a dispute(s)/ difference(s)/issue(s) between/ amongst the Parties and that such a Party wishes to refer the dispute(s)/ difference(s)/issue(s) to Conciliation. Such Invitation for Conciliation shall contain sufficient information as to the dispute(s)/ difference(s)/issue(s) to enable the other Party (ies) to be fully informed as to the nature of the dispute(s)/ difference(s)/issue(s), the amount of monetary claim, if any, and apparent cause(s) of action.

57.1.8.1.2 Conciliation proceedings commence when the other Party(ies) accept(s) the invitation to conciliate. If the acceptance is made orally, It is advisable that it be confirmed in writing. If the other Party(ies) reject(s) the invitation, there will be no conciliation proceedings.

57.1.8.1.3 If the Party initiating conciliation does not receive a reply within thirty days from the date on which he/she sends the invitation, or within such other period of time as specified in the invitation, he/she may elect to treat this as a rejection of the invitation to conciliate. If he/ she so elects, he/she shall inform to other Party(ies) accordingly.

**57.1.8.2 CONCILIATION**

57.1.8.2.1 Where Invitation for Conciliation has been furnished under Article 2, the Parties shall attempt to settle such dispute(s) amicably under Part-III of the Indian arbitration and Conciliation Act, 1996 and GGPL Conciliation Rules. It would be only after exhausting the option of Conciliation as an

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Alternate Dispute Resolution Mechanism that the Parties hereto shall go for Arbitration as per the provisions of arbitration clause. For the purpose of this Article, the option of 'Conciliation' shall

be deemed to have been exhausted, even in case of rejection of 'Conciliation' by any of the Parties.

57.1.8.2.2 For dispute(s)/ difference(s)/issue(s) pending before Arbitral or Judicial proceeding, pendency of such proceeding shall not constitute any bar on commencement of Conciliation proceeding and Invitation for Conciliation under Article 2, even if the Conciliation proceedings under this Article are on the same subject matter(s)/ issue(s) as the Arbitral or Judicial proceedings.

57.1.8.2.3 The cost of Conciliation proceeding including but not limited to fees for Conciliator(s), Airfare, Local Transport, Accommodation, cost towards conference facility etc. shall be borne by the Parties equally.

57.1.8.2.4 The Parties shall freeze claims (s) of interest, if any, and shall not claim the same during pendency of Conciliation proceedings.

The Settlement Agreement, as and when reached/ agreed upon, shall be signed between the Parties and Conciliation proceeding shall stand terminated on the date of the Settlement Agreement.

57.2 Clause No.107.2 of GCC-Works pertaining to Arbitration shall be replaced by the following:-

**FOR THE SETTLEMENT OF COMMERCAIL DISPUTES BETWEEN PUBLIC SECTOR ENTERPRISES (s) INTER-SE AND PUBLIC SECTOR ENTERPRISES(s) AND GOVERNMENT DEPARTMENT(s) THROUGH PERMANENT MACHINERY OF ARBITRATION (PMA) IN THE DEPARTMENT OF PUBLIC ENTERPRISES.**

"In the event of any dispute or difference between relating to the interpretation and application of the provisions of the contracts, such disputes or difference shall be referred by either party for Arbitration to the sole Arbitrator in the Department of Public Enterprises to be nominated by the Secretary to the Government of India in-charge of the Department of Public Enterprises. The Arbitration and Conciliation Act, 1996 shall not be applicable to arbitrator under this clause. The award of the Arbitrator shall be binding upon the parties to the disputes, provided, however, any party aggrieved by such award may make a further reference for setting aside or revision of the award to the Law Secretary or the Special Secretary / Additional Secretary, when so authorized by the Law Secretary, whose decision shall bind the Parties finally and conclusively. The parties to the dispute will share equally the cost of arbitration as intimated by the Arbitrator."

**58.0 CUSTOM CLEARANCE ETC. For FOREIGN BIDDERS**

Foreign bidders to quote for "Engineering, Manufacture, Procurement, Testing and Supply price of all goods on CIF basis. The break-up of same is to be furnished in Price Schedule. The prices for foreign supplies (to be quoted at sl. No. of Price Schedule) shall include all the costs and duties applicable up to FOT site.

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Import shall be done in the name of Godavari Gas Private Limited (GGPL) and import duties on such goods shall be paid directly to Indian Custom Authority by GGPL. The bidder shall furnish a copy of complete shipment document to GGPL with the amount of Import Duties to be paid at least 15 days in advance from the “pay by date” enabling GGPL to make the payment.

However, all customs clearance formalities, including payment of port levies/ charges are in the scope of bidder and shall be borne by him. The bidder shall furnish indemnity Bond equivalent to the CIF value of goods plus import duties to Purchaser before undertaking import clearance activities. The indemnity bond shall remain valid for a period of three months beyond completion period mentioned in the contract. Any delay in submitting indemnity bond and documents for payment of import duties and thus resulting in any cost/ charges to Purchaser including demurrage/ wharf age shall be to bidder's account only. Responsibility of safe custody of material while undertaking custom clearance, transportation etc. shall be with bidder only.

The import duties payable by GGPL shall be limited to applicable import duties on CIF value quoted by bidder in bid. Any import duties payable over and above quoted CIF value of foreign supplies, for whatsoever reasons, shall have to be borne by the bidder.

In case a foreign bidder proposes to supply certain goods from India, the prices for such goods shall be quoted on FOT dispatch point basis (including packing & forwarding) inclusive of all taxes and duties.

**59.0 INDEMNITY BOND**

After award of work, bidder has to furnish legal indemnity bond to owner equivalent to total price of delivered items/ equipment before Owner hands over such equipment to them for the purpose of further action as per scope of work in the format attached. The Indemnity Bond shall be valid from the date of receipt of 1st consignment at site & remain valid upto 06(six) months from date of the receipt of last consignment at site. In case of Indian bidder & from the date of receipt of 1st consignment at Indian Port & to remain valid upto six months from the date of receipt of last consignment at port.

Indemnity Bond to be executed by the supplier latest by prior to taking custody of all supplies at the time of custom clearance and transporting to site in case of foreign bidder however, in case of Indian bidder latest by the time of dispatch of supply as per format attached to General Conditions of Contract.

**60.0 RULES, REGULATIONS AND PROCEDURES**

60.1 CONTRACTOR shall observe in addition to Codes specified in respective specification, all National and Local Laws, Ordinances, Rules and Regulations and requirements pertaining to the WORK and shall be responsible for extra costs arising from violations of the same.

60.2 Various procedures and method statements to be adopted by CONTRACTOR during the construction as required in the respective specifications shall be submitted to OWNER in due time for APPROVAL. No such construction activity shall commence unless approved by OWNER in writing.

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**61. DELETED**

**62.0 ORDER OF WORKS/PERMISSIONS/RIGHT OF ENTRY/CARE OF EXISTING SERVICES**

The order in which the WORK shall be carried out shall be subject to the approval of the Engineer- in-charge and shall be so as to suit the detailed method of construction adopted by the CONTRACTOR, as well as the agreed joint programme. The WORK shall be carried out in a manner so as to enable the other contractors, if any, to work concurrently.

OWNER reserves right to fix up priorities which will be conveyed by Engineer-in-Charge and the CONTRACTOR shall plan and execute work accordingly.

**63.0 DEDUCTION FROM CONTRACT PRICE**

All costs, damages or expenses which the OWNER may have paid, for which under the CONTRACT the CONTRACTOR is liable, shall be cleared by the OWNER. All such claims shall be billed by the OWNER to the CONTRACTOR, regularly as and when they fall due. Such bills shall be supported by appropriate and certified vouchers or explanations, to enable the CONTRACTOR to properly identify such claims. Such claims shall be paid by the CONTRACTOR within fifteen (15) days of the receipt of corresponding bills and if not paid by the CONTRACTOR within the said period, the OWNER may then deduct the amount, from any amount due or

becoming due by OWNER to the CONTRACTOR under the Contract may be recovered by actions of law or otherwise, if the CONTRACTOR fails to satisfy the OWNER of such claims.

**64.0 CONSTRUCTION AIDS, EQUIPMENT, TOOLS & TACKLES**

CONTRACTOR shall be solely responsible for making available for executing the work, all requisite Construction Equipments, Special Aids, Cranes, and Tools, Tackles and testing equipments and appliances. Such construction equipments etc. shall be subject to examination by owner and approval for the same being in first class operating condition. Any discrepancies pointed out by OWNER shall be immediately got rectified, repaired or the equipment replaced altogether, by CONTRACTOR. OWNER shall not in any way be responsible for providing any such equipment, machinery, tools and tackles.

The OWNER reserves the right to rearrange such deployment depending upon the progress and priority of work in various sections.

**65.0 MAKE OF MATERIAL/BOUGHT OUT ITEMS**

An annexure of approved vendors for various major items is enclosed with this tender specification. The bidder shall consider such names only as indicated in the aforesaid list and clearly indicate in the bid the name(s) as selected against these items. However, for any other item not covered in the list enclosed with this tender document, prior approval shall be obtained by the contractor for its make/ supplier's name.

**66.0 DOCUMENTATION****66.1 "AS BUILT" DRAWINGS**

Notwithstanding the provisions contained in standard specifications, upon completion of WORK, the CONTRACTOR shall complete all of the related drawings to the "AS BUILT" stage and provide the OWNER, the following :-

- a) One complete set of all original tracings.
- b) One complete set of full size reproducibles.
- c) One complete set of reduced size (279 mm x 432 mm) reproducible copies of all drawings.
- d) One complete set of microfilm of all original drawings.
  
- e) Six complete sets of reduced size (279 mm x 432 mm) prints.
- f) Six complete bound sets of Contractor's specifications including design calculations.
- g) Six complete sets, in the form of hand bound volumes, of the manufacturer's data book for all the equipments, instruments etc. including certified prints and data. Data books shall be completed with index as to tag numbers associated with manufacturer's data shown, Equipment data shall include as a minimum requirement the principle and descriptions of operations, installation and maintenance instructions, drawings and dimensions, parts list and priced purchase orders including those of major sub-vendors and suppliers. Requirements pertaining to "VENDOR DATA REQUIREMENT" attached with standard specifications for the documents to be included in the Data Book for each equipment, instruments etc. shall also be complied with.
- h) Six bound copies each of the Spare Parts Data Books and the Lubricants Inventory Schedule.

**66.2 Completion Document**

The following documents shall be submitted in hard binder by the CONTRACTOR in THREE sets, as a part of completion documents: -

- a) Test results and reports.
- b) Pre-commissioning/commissioning check list.
- c) Performance certificate
- d) Completion Certificate issued by Owner's Site Engineer.
- e) No claim certificate by the Contractor.

**67.0 DOCUMENTS TO BE SUBMITTED/ PRODUCED ALONGWITH R.A. BILLS**

- i) Computerized R.A. Bill/ Manual Bill, with IT No./ ST No./ Labour Licence No. Printed thereon.
- ii) ESI/ EPF clearance certificates for the last month along with R.A. Bills.
- iii) Insurance Policy as per relevant clauses of Contract Agreement.
- iv) Attendance Register and Salary Records.
- v) Photocopy of the measurement book to be attached with R.A. Bills.
- vi) Any other document required for the purpose of processing the bills.
- vii) Registration Certificate with GST.

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**68.0 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. Owner will release the payment to the Contractor after effecting deductions as per applicable law in force & after offsetting all dues to the Owner payable by the Contractor under the Contract.

**69.0 DELIVERY BASIS**

Delivery basis is to be on FOT site basis.

70.0 The statement of agreed deviations shall be prepared based on the finally retained deviations if any by the Tenderer and all correspondences and MOM's held between the OWNER and the Tenderer prior to issue of Fax of intent shall be treated as Null and Void. Any deviation or stipulations made and accepted by the owner after award of the jobs shall be treated as amendments to the contract documents as above.

71.0 The OWNER may waive any minor informality or non- conformity 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.

**72.0 POST ORDER CORRESPONDENCE:**

Engineer-in-charge CGD Project  
Godavari Gas Private Limited, Rajahmundry

**73. DIRECT PAYMENTS TO SUB-VENDORS/ SUPPORTING AGENCIES OF MAIN CONTRACTOR**

Normally, the payment is to be made to vendor/ contractor only as per provision of contract. During execution, in case of financial constraints, GGPL may make direct payment to their sub-vendor/ supporting agencies as an exception from the amounts due to the vendors/ contractors from any of their bills under process upon certification by EIC subject to receipt of such request from the vendor/ contractor. Further, the request for direct payments to the sub-vendor/ sub-contractor shall be considered in performance evaluation of such vendor/ contractor.

**74. Sub-letting of works**

Pursuant to Clause No. 37 of GCC-Works:

The contractor shall not, save with previous consent in writing of the Engineer-in-charge, 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.

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However, subletting of WHOLE WORKS is prohibited. Vendor/ Contractor shall submit undertaking to this effect along with each invoice/ bill.

**75.** In case of start of installation, testing & commissioning of INTEGRATED CNG compressor package gets delayed on account of owner by more than one year from the date of delivery on site/GGPL store, bidder's quoted rates (excluding GST) towards installation, testing & commissioning of INTEGRATED CNG compressor package(s) and operation & maintenance (O&M) shall be increased by 5% per annum on annual basis subject to maximum of 10%.

**76.** Also, in case of delay in installation, testing & commissioning of INTEGRATED CNG compressor package beyond above limit of 10%, a joint inspection/assessment shall be done by GGPL & supplier to arrive at additional cost to be incurred for restoration of the package after mutual discussions.

## **SECTION – III D**

# **PAYMENT TERMS AND MODE OF PAYMENT**

**TENDER NO: GGPL/KKD/C&P/PR 2044/2019-20/11****1. TERMS OF PAYMENT**

The following shall be read in conjunction with the relevant clauses of GCC (Goods/Works)

**1.1 FOR SUPPLIES**

Payments shall be released by the Owner against pre-receipted invoice, submission of a copy of valid performance guarantee and other documents complete in all respect meeting the requirement of contract document.

**1.1.1 For Indian Bidders**

A) 85% of supply value including string test as applicable will be paid progressively by Owner within 30 days against receipt of material/ equipment at site & submission of the following documents:-

- i) Invoice in triplicate (Invoice shall enable owner to claim credit of GST as applicable. Invoice also to indicate all taxes and duties separately.)
- ii) Inspection Release note issued by inspection agency appointed by Owner.
- iii) GR/ LR
- iv) Packing List
- v) A certificate from manufacturer that all items/ equipment under supply including its component or raw material used with manufacturing are new and conform to the tender requirement.
- vi) Final technical file as per Technical Specifications/ Material Requisition including all test certificates, if applicable
- vii) A copy of legal Indemnity bond for the value of delivered items
- viii) Copy of Performance Bank Guarantee(s) of 10% of Contract Value as already submitted by supplier.
- ix) In case of delay in receipt of material at site the invoice value shall be reduced to take care of stipulation of PRS clause of the contract

B) 5% payment: On completion of Installation, erection, alignment & commissioning of Integrated compressor package units and against submission of invoice along with CAR policy (Contractor's All Risk Policy) /EAR policy (Erection All Risk Insurance Policy) valid till commissioning, completion of PG tests and final acceptance by owner. However, if, commissioning could not be completed within 120 days after supply due to non availability of site in all respects /gas, payment against erection and commissioning shall be released to the successful bidder against receipt of bank guarantee of the said amount to initially remain valid for a period of 1 year after completion of 120 days; ie; 16 months from the date of FOT site (actual) basis & validity of this BG shall be extended if required, upto a further period of 15 months (over and above initial validity of BG).

C) 10% payment: On Testing and completion of PG test of integrated compressor package unit, all other works & final acceptance by the owner and submission following additional document: -

- Acceptance certificate
- Clearance from ESIC, PF and labour authority, if applicable
- Work completion certificate
- No claim certificate

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However, if the PG test is not successful (as per guaranteed parameters defined in the tender), the provision of clause no. 7 pertaining to Loading & Compensation Criteria of TECHNICAL SPECIFICATION (Sec - VI) shall apply. In case of delay in erection and commissioning, the invoice value shall be reduced to take care of PRS clause.

1.1.3 In case the Testing and PG/Field Performance Test could not be executed within 120 days from the date of completion of Erection and commissioning due to reason directly attributable to the owner.

OR

Commissioning could not be completed within 120 days from the date of delivery of material at site due to reasons directly attributable to the owner; the balance 10% of supply value as per

1.1.1 (C) or 1.1.2 (C) shall be released after deduction against PRS clause if any and on submission of Bank Guarantee of equivalent amount which shall initially remain valid for a period of 1 year after completion of 120 days i.e. 16 months from the date of receipt of material on FOT site (actual) basis. Validity of this BG shall be extended, if required up to a further period of 15 months (over & above initial validity of BG);

**1.2 Erection, Testing, commissioning & field performance etc.**

100 % Payment on erection, testing of individual items and successful field performance test of the machine, completion of all works and on final acceptance by owner. In case of delay in erection and commissioning, the invoice value shall be to take care of PRS clause. In case the Testing and PG/Field Performance Test could not be executed within 120 days from the date of completion of Erection and commissioning due to reason directly attributable to the owner, the payment shall be released on submission of Bank Guarantee of equivalent amount which shall initially remain valid for a period of 1 year after completion of 120 days i.e. 16 months from the date of receipt of material on FOT site (actual) basis. Validity of this BG shall be extended, if required up to a further period of 15 months (over & above initial validity of BG).

**1.3 Annual Maintenance Service charges**

1.3.1 Monthly payment on pro-rata basis as certified by Engineer-in-charge shall be made against the invoices raised.

1.3.2 The date 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 Integrated compressor package 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 PG test. 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 PG test (ie, after establishing all the guaranteed parameters as per tender). Further, in case the PT is not successful, the balance 50% shall be forfeited in addition to provision of relevant clauses pertaining to Loading & Compensation Criteria of TECHNICAL SPECIFICATION.

**1.6 General Notes**

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- i) Invoice shall be raised on the basis of not less than one fortnight interval.
- ii) Invoice(s) in respect of items for which payment is to be made to Indian Associate of Foreign Bidder shall be raised by Foreign Bidder. In case it is raised by Indian Associate, same shall be duly certified and endorsed by Principal Bidder.
- iii) All efforts shall be made to release the payment within 30 days after receipt of relevant documents complete in all respects.
- iv) All bank charges incurred in connection with payments shall be to vendor's accounts.
- v) The contractor shall be responsible, on completion of contract, or wherever required, to undertake customs reconciliation work with Indian customs authorities and finalise the customs assessment by furnishing the necessary technical information etc. to the said authorities.
- vi) Unless otherwise specifically stated in bid document, all payments shall be made in the currency quoted.
- vii) No interest charges for delay in payments, if any, shall be payable by Owner.
- viii) In case of Indian bidder (Contractor), statutory variation, if any, on account of customs duty on their built-in import content, as per terms of bid document, shall be claimed separately by Contractor after receipt of goods at site(s). However, any price benefits to the Owner, on account of such variation as per terms specified in the bid document, shall be passed on to the Owner along with invoicing itself. Copy of necessary documentary evidence in support of statutory variation shall be submitted along with claim/invoice.

**2. MODE OF PAYMENT**

2.1.1. Payment will be released through E-payment or cheque as detailed in ITB clause 19.

2.3 Within 45 days after award of order, the Bidder shall furnish a detailed "Billing schedule" separately under different heads for Owner's approval and the Bidder shall raise his invoices accordingly. Such billing schedule shall also be accompanied by their shipment/ dispatch schedule.

**3. DEDUCTION AT SOURCE**

3.1. Purchaser will release the payment to the Seller after effecting deductions as per applicable law in force.

3.2. Purchaser will release payments to the Contractor after offsetting all dues to the Purchaser payable by the Contractor under the Contract.

**4.0 PAYING AUTHORITY:**

Chief Financial Officer  
M/s Godavari Gas Private Limited  
Rajamahendravaram – 533103  
Andhra Pradesh

# SECTION – V

## GENERAL CONDITIONS OF CONTRACT

(GCC)

**GENERAL CONDITIONS OF CONTRACT**

**GENERAL CONDITIONS OF CONTRACT-GOODS**

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**1       Definitions**

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

- 1.1   BIDDER : Designates the individual or legal entity which has made a proposal, a tender or a bid with the aim of concluding a Contract with the PURCHASER.
  - 1.2   CONTRACT shall mean Purchase Order/Contract and all attached exhibits and documents referred to therein and all terms and conditions thereof together with any subsequent modifications thereto.
  - 1.3   CONTRACT PRICE shall mean the price payable to the Seller under the Contract for the full and proper performance of his contractual obligations.
  - 1.4   COMPLETION DATE shall mean the date on which the goods are successfully commissioned by the Seller and handed over to the PURCHASER.
  - 1.5   COMMERCIAL OPERATION shall mean the condition of the operation in which the complete equipment covered under the Contract is officially declared by the PURCHASER to be available for continuous operation at different loads upto and including rated capacity.
  - 1.6   DELIVERY terms shall be interpreted as per INCO TERMS 2010 in case of Contract with a foreign Bidder and as the date of LR/GR in the case of a contract with an Indian Bidder.
  - 1.7   DRAWINGS shall mean and include Engineering drawings, sketches showing plans, sections and elevations in relation to the Contract together with modifications and/or revisions thereto.
  - 1.8   ENGINEER or Engineer-in-Charge of the Project SITE shall mean the person designated from time to time by PURCHASER at SITE and shall include those who are expressly authorized by him to act for and on his behalf for operation of this CONTRACT.
  - 1.9   FINAL ACCEPTANCE shall mean the PURCHASER's written acceptance of the Works performed under the Contract after successful completion of performance and guarantee test.
  - 1.10   GOODS shall mean articles, materials, equipment, design and drawings, data and other property to be supplied by Seller to complete the contract.
  - 1.11   INSPECTOR shall mean any person or outside Agency nominated by PURCHASER to inspect equipment, stagewise as well as final, before dispatch, at SELLER's works and on receipt at SITE as per terms of the CONTRACT.
  - 1.12   INITIAL OPERATION shall mean the first integral operation of the complete equipment covered under the Contract with sub-systems and supporting equipment in service or available for service.
  - 1.13   PURCHASER/ OWNER/GGPL shall mean GODAVARI GAS PRIVATE LIMITED (GGPL) having its registered office at D.N0.85-06-23/2, 2nd floor, 40th ward, Morumpudi Junction, RTC complex Road, Rajahmundry-533103. The term PURCHASER includes successors, assigns of GGPL.
  - 1.14   PERFORMANCE AND GUARANTEE TESTS shall mean all operational checks and tests required to determine and demonstrate capacity, efficiency and operating characteristics as specified in the Contract documents.
- PROJECT designates the aggregate of the Goods and/or Services to be provided by one or more Contractors.

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### Quantities – Bills of quantities

#### Bills of quantities

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

- 1.15 SELLER shall mean the person, firm or company with whom PURCHASE ORDER/CONTRACT is placed/entered into by PURCHASER for supply of equipment, materials and services. The term Seller includes its successors and assigns.
- 1.16 SERVICE shall mean erection, installation, testing, commissioning, provision of technical assistance, training and other such obligations of the Seller covered under the Contract.
- 1.17 SITE designates the land and/or any other premises on, under, in or across which the Goods and/or Services have to be supplied, erected, assembled, adjusted, arranged and/or commissioned.
- 1.18 SPECIFICATIONS shall mean and include schedules, details, description, statement of technical data, performance characteristics, standards (Indian as well as International) as applicable and specified in the Contract.
- 1.19 SUB-CONTRACT shall mean order placed by the Seller, for any portion of the contracted work, after necessary consent and approval of PURCHASER.
- 1.20 SUB-CONTRACTOR shall mean the person named in the CONTRACT for any part of the work or any person to whom any part of the CONTRACT has been sub-let by the SELLER with the consent in writing of the PURCHASER and will include the legal representatives, successors, and permitted assigns of such person.
- 1.21 START-UP shall mean the time period required to bring the equipments covered under the Contract from an inactive condition, when construction is essentially complete to the state of readiness for trial operation. The start-up period shall include preliminary inspection and check out of equipment and supporting subsystems, initial operation of the complete equipments covered under the Contract to obtain necessary pre-trial operation data, perform calibration and corrective action, shutdown inspection and adjustment prior to the trial operation period.
- 1.22 TESTS shall mean such process or processes to be carried out by the Seller as are prescribed in the Contract or considered necessary by PURCHASER or his representative in order to ascertain quality, workmanship, performance and efficiency of equipment or part thereof.
- 1.23 TESTS ON COMPLETION shall mean such tests as prescribed in the Contract to be performed by the Seller before the Works are taken over by the PURCHASER.

## 2 Seller to Inform

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

## 3 Application

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

## 4 Country of Origin

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

**5 Scope of Contract**

- 5.1 Scope of the CONTRACT shall be as defined in the PURCHASE ORDER/CONTRACT specifications, drawings and Annexure thereto.
- 5.2 Completeness of the EQUIPMENT shall be the responsibility of the SELLER. Any equipment, fittings and accessories which may not be specifically mentioned in the specifications or drawings, but which are usual or necessary for the satisfactory functioning of the equipment (successful operation and functioning of the EQUIPMENT being SELLER’s responsibility) shall be provided by SELLER without any extra cost.
- 5.3 The SELLER shall follow the best modern practices in the manufacture of high grade EQUIPMENT notwithstanding any omission in the specifications. The true intent and meaning of these documents is that SELLER shall in all respects, design, engineer, manufacture and supply the equipment in a thorough workmanlike manner and supply the same in prescribed time to the entire satisfaction of PURCHASER.
- 5.4 The SELLER shall furnish 2 (two) copies in English language of Technical documents, final drawings, preservation instructions, operation and maintenance manuals, test certificates, spare parts catalogues for all equipments to the PURCHASER.
- 5.5 The documents once submitted by the SELLER shall be firm and final and not subject to subsequent changes. The SELLER shall be responsible for any loss to the PURCHASER consequent to furnishing of incorrect data/drawings.
- 5.6 All dimensions and weight should be in metric system.
- 5.7 All equipment to be supplied and work to be carried out under the CONTRACT shall conform to and comply with the provisions of relevant regulations/Acts(State Government or Central Government) as may be applicable to the type of equipment/work carried out and necessary certificates shall be furnished.
- 5.8 The Seller shall provide cross sectional drawings, wherever applicable, to identify the spare part numbers and their location. The size of bearings, their make and number shall be furnished.
- 5.9 Specifications, design and drawings issued to the SELLER along with RFQ and CONTRACT are not sold or given but loaned. These shall remain property of PURCHASER or its assigns and are subject to recall by PURCHASER. The SELLER and his employees shall not make use of the drawings, specifications and technical information for any purpose at any time except for manufacture against the CONTRACT and shall not disclose the same to any person, firm or corporate body, without written permission of PURCHASER. All such details shall be kept confidential.
- 5.10 SELLER shall pack, protect, mark and arrange for dispatch of EQUIPMENT as per instructions given in the CONTRACT.

**6 Standards**

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

### **7 Instructions, Direction & Correspondence**

- 7.1 The materials described in the CONTRACT are to be supplied according to the standards, data sheets, tables, specifications and drawings attached thereto and/or enclosed with the CONTRACT, itself and according to all conditions, both general and specific enclosed with the contract, unless any or all of them have been modified or cancelled in writing as a whole or in part.
- a. All instructions and orders to SELLER shall, excepting what is herein provided, be given by PURCHASER.
  - b. All the work shall be carried out under the direction of and to the satisfaction of PURCHASER
  - c. All communications including technical/commercial clarifications and/or comments shall be addressed to PURCHASER and shall always bear reference to the CONTRACT.
  - d. Invoices for payment against CONTRACT shall be addressed to PURCHASER.
  - e. The CONTRACT number shall be shown on all invoices, communications, packing lists, containers and bills of lading/LR, etc.

### **8 Contract Obligations**

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

### **9 Modification In Contract**

- 9.1 All modifications leading to changes in the CONTRACT with respect to technical and/or commercial aspects including terms of delivery, shall be considered valid only when accepted in writing by PURCHASER by issuing amendment to the CONTRACT. Issuance of acceptance or otherwise in such cases shall not be any ground for extension of agreed delivery date and also shall not affect the performance of contract in any manner except to the extent mutually agreed through a modification of contract.
- 9.2 PURCHASER shall not be bound by any printed conditions or provisions in the SELLER's Bid Forms or acknowledgment of CONTRACT, invoices, packing list and other documents which purport to impose any conditions at variance with or supplemental to CONTRACT.

### **10 Use of Contract Documents & Information**

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

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necessary for purpose of such performance.

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

**11 Patent Rights, Liability & Compliance of Regulations**

- 11.1 SELLER hereby warrants that the use or sale of the materials delivered hereunder will not infringe claims of any patent covering such material and SELLER agrees to be responsible for and to defend at his sole expense all suits and proceedings against PURCHASER based on any such alleged patent infringement and to pay all costs, expenses and damages which PURCHASER may have to pay or incur by reason of any such suit or proceedings.
- 11.2 The SELLER shall indemnify the PURCHASER against all third party claims of infringement of patent, trade mark or industrial design rights arising from use of the GOODS or any part thereof in the PURCHASER's country.
- 11.3 SELLER shall also protect and fully indemnify the PURCHASER from any claims from SELLER'S workmen/employees or their heirs, dependants, representatives, etc. or from any other person/persons or bodies/companies etc. for any acts of commissions or omission while executing the CONTRACT.
- 11.4 SELLER shall be responsible for compliance with all requirements under the laws and shall protect and indemnify completely the PURCHASER from any claims/penalties arising out of any infringements.

**12 Contract cum Performance Bank Guarantee (CPBG)**

Within 15 days after the SELLER's receipt of notification of award of the CONTRACT, the SELLER shall furnish Performance Guarantee in the form of Bank Guarantee/ irrevocable Letter of Credit to the PURCHASER, in the form provided in the Bidding Documents, for an amount equivalent to 10% of the total value of the CONTRACT.

The proceeds of Performance Guarantee shall be appropriated by the PURCHASER as compensation for any loss resulting from the SELLER's failure to complete his obligations under the CONTRACT without prejudice to any of the rights or remedies the PURCHASER may be entitled to as per terms and conditions of CONTRACT. The proceeds of this Performance Guarantee shall also govern the successful performance of Goods and Services during the entire period of Contractual Warrantee / Guarantee.

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

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

**13 Inspection, Testing & Expediting**

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- 13.1 The PURCHASER or its representative shall have the right to inspect and/or to test the GOODS to confirm their conformity to the CONTRACT specifications. The special conditions of CONTRACT and/or the Technical Specifications shall specify what inspections and tests the PURCHASER requires and where they are to be conducted. The PURCHASER shall notify the SELLER in writing the identity of any representative(s) retained for these purposes.
- 13.2 The inspections and tests may be conducted on the premises of the SELLER or his sub-contractor(s), at point of DELIVERY and/or at the GOODS' final destination, When conducted on the premises of the SELLER or his sub-contractor (s), all reasonable facilities and assistance including access to the drawings and production data shall be furnished to the inspectors at no charge to the PURCHASER.
- 13.3 Should any inspected or tested GOODS fail to conform to the specifications, the PURCHASER may reject them and the SELLER shall either replace the rejected GOODS or make all alterations necessary to meet Specifications' requirements, free of cost to the PURCHASER.
- 13.4 The PURCHASER's right to inspect, test and where necessary reject the GOODS after the GOODS' arrival in the PURCHASER's country shall in no way be limited or waived by reason of the GOODS having previously been inspected, tested and passed by the PURCHASER, or their representative prior to the GOODS shipment from the country of origin.
- 13.5 The INSPECTOR shall follow the progress of the manufacture of the GOODS under the CONTRACT to ensure that the requirements outlined in the CONTRACT are not being deviated with respect to schedule and quality.
- 13.6 SELLER shall allow the INSPECTOR to visit, during working hours, the workshops relevant for execution of the CONTRACT during the entire period of CONTRACT validity.
- 13.7 In order to enable PURCHASER's representatives to obtain entry visas in time, SELLER shall notify PURCHASER two months before assembly, testing and packing of main EQUIPMENT. If requested, SELLER shall assist PURCHASER's representatives in getting visas in the shortest possible time (applicable only in case of foreign order).
- 13.8 SELLER shall place at the disposal of the INSPECTOR, free of charge, all tools, instruments, and other apparatus necessary for the inspection and/or testing of the GOODS. The INSPECTOR is entitled to prohibit the use and dispatch of GOODS and/or materials which have failed to comply with the characteristics required for the GOODS during tests and inspections.
- 13.9 SELLER shall advise in writing of any delay in the inspection program at the earliest, describing in detail the reasons for delay and the proposed corrective action.
- 13.10 ALL TESTS and trials in general, including those to be carried out for materials not manufactured by SELLER shall be witnessed by the INSPECTOR. Therefore, SELLER shall confirm to PURCHASER by fax or e-mail about the exact date of inspection with at least 30 days notice. SELLER shall specify the GOODS and quantities ready for testing and indicate whether a preliminary or final test is to be carried out.
- 13.11 If on receipt of this notice, PURCHASER should waive the right to witness the test, timely information will be given accordingly.
- 13.12 Any and all expenses incurred in connection with tests, preparation of reports and analysis made by qualified laboratories, necessary technical documents, testing documents and drawings shall be at SELLER's cost. The technical documents shall include the reference and numbers of the standards used in the construction and, wherever deemed practical by the INSPECTOR, copy of such standards.
- 13.13 Nothing in Article-13 shall in any way release the SELLER from any warranty or other obligations under this CONTRACT.

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

**13.15 Inspection & Rejection of Materials by consignees**

When materials are rejected by the consignee, the supplier shall be intimated with the details of such rejected materials, as well as the reasons for their rejection, also giving location where such materials are lying at the risk and cost of the contractor/supplier. The supplier will be called upon either to remove the materials or to give instructions as to their disposal within 14 days and in the case of dangerous, infected and perishable materials within 48 hours, failing which the consignee will either return the materials to the contractor freight to pay or otherwise dispose them off at the contractor's risk and cost. The PURCHASER shall also be entitled to recover handling and storage charges for the period, during which the rejected materials are not removed @ 5% of the value of materials for each month or part of a month till the rejected materials are finally disposed off.

**14 Time Schedule**

**14.1 Time Schedule Network/Bar Chart**

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

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

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

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

14.4 Notwithstanding the above, in case progress on the execution of contract at various stages is not as per phased time schedule and is not satisfactory in the opinion of the PURCHASER which shall be conclusive or SELLER shall neglect to execute the CONTRACT with due diligence and expedition or shall contravene the provisions of the CONTRACT, PURCHASER may give notice of the same in writing to the SELLER calling upon him to make good the failure, neglect or contravention complained of. Should SELLER fail to comply with such notice within the period considered reasonable by PURCHASER, the PURCHASER shall have the option and be at liberty to take the CONTRACT wholly or in part out of the SELLER's hand and make alternative arrangements to obtain the requirements and completion of CONTRACT at the SELLER's risk and cost and recover from the SELLER, all extra cost incurred by the PURCHASER on this account. In such event PURCHASER shall not be responsible for any loss that the SELLER may incur and SELLER shall not be entitled to any gain. PURCHASER shall, in addition, have the right to encash Performance Guarantee in full or part (if applicable),.

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**15 Delivery & Documents**

- 15.1 Delivery of the GOODS shall be made by the SELLER in accordance with terms specified in the CONTRACT, and the goods shall remain at the risk of the SELLER until delivery has been completed.
- 15.2 Delivery shall be deemed to have been made :
- a) In the case of FOB, CFR & CIF Contracts, when the Goods have been put on board the ship, at the specified port of loading and a clean Bill of Lading is obtained. The date of Bill of Lading shall be considered as the delivery date.
  - b) In case of FOT dispatch point contract (For Indian bidder), on evidence that the goods have been loaded on the carrier and a negotiable copy of the GOODS receipt obtained. The date of LR/GR shall be considered as the date of delivery.
  - c) In case of FOT site (for Indian bidders) on receipt of goods by PURCHASER/ at the designated site(s).
- 15.3 The delivery terms are binding and essential and consequently, no delay is allowed without the written approval of PURCHASER. Any request concerning delay will be void unless accepted by PURCHASER through a modification to the CONTRACT.
- 15.4 Delivery time shall include time for submission of drawings for approval, incorporation of comments, if any, and final approval of drawings by PURCHASER.
- 15.5 In the event of delay in delivery, Price Reduction Schedule as stipulated in Article – 26 shall apply.
- 15.6 The documentation, in English Language, shall be delivered in due time, in proper form and in the required number of copies as specified in the contract.
- 15.7 The additional copies of final drawings and instructions will be included in the package of goods, properly enveloped and protected.
- 15.8 The SELLER should comply with the Packing, Marking and Shipping Documentation & Specifications enclosed.

**16 Transit Risk Insurance**

- 16.1 All goods supplied under the contract shall be fully insured in a freely convertible currency against loss or damage incidental to manufacture or acquisition, transportation, storage and delivery. Transit risk insurance from F.O.T. dispatch point onwards shall be arranged and borne by Supplier.

**17. Transportation**

17. Where the SELLER is required under the CONTRACT to deliver the GOODS FOB, transport of the GOODS until delivery, that is, upto and including the point of putting the GOODS on board the export conveyance at the specified port of loading, shall be arranged and paid for by the SELLER and the cost thereof shall be included in the Contract price.
- 17.2 Where the SELLER is required under the CONTRACT to deliver the GOODS CFR or CIF, transport of the Goods to the port of discharge or such other point in the country of destination as shall be specified in the CONTRACT shall be arranged and paid for by the SELLER and the cost thereof shall be included in the Contract price.

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**18 Incidental Services**

- 18.1 The Seller may be required to provide any or all of the following services:
- 18.1.1 Performance or supervision of onsite assembly and/or start-up of the supplied Goods:
- 18.1.2 Furnishing tools required for assembly and/or maintenance of the supplied Goods:
- 18.1.3 Performance or supervision or maintenance and/or repair of the supplied Goods, for a period of time agreed by the parties, provided that this service shall not relieve the Seller of any warrantee/guarantee obligations under the Contract.
- 18.1.4 Training of the Purchaser's personnel at the Seller's plant and/or at Site, in assembly, start-up operation, maintenance and/or repair of the supplied Goods at no extra cost. However, Purchaser will bear boarding, lodging & personal expenses of Trainees.
- 18.2 Prices charged by the Seller for the preceding incidental services, shall not exceed the prevailing rates charged to other parties by the Seller for similar services.
- 18.3 When required, Seller shall depute necessary personnel for supervision and/or erection of the Equipment at site for duration to be specified by Purchaser on mutually agreed terms. Seller's personnel shall be available at Site within seven days for emergency action and twenty-one days for medium and long-term assistance, from the date of notice given by Purchaser.
- 18.4 The cost of incidental services shall not be included in the quoted prices. The cost of applicable incidental services should be shown separately in the price schedules, if asked.

**19 Spare Parts and Maintenance Tools**

- 19.1 Seller may be required to provide any or all of the following materials and notification pertaining to spare parts manufactured or distributed by the Seller.
- 19.1.1 Such spare parts as the Purchaser may opt to purchase from the Seller, provided that his option shall not relieve the Seller of any warrantee obligations under the Contract, and
- 19.1.2 In the event of termination of production of the spare parts:
- i) Advance notification to the Purchaser of the pending termination, in sufficient time to permit the Purchaser to procure needed requirements, and
  - ii) Following such termination, furnishing at no cost to the Purchaser, the blue prints, drawings and specifications of the spare parts, if any when requested.
- 19.2 Seller shall supply item wise list with value of each item of spare parts and maintenance tools requirements, along with full details of manufacturers/vendors for such spares/maintenance tools for
- 19.2.1 The construction, execution and commissioning.
- 19.2.2 Two years operation and maintenance.
- 19.3 Spare parts shall be new and of first class quality as per engineering standards/ codes, free of any defects (even concealed), deficiency in design, materials and workmanship and also shall be completely interchangeable with the corresponding parts.

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- 19.4 Type and sizes of bearings shall be clearly indicated.
- 19.5 Spare parts shall be packed for long storage under tropical climatic conditions in suitable cases, clearly marked as to intended purpose.
- 19.6 A list of special tools and gauges required for normal maintenance and special handling and lifting appliances, if any, for the Goods shall be submitted to Purchaser.
- 19.7 Bidders should note that if they do not comply with Clause 19.2 above, their quotation may be rejected.

**20 Guarantee**

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

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

If any trouble or defect, originating with the design, material, workmanship or operating characteristics of any materials, arises at any time prior to twelve(12) months from the date of the use for which the materials supplied under the Contract form a part thereof, or twenty four (24) months from the date of shipment (for each lot) whichever period shall first expire, and the SELLER is notified thereof, SELLER shall, at his own expense and as promptly as possible, make such alterations, repairs and replacements as may necessary to permit the materials to function in accordance with the specifications and to fulfil the foregoing guarantees.

PURCHASER may, at his option, remove such defective materials, at SELLER'S expense in which event SELLER shall, without cost to PURCHASER and as promptly as possible, furnish and install proper materials. Repaired or replaced materials shall be similarly guaranteed by the SELLER for a period of no less than twelve (12) months from the date of replacement/repair.

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

**20.2 PERFORMANCE GUARANTEE OF EQUIPMENT**

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

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- 20.2.2 If the SELLER fails to prove the guaranteed performance of the EQUIPMENT set forth in the specification, the SELLER shall investigate the causes and carry out necessary rectifications/modifications to achieve the guaranteed performance. In case the SELLER fails to do so within a reasonable period, the SELLER shall replace the EQUIPMENT and prove guaranteed performance of the new equipment without any extra cost to PURCHASER.
- 20.2.3 If the SELLER fails to prove the guarantee within a reasonable period, PURCHASER/ shall have the option to take over the EQUIPMENT and rectify, if possible, the EQUIPMENT to fulfil the guarantees and/or to make necessary additions to make up the deficiency at Seller's risk and cost. All expenditure incurred by the PURCHASER in this regard shall be to SELLER's account.

**21 Terms of Payment**

- 21.1 The method of payment to be made to the SELLER under this CONTRACT shall be specified in the Special Conditions of Contract.
- 21.2 The type(s) of payment to be made to the SELLER under this CONTRACT shall be specified in the Special Conditions of Contract.
- 21.3 The SELLER's request(s) for payment shall be made to the PURCHASER in writing accompanied by an invoice describing, as appropriate, the Goods delivered and services performed, and by shipping documents submitted, and upon fulfillment of other obligations stipulated in the Contract.
- 21.5 Payment will be made in the currency or currencies in which the Contract Price has been stated in the SELLER's bid, as well as in other currencies in which the SELLER had indicated in his bid that he intends to incur expenditure in the performance of the Contract and wishes to be paid. If the requirements are stated as a percentage of the bid price alongwith exchange rates used in such calculations these exchange rates shall be maintained.

**General Notes:**

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

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such variation as per terms specified in the bid document, shall be passed on to the PURCHASER alongwith invoicing itself.

8. Agency commission, if any, to Indian agent for Foreign bidders, indicated in prices, shall be paid to the agent in equivalent Indian Rupees on receipt and acceptance of material at site.

**22 Prices**

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

**23 Subletting & Assignment**

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

**24 Time As Essence of Contract**

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

**25 Delays In The Seller's Performance**

- 25.1 If the specified delivery schedule is not adhered to or the progress of manufacture or supply of the items is not satisfactory or is not in accordance with the progress schedule the PURCHASER has the right to:
- i) hire for period of delay from elsewhere goods which in PURCHASER's opinion will meet the same purpose as the goods which are delayed and SELLER shall be liable without limitation for the hire charges; or
  - ii) cancel the CONTRACT in whole or in part without liability for cancellation charges. In that event, PURCHASER may procure from elsewhere goods which PURCHASER's opinion would meet the same purpose as the goods for which CONTRACT is cancelled and SELLER shall be liable without limitations for the difference between the cost of such substitution and the price set forth in the CONTRACT for the goods involved; or
  - iii) hire the substitute goods vide (I) above and if the ordered goods continue to remain undelivered thereafter, cancel the order in part or in full vide (ii) above.
- 25.1 Any unexcusable delay by the SELLER or his sub-contractor shall render the SELLER liable, without prejudice to any other terms of the Contract, to any or all of the following sanctions: forfeiture of Contract performance guarantee (if applicable), imposition of price reduction for delay in delivery and termination of the contract for default.

**26 Price Reduction Schedule For Delayed Delivery**

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- 26.1 Subject to Article -29, if the SELLER fails to deliver any or all of the GOODS or performance the services within the time period (s) specified in the CONTRACT, the PURCHASER shall, without prejudice to his other remedies under the CONTRACT, deduct from the CONTRACT PRICE, a sum calculated on the basis of the CONTRACT PRICE, including subsequent modifications.
- 26.1.1 Deductions shall apply as per following formula:  
In case of delay in delivery of equipment/materials or delay in completion, total contract price shall be reduced by 1/2% (Half percent) of the total contract price per complete week of delay or part thereof subject to a maximum of 5% (Five percent) of the total contract price.
- 26.2 In case of delay in delivery on the part of Seller, the invoice/document value shall be reduced proportionately for the delay and payment shall be released accordingly.
- 26.3 In the event the invoice value is not reduced proportionately for the delay, the PURCHASER may deduct the amount so payable by SELLER, from any amount falling due to the SELLER or by recovery against the Performance Guarantee (if applicable).  
Both seller and PURCHASER agree that the above percentages of price reduction are genuine pre estimates of the loss/damage which the PURCHASER would have suffered on account of delay/breach on the part of the SELLER and the said amount will be payable on demand without there being any proof of the actual loss/or damage caused by such breach/delay. A decision of the PURCHASER in the matter of applicability of price reduction shall be final and binding.

**27 Rejections, Removal of Rejected Equipment & Replacement**

- 27.1 Preliminary inspection at SELLER's works by INSPECTOR shall not prejudice PURCHASER's claim for rejection of the EQUIPMENT on final inspection at SITE or claims under warranty provisions.
- 27.2 If the EQUIPMENTS are not of specification or fail to perform specified duties or are otherwise not satisfactory the PURCHASER shall be entitled to reject the EQUIPMENT/MATERIAL or part thereof and ask free replacement within reasonable time failing which obtain his requirements from elsewhere at SELLER's cost and risk.
- 27.3 Nothing in this clause shall be deemed to deprive the PURCHASER AND/OR AFFECT ANY rights under the Contract which it may otherwise have in respect of such defects or deficiencies or in any way relieve the SELLER of his obligations under the Contract.
- 27.4 EQUIPMENT rejected by the PURCHASER shall be removed by the Seller at his cost within 14 days of notice after repaying the amounts received against the SUPPLY. The PURCHASER shall in no way be responsible for any deterioration or damage to the EQUIPMENT under any circumstances whatsoever.
- 27.5 In case of rejection of EQUIPMENT, PURCHASER shall have the right to recover the amounts, if any, from any of CONTRACTOR'S invoices pending with PURCHASER or by alternative method(s).

**28 Termination of Contract**

- 28.1 Termination for Default

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- 28.1.1 The PURCHASER may, without prejudice to any other remedy for breach of CONTRACT, by written notice of default sent to the SELLER, terminate the CONTRACT in whole or in part:
- A) If the SELLER fails to deliver any or all of the GOODS within the time period(s) specified in the CONTRACT; or
  - B) If the SELLER fails to perform any other obligation(s) under the CONTRACT, and
  - C) If the SELLER, in either of the above circumstances, does not cure his failure within a period of 30 days (or such longer period as the PURCHASER may authorize in writing) after receipt of the default notice from the PURCHASER.
- 28.1.2 In the event the PURCHASER terminates the CONTRACT in whole or in part, pursuant to Article 28.1.1, the PURCHASER may procure, upon such terms and in such manner as it deems appropriate, goods similar to those undelivered and the SELLER shall be liable to the PURCHASER for any excess costs for such similar GOODS. However, the SELLER shall continue performance of the CONTRACT to the extent not terminated.
- 28.1.3 In case of termination of CONTRACT herein set forth (under clause 28) except under conditions of Force Majeure and termination after expiry of contract, the VENDOR shall be put under holiday [i.e. neither any enquiry will be issued to the party by GGPL (India) Ltd. Against any type of tender nor their offer will be considered by GGPL against any ongoing tender (s) where contract between GGPL and that particular VENDOR (as a bidder) has not been finalized] for three years from the date of termination by GGPL (India) Ltd. to such VENDOR.
- 28.2 Termination for Insolvency  
The PURCHASER, may at any time, terminate the CONTRACT by giving written notice to the SELLER, without compensation to the SELLER, if the SELLER becomes bankrupt or otherwise insolvent, provided that such termination will not prejudice or affect any right of action or remedy which has accrued or will accrue thereafter to the PURCHASER.
- 28.3 Termination for Convenience
- 28.3.1 The PURCHASER may, by written notice sent to the SELLER, terminate the CONTRACT, in whole or part, at any time for his convenience. The notice of termination shall specify that termination is for the PURCHASER's convenience, the extent to which performance of work under the CONTRACT is terminated and the date upon which such termination becomes effective.
- 28.3.2 The GOODS that are complete and ready for shipment within 30 days after the SELLER's receipt of notice of termination shall be purchased by the PURCHASER at the CONTRACT terms and prices. For the remaining GOODS, the PURCHASER may opt:
- a) to have any portion completed and delivered at the CONTRACT terms and prices, and /or
  - b) to cancel the remainder and pay to the SELLER an agreed amount for partially completed GOODS and for materials and parts previously procured by the SELLER.

**29 Force Majeure**

- 29.1 Shall mean and be limited to the following:
- a) War/hostilities
  - b) Riot or Civil commotion
  - c) Earthquake, flood, tempest, lightening or other natural physical disaster.
  - d) Restrictions imposed by the Government or other Statutory bodies which prevents or delays the execution of the Contract by the SELLER.

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

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

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

### **30 Resolution of Disputes/Arbitration**

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

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

30.3 Legal Construction

The Contract shall be, in all respects be construed and operated as an Indian Contract and in accordance with Indian Laws as in force for the time being and is subject to and referred to the Court of Law situated within Rajahmundry, East Godavari Dist. Andhra Pradesh, .

30.4 Arbitration

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

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

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

The award of the Sole Arbitrator shall be final and binding on the parties and unless directed/awarded otherwise by the Sole Arbitrator, the cost of arbitration proceedings shall be

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shared equally by the parties. The arbitration proceeding shall be in English language and the venue shall be at Rajahmundry, India.

Subject to the above, the provisions of (Indian) Arbitration & Conciliation Act, 1996 and the rules framed thereunder shall be applicable. All matters relating to this contract are subject to the exclusive jurisdiction of the Courts situated in the State of Andhra Pradesh (India).

Seller may please note that the Arbitration & Conciliation Act 1996 was enacted by the Indian Parliament and is based on United Nations Commission on International Trade Law (UNCITRAL model law), which were prepared after extensive consultation with Arbitral Institutions and centers of International Commercial Arbitration. The United Nations General Assembly vide resolution 31/98 adopted the UNCITRAL Arbitration rules on 15 December 1996.

The WORK under the CONTRACT shall, however, continue during the Arbitration proceedings and no payment due or payable to the Seller shall be withheld on account of such proceedings.

**31 Governing Language**

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

**32 Notices**

- 32.1 Any notice given by one party to the other pursuant to the Contract shall be sent in writing or by telegram or fax, telex/cable confirmed in writing.
- 32.2 A notice shall be effective when delivered or on the notice's effective date, whichever is later.

**33 Taxes & Duties**

- 33.1 A foreign Seller shall be entirely responsible for all taxes, stamp duties, licence fees, and other such levies imposed outside the PURCHASER's country.
- 33.2 A domestic Seller shall be entirely responsible for all taxes, duties, licence fees etc. incurred until the delivery of the contracted goods to the PURCHASER. However, Sales Tax and Excise duty on finished products shall be reimbursed by PURCHASER.
- 33.3 Customs duty payable in India for imported goods ordered by PURCHASER on foreign Seller shall be borne and paid by PURCHASER.
- 33.4 Any income tax payable in respect of supervisory services rendered by Seller under the Contract shall be as per the Indian Income Tax Act and shall be borne by SELLER. It is upto the bidder/seller to ascertain the amount of these taxes and to include them in his bid price.

**34 Books & Records**

- 34.1 SELLER shall maintain adequate books and records in connection with Contract and shall make them available for inspection and audit by PURCHASER or their authorized agents or representatives during the terms of Contract until expiry of the performance guarantee. Fixed

price (lumpsum or unit price) Contract will not be subject to audit as to cost except for cost reimbursable items, such as escalation and termination claims, transportation and comparable requirements.

### **35 Permits & Certificates**

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

### **36 General**

- 36.1 In the event that terms and conditions stipulated in the General Conditions of Contract should deviate from terms and conditions stipulated in the Contract, the latter shall prevail.
- 36.2 Losses due to non-compliance of Instructions  
Losses or damages occurring to the PURCHASER owing to the SELLER's failure to adhere to any of the instructions given by the PURCHASER in connection with the contract execution shall be recoverable from the SELLER.
- 36.3 Recovery of sums due  
All costs, damages or expenses which the PURCHASER may have paid, for which under the CONTRACT SELLER is liable, may be recovered by the PURCHASER (he is hereby irrevocably authorized to do so) from any money due to or becoming due to the SELLER under this Contract or other Contracts and/or may be recovered by action at law or otherwise. If the same due to the SELLER be not sufficient to recover the recoverable amount, the SELLER shall pay to the PURCHASER, on demand, the balance amount.
- 36.4 Payments, etc. not to affect rights of the PURCHASER  
No sum paid on account by the PURCHASER nor any extension of the date for completion granted by the PURCHASER shall affect or prejudice the rights of the PURCHASER against the SELLER or relieve the SELLER of his obligation for the due fulfillment of the CONTRACT.
- 36.5 Cut-off Dates  
No claims or correspondence on this Contract shall be entertained by the PURCHASER after 90 days after expiry of the performance guarantee (from the date of final extension, if any)
- 36.6 Paragraph heading  
The paragraph heading in these conditions shall not affect the construction thereof.

### **37 Import License**

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

### **38 FALL CLAUSE**

- 38.1 The price charged for the materials supplied under the order by the supplier shall in no event exceed the lowest price at which the supplier or his agent/principal/dealer, as the case may be, sells the materials of identical description to any persons/organizations including the Purchaser or

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any department of the Central Govt. or any Deptt. Of a State Govt. or any Statutory Undertaking of the Central or State Govt. as the case may be, during the currency of the order.

- 38.2 If at any time during the said period, the supplier or his agent/principal/dealer, as the case may be, reduces the sale price, sells or offers to sell such materials to any persons/organizations<sup>52</sup> including the Purchaser or any Deptt. Of Central Govt. or State Govt. as the case may be, at a price lower than the price chargeable under the order, he shall forthwith notify such reduction or sale or offer of sale to the Purchase Authority who has issued this order and the price payable under the order for the materials supplied after the date of coming into force of such reduction or sale or offer of sale shall stand correspondingly reduced.

The above stipulation will, however, not apply to:

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

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

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

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

### 39 Repeat Order

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

### 40 Limitation of Liability

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

# **SECTION – VI**

## **SCOPE OF SUPPLY AND**

## **TECHNICAL**

## **SPECIFICATIONS**

**1.0 GENERAL**

- Godavari Gas Pvt. Ltd. (GGPL), a Joint Venture of Andhra Pradesh Gas Distribution Corporation Ltd. (APGDC) and Hindustan Petroleum Corporation Ltd. (HPCL), was incorporated in September 2016 for the smooth implementation of City Gas Distribution (CGD) projects in Andhra Pradesh State. GGPL is currently executing City Gas Distribution Project in East & West Godavari Districts of Andhra Pradesh. As a part of this Project, GGPL endeavors to provide over 1 Lac Domestic PNG Connections and 12 CNG Stations over next year along with Commercial PNG Connections based on registrations across these two Districts.

**1.1 Scope**

- The intent of this tender is to outline minimum requirement for Design, Engineering, Manufacturing, Assembly, Inspection, Testing, Packaging, Supply, Erection & Commissioning including Performance Acceptance Test at site along with operation and comprehensive AMC during One year warranty period and subsequent two year period including supply of all spares and consumable items for “ ELECTRIC MOTOR DRIVEN RECIPROCATING INTEGRATED GAS COMPRESSOR PACKAGES ” as required for dispensing CNG to vehicles as per this technical specification and applicable codes as referred. 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.
- Integrated CNG Compressor Package have to be installed at the CNG outlet of GGPL and Oil and Marketing Company (OMC) retail Outlets located as per the instructions of Engineer in charge to increase the pressure of natural gas for dispensing in vehicles.
- 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 Integrated CNG Compressor package will be for minimum of 4 hours and the package should be kept under observation for 72 hours for stable operation and no major breakdown in which satisfactory performance of the package together with all accessories auxiliaries and controls shall be established for satisfactory performance for specified operating conditions.
- It will be the endeavor of all the parties to get the performance acceptance test (PAT) at site conducted within a period of 20 days from the start of commercial operation of a particular package. The bidder has to keep the Integrated CNG Compressor package operational round the clock and all the expenditures including spares and consumables, oil etc. to make the Integrated CNG Compressor package operational shall have to be borne by the bidder. The power required to run the Integrated CNG Compressor packages will be provided by GGPL/ OMC. The vendor shall maintain the Integrated CNG Compressor packages in sound mechanical condition at all times. The vendor shall rectify the defects notified by GGPL immediately and should submit all the history log sheets and spares availability status along with the report in the format mutually agreed between GGPL and the bidder.

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- The bidder shall depute adequate numbers of qualified, experienced and competent persons and supervisors for smooth maintenance of the Integrated CNG Compressor packages. The maintenance staffs have to be available round the clock daily throughout the year.
- Periodic inspections of Safety Valves, Transmitters, Pressure vessel gauge and any other equipment as per statutory norms of Factory Rules 1950. 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 have to be carried out by competent persons as per advice of Engineer-in-Charge and certificates have to be submitted to GGPL.
- The bidder shall allow weekly rest and restrict daily working hours of his workmen as per relevant Act/Law/and Rule made there under. However no work shall be left incomplete/ in dismantled condition on any holiday/weekly rest. Technician provided shall have minimum qualification of ITI. The bidder in person or his authorized representative shall be available on regular basis to interact with Engineer –in-charge.
- The work force deployed by the bidder for the maintenance services at the CNG installation in East and West Godavari districts shall be of sound relevant technical professional expertise which is otherwise also essential from the safety point of view of the personnel of the vendor as well as for the installation.
- All personnel of the bidder entering on work premises shall be properly and neatly dressed while working on premises of the company including work sites.
- Bidder shall maintain proper record of his working employee's attendance and payment made to them.
- The bidder's representative/supervisor shall report on regular basis to the Shift-in-charge at GGPL control rooms for day to day working.
- All the safety rules and regulations prevailing and applicable from time to time at the installations as directed by GGPL will be strictly adhered to by the Vendor and his workforce.
- The bidder shall plan schedule maintenance in consultation and prior permission of Engineer in-charge or his representatives.
- The bidder shall be responsible for the discipline and good behavior of all his personnel deployed to carry out the services. In case of any complaint received against any of his employee, he shall arrange to replace such persons within 24 hrs 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 Vendor.
- The bidder shall arrange to supply/renew identity cards to his workforce at his own cost. The vendor's personnel shall be required to carry their respective identity cards while on duty and produce on demand. Without valid identity cards, they will not be allowed to enter into the CNG station.
- Engineer-in-charge shall have authority to issue instructions to the Vendor from time to time during the contract period necessary for the purpose of proper and safe execution of the contract and the Vendor shall carry out and bound by the same. In case of non-fulfilment of any obligations under the contract and /or non- execution of

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any instruction issued by Engineer-in-charge as per terms and conditions of the contract, Engineer-in-charge shall have power to withhold payment for an amount equivalent to the amount to be spent for execution the obligations/instructions issued by him. The decision of engineer-in-charge in this regard will be final and binding to the Vendor.

- Receipt at site, storage in warehouse as per manufacturer's recommendation and safety and security from theft and breakage during transportation, handling including security guard at site.
- Submission of drawings & documents.
- Erection, O&M and all others relevant manuals for Integrated CNG Compressor package & its accessories, priority panel, electrical motor & all instrumentation.
- General Requirement

The vendor 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.

**A. ACCOMMODATION/ TRANSPORTATION/ MEDICAL**

The vendor 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 work place or any other place as required and owner shall have no obligation in this respect.

**B. DISCIPLINE**

The vendor 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 vendor.

**C. GATEPASS / 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 vendor's personnel shall be required to carry their respective identity cards while on duty and produce on demand.

**D. 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 vendor, if the vendor 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.

- E. GGPL 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.

## **2.0 OPERATION AND MAINTENANCE**

### **During Warranty**

#### **Operation and Maintenance of Integrated CNG compressor package during warranty period and after warranty period for 2 years:**

- The vendor shall deploy adequate number of technicians / supervisors / Engineers / helpers as well as tools, spares, consumables and equipment for smooth and proper maintenance of the Integrated CNG Compressor package supplied in terms of the contract. In case required to meet operational requirements, the vendor shall augment the same as per direction of Engineer-in-Charge. Vendor to submit a detailed organogram with key person details before starting maintenance of the Integrated CNG Compressor package.
- The vendor 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 vendor 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 vendor for maintenance service of Compressors, Dispenser & cascade shall be of sound relevant technical professional expertise which is otherwise also essential from the safety point of view of the personnel of the vendor as well as for the installation.
- Vendor has to 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 vendor shall make his own arrangements to provide all facilities like boarding and transport etc. to his workmen.
- All personnel of the vendor 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.

- Vendor shall maintain proper record of his working employee's attendance and payment made to them.
- The vendor'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 vendor.
- It will be the responsibility of the vendor to pay as per the minimum wages of the appropriate 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 vendor 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 vendor shall establish a central control room to operate 24 hours, seven days a week where complaint regarding non-performance of the Integrated CNG Compressor packages in terms of the contract can be lodged. Further, the vendor 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 Integrated CNG Compressor packages.
- All arrangements for communication from control room to the contract person working on job under the services shall be the responsibility of the vendor, viz. cell phone .
- The successful bidder shall indemnify the Owner from any claim of the contract labour.
- The bidders / vendor 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 fortnightly basis both in hard and soft form as per GGPL format.
- The vendor has to 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 Integrated CNG Compressor package breakdown, summary of break down hours for that month and the cumulative break down hours along with breakdown response time.
- Integrated CNG Compressor package parameter log book for the month.
- Certificate to be given by the bidder stating that they have complied with all the labour regulations and are following the minimum wages act.
- Maintenance of Integrated CNG Compressor package packages during the warranty period.
- All 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.

- Vendor to furnish the list of consumables required for normal operation of the integrated compressor package and the time interval between change of the consumables like filters, valve repair kit for both solenoid valve, 2- way & 3-way valves, breakaway coupling, display, reset switches etc.
- All tools, tackles and fixtures required for carrying out the above maintenance of the Integrated CNG Compressor package 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 provide the detailed preventative maintenance schedule along with
- Estimated down time required for each type of maintenance schedule.
- List of spares and their quantities required for each type of maintenance schedule per Integrated CNG Compressor package.
- Type and number of man days required for each type of maintenance schedule per Integrated CNG Compressor package.
- The bidder shall plan such maintenances during non-peak hours and in consultancy with the Engineer In Charge (EIC) of GGPL. Any maintenance that needs to be taken up shall be well planned in advance 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 GGPL representative during maintenance. In case, the schedule maintenance of the OEM manual recommends to check and replace parts like valve spring, valve plates, piston rings etc. after certain time interval, same shall be replaced or used further only on approval from the GGPL 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 bidders account.

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- 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.
- All parts replaced by the bidder during the above contract period shall be properly packed and handed over to GGPL, on replacement.
- The vendor 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 Integrated CNG Compressor package parameter log book, complaint log book, service report, break down summary report etc. shall be in scope of the bidder.
- The entire 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 GGPL representative and submitted immediately after carrying out the maintenance. Service report format shall be approved by GGPL.
- The EIC will be final authority to take decision with regards to maintenance or replacement of parts or any disagreement between the bidder and GGPL, 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 GGPL. 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 retesting of pressure vessels periodically i.e. every year or earlier as per Gas Cylinder rules 2016 / Static & Mobile Pressure Vessels Rules.

**After Warranty**

**Operation and Maintenance of Integrated CNG compressor packages after warranty period for 2 years:**

- All spares, consumables, oil and lubricants required for carrying out the Operation and Maintenance of the complete Integrated compressor packages for 2 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 Integrated CNG Compressor package shall be in scope of the bidder. The scope will also include handling equipments like crane, forklift, chain pulley block, etc required during the any maintenances activity.

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- 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 GGPL. Any maintenance that needs to be taken up shall be well planned in advance 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 to check and replace parts like valve spring, valve plates, piston rings etc. after certain time interval, same shall be replaced or used further only on approval from the GGPL 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 vendor.
- Parts replaced by the bidder during the above contract period shall be properly packed and handed over to GGPL, on replacement.
- The vendor 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.
- The bidder has to replace coalescent filter at least once every year during comprehensive maintenance period.
- In case of a breakdown in the dispensing unit at site, during the validity of the maintenance contract, the vendor shall respond and repair the equipment within 6 hours from the time of notification of the breakdown. The time of breakdown and repair shall be recorded in the GGPL's Control Room. In case, the complaint is not attended within the allocated time, penalty as per the commercial terms shall be applicable.
- A Log Book for time records shall be maintained in the central Control Room (Vendors) wherein the records shall be made for the time integrated compressor package develops trouble and the time at which the trouble is rectified by vendor's maintenance staff.
- Statutory compliances like calibration of safety relief valve, PT, PG & stamping of weights & measure dept. will be in vendor's scope for comprehensive maintenance duration and shall be done minimum once in a year.

### **3.0 CODES AND STANDARDS**

The following National & International Codes & Standards of Latest editions shall be applicable. OISD 179, NFPA-52: 1995 or equivalent

NFPA – 37

NFPA – 12- CO2 Flooding system

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IS: 325/ IEC or International standards. – Standards for electric Motor IS: 6382

Applicable ANSI, ASTM, NEC,  
NEMA code. API – 618

API – 11P 2<sup>nd</sup> edition

API – 661 Specifications for Air cooled exchangers

ASME Section – VIII Div – 1/2 Design codes for pressure vessels. Gas Cylinder Rules 2016.

Standard Specifications of Bureau of Indian Standards (BIS).

Specifications/Recommendations of IEC.

Indian Electricity

Rules. Indian

Explosives Act.

Factory Rules, 1950

ASME / ANSI – B-31.3 Code for Process Piping

**4.0 PRECEDENCE**

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

1. Data sheets/drawings
2. Technical Specification
3. International standards/codes as applicable
4. Indian Standards / codes as applicable

Compliance with these specifications 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 be accepted and offers not in compliance to the same shall be rejected. In case a deviation is required due to inherent design of the equipment offered, the bidder shall list all such deviations at one place giving reasons thereon.

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

- (1) Formats, duly filled in along with general reference list shall be submitted for the earlier supplied CNG compressor packages as per the BEC requirements.
- (2) Checklist duly filled in with regards to scope of supply
- (3) Completely filled in Data Sheets of compressor, motor
- (4) Deviations if any to this Technical Specification
- (5) Tentative Lay out/key plan/General Arrangement Drawing 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 Integrated CNG Compressor package, motor, instrumentation & controls
- (8) Certificate from Compressor block manufacturer towards guaranteed shaft power calculation at 400 SCM per hour compression (on given parameter) and from Motor manufacturer towards their KWh consumption (KWh on guaranteed parameters) on above guaranteed shaft power to be submitted by bidders along with bid. A confirmation is required from bidders prior to bid opening.

**5.0 PROCESS PARAMETERS**

Complete Integrated CNG Compressor package shall be suitable to work under the following climatic conditions:

The climatic conditions to be considered for selection, design and derating of equipment shall be as indicated below:

- Amb. temp min/max<sup>0</sup>C : 14<sup>0</sup>C / 45<sup>0</sup>C
- Max. RH : 90% in the month of July
- Min. RH : 28% in the month of January
- Altitude above MSL, M : 25
- Typical Gas Composition Range

Component	Avg Gas Composition (mol%)
Nitrogen	0.14681
Methane	93.49718
CO <sub>2</sub>	1.53676
Ethane	1.97711
Propane	1.79066
i- Butane	0.33204

n-Butane	0.39690
i-Pentane	0.09208
n-Pentane	0.07182
n-Hexane	0.21
GCV	9479.5
NCV	8554.4
Specific Gravity	0.6057

**NOTES:**

- O<sub>2</sub> not more than 0.5% mole. Total non-hydrocarbon not more than 2.0%.
- Total S including H<sub>2</sub>S not more than 10 ppm by weight.
- H<sub>2</sub>S not more than 4 ppm by volume.
- Moisture content in the range of 112 to 114 kg/MMSCM

NOTE: Integrated CNG Compressor package guaranteed performance shall be estimated for the design gas composition and performance shall be reported for the two extreme gas compositions above.

Both average over life cycle shaft power consumption & gas loss certificate from compressor block manufacturer to be provided.

**6.0 SCOPE OF SUPPLY FOR EACH INTEGRATED CNG 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, Equipment performance test along with associated electricals, instrumentation etc. as per bid document.
- Bidder need to submit either the copy of valid type approval for offered integrated compressor package from PESO or copy of application towards the same along with the bid.
- 3 nos. mass flow meters to measure the Natural Gas consumption at packages inlet – 1 no. & package discharge – 2 nos. (part of dispenser section), both Coriolis type. The flowmeters should be enabled with MODBUS/RS 485 communications.
- 1 No Thermal Mass flow meter to measure Vent Loss. ( Refer Annexure-V for Specifications )
- Instrumentation and control system as specified on data sheets including Local panel, Console/Local gauge boards, PLC.
- Common structural steel skid for the compressor- Motor combination and for all auxiliary systems including cascade, dispenser, priority panel, control panel etc.

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- Air-cooled heat exchanger for inter stage and discharge gas.
- 6 line (3 bank) Priority Panel at Compressor Discharge.
- All interconnecting oil, gas, water, air piping within the compressor package, including priority panel, cascade & dispenser & interconnecting tubing.
- Impulse and pneumatic piping/Tubing for all valves, fittings as specified & required for mounting the instruments.
- Junction boxes as required for interfacing to compressor package mounted control panel.
- NRV at final discharge.
- Structural supports within the Integrated CNG Compressor package for all piping, instruments etc.
- One no. relief valve at each stage discharge, first (1st) stage suction and Blow Down Vessel.
- 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. according to manufacturer safe design.
- Coupling/V-belts/pulleys.
- Acoustic enclosure for Integrated CNG Compressor package, with one number L.E.L detectors and one number UV detectors in the enclosure.
- Common CO2 extinguishing system consisting of two cylinders, piping, valves and control systems as per details given in this specification.
- Compressor Inlet and outlet manual and automatic isolating valves for maintenance & emergency.
- Complete Erection, Testing & Commissioning of integrated compressor packages.
- Field Performance test at site
- Supply of all essential spares as specified, erection & commissioning spares.
- One set of priced spare parts catalogue along with the priced bid (Part-II), as built drawings and Operation & Maintenance catalogue with each Integrated CNG Compressor package.
- An oil drain pot outside of the package shall be provided to collect all drains from packing, distance pieces, processes etc. The capacity of the drain pot should not be more than 2.5 Litres.
- Only air cooled and lubricated compressor with suction/discharge volume bottles (dampers) for each stage (separators) with manual drains and automatic drain system, lube oil system, closed circuit cooling water system (console type)/Air cooled according to manufacturer safe design.
- Priority refueling system inside of the package.
- Drive belt, if used shall be anti-static fire retardant type.
- Duplex suction filters to be provided outside at the inlet of package with DP gauge after

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- Y- type strainer.
- Two stage filtration at discharge so as to limit oil carryover is to be provided.
- Three no. Emergency stop button (push type) along with one hooter in office/customer interface room.
- Wires mesh type guard for heat exchanger fan.
- Secondary lubrication system with check valve protector, HP Filter (for all lubricating points) & DNFT flow switches with standby pump according to manufacturer safe design. Secondary lubrication system with divider block shall be provided.
- Erection, O&M and all others relevant manuals for integrated compressor package & its accessories, priority panel, electrical motor & all field instruments, dispenser, storage cascade etc. for easy operation & trouble shooting.
- Annual Operation and comprehensive maintenance services for a period of 1 year during the warranty period, including supply of all spares and consumable items.
- Annual Operation and comprehensive Maintenance services for a period of 2 (Two) years after the warranty period including supply of all spares and consumable items.
- Three banks 750 Water Liter (minimum) capacity Cascade. (Detail specification REFER SECTION-2)
- CNG Dispenser (1 no.) and Interconnected SS tubes & fittings. (Detail specification REFER SECTION-3).
- Supply of Communication Cables, cable glands, termination of cable and cable laying from dispenser & Compressor PLC (in Integrated package) to junction box is in Vendor's scope. Supply of standard make, WP IP 42 junction boxes, terminal blocks and installation of junction box shall be in Vendor's scope. Junction box shall have 8 inputs cables entry points (side) and two outgoing entry points including spare (bottom), cable entry from top is not accepted, size of junction box to be decided by vendor. All the spare entry shall be plugged properly. Vendor shall be responsible to provide all the signals at the junction box which will be connected to RTU in future. During installation & commissioning of dispenser same will be checked by GGPL's Engineer.
- Communication cable is single pair (1Px 1.5mm<sup>2</sup>), multi strand, armored cable with HR PVC insulation and PVC st2 inner and outer sheath. Tentative cable length from each dispenser to junction box is approx. 50 meters, however vendor shall provide cable length as per requirement.
- Vendor must share junction box termination details with GGPL.
- All Instruments & electrical equipment shall be supplied with double compression type of cable glands tested & certified to be used in hazardous area classified as Zone-I.
- Appropriately plugged drain valves of the filter outside the dispenser housing with suitable arrangement to collect the drained oil to facilitate the operator to drain the oil on regular basis without requiring to open the lock of the dispenser cabinet. The layout of tubing and other component should be such that it gives unhindered access

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to all parts and maintenance becomes easy.

- GGPL's Logo and name to be displayed on dispenser side, in GGPL approved colour scheme. GGPL's Logo and name shall be painted on stainless steel panel with an appropriate coloured background or alternatively, vendor shall provide self-adhesive PE film sheet with GGPL's Logo and name. The artwork shall be of three colours. The colours, Logo size and name size shall be informed to successful bidder during detailed engineering.
- On-Site Training to GGPL personnel (Three days each for three separate groups).
- Training to GGPL personnel at vendor's shop (10 personnel for three working days). The travelling, boarding & lodging of GGPL's Engineers shall be borne by GGPL. The training module shall cover the equipment construction features, operational & maintenance procedures, practical hands on experience on assembling, dismantling, etc.
- Integrated Compressor package shall be suitable for outdoor installation without roof / shed.
- From safety point of view, manufacturer to provide Compressor, Cascade & Dispenser in three separate sections, isolated from each other using heavy acoustic wall.

**7.0 EXCLUSIONS**

The following are excluded from the scope of the bidder:

- All civil works and foundation design, however the bidder shall furnish all the relevant data for design of any pedestal if required.
- All piping beyond battery limits except from air compressor & air piping for air and piping from CO2 cylinders up to the enclosure.

**8.0 BATTERY LIMITS**

- Supplier shall arrange its own ups supply for testing, installation and commissioning compressor control circuitry. UPS of adequate rating along with battery backup to be part of vendor's scope.
- All customer interface connections (i.e. Gas inlet & gas outlet) shall be brought out to the package edge.
- 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. Silencer has to be provided in the starting air vent line.
- All drains from different process equipments, distance piece and packing shall be manifolded and terminated as single point for customer interface duly flanged with isolation valve. Drains should be through a common header and discharge to be allowed in a pit to avoid spillage around Integrated CNG Compressor package.

**9.0 UTILITIES**

- Any auxiliary motor above 10 hp shall be provided with star delta/ soft starter (three phase controlled) type starter. Single phase motor will be not acceptable above 1 hp rating.
- Bidder shall make his own provision for Instrument air if required with an electric motor driven air compressor with a suitably sized receiver & Refrigerant type air drier system. Air Compressor motor should be 415 V squirrel cage motor DOL / star delta starter having overload protection, single phase preventer. Gas based actuator to be used for compressor & dispensers hence no air compressor is required
- Drain should be through a common header and discharge to be allowed in pot outside the package (capacity not more than 2.5 litres) to avoid spillage around the Integrated CNG Compressor package.
- All electrical and instrumentation terminals shall be as specified.
- Purchaser shall provide 415 V, 3Ph, 50Hz, 4 wire electric power for compressor motor drive at a single point.
- Purchaser shall provide the 230V, 50Hz, 1Ph UPS, 3 wire for LCP at single point in the electrical room.

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**SECTION – I:  
TECHNICAL SPECIFICATION FOR CNG  
COMPRESSOR**

**1.0 GENERAL DESCRIPTION**

The Integrated CNG Compressor package is to be installed at CNG station. The gas will be tapped from GGPL pipeline. The gas composition is as detailed above.

**A. GENERAL DATA**

1.1	Compressor type	
1.1.1	Oil lubricated	
1.2	Type of cooling	Gas cooling and cylinder cooling should be by air only.
1.3	No. of compression stages	03
1.4	Cylinders	Horizontal / Vertical Balanced Opposed design with lined cylinder/trunk piston Design.
1.5	Maximum intake temperature	40°C
1.6	Compressor package BKW at Specified flow including all losses such as mechanical, leakage, transmission & power absorbed by compressor driven and other electric driven auxiliaries.	To be indicated in KW Detailed break up to be given as per Annexure –I
1.7	Maximum motor power	To be indicated with 10 % margin over BKW as per Annexure - I
1.8	Drive mode	V- belts/Direct coupled. Direct drive (from prime mover to compressor) is preferred over belt driven. Power Transmission should be thro' flexible coupling.

**B. COMPRESSOR PERFORMANCE DATA**

2.1	Gas pressure at compressor inlet	14 to 19 Kg/Cm <sup>2</sup> g
2.2	Compressor Discharge Pressure	255 Kg/Cm <sup>2</sup> g at 52 deg. C (Max)
		Compressor Discharge temperature 52 °C (After cooler) with ambient air temperature of 47.5°C and gas inlet temperature of 35°C (max.).
2.3	Compressor speed	To be indicated by bidder.
2.4	Ambient Conditions	
2.4.	Ambient temperature	1.7 °C to 47.5 °C.

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2.4. 2	Maximum relative humidity	90 %
2.5	Required guaranteed capacities of electric motor driven compressor packages at rated suction pressure and discharge pressure as mentioned below:	
	Rated Suction pressure at which guaranteed flow is required, and at 35 deg. C (MAX), in Kg/Cm <sup>2</sup> g.	Rated Discharge pressure in Kg/Cm <sup>2</sup> g and at 52 deg. C (MAX.)
	16	255

Hereinafter the rated suction pressure, where guaranteed flow is required, will be referred as Rated Suction Pressure, which means 16 Kg/Cm<sup>2</sup>g for 400 SCMH compressors. Suction pressures will be measured at inlet flange of the Integrated CNG Compressor package. Bidder has to ensure that compressors are designed such that the desired flow is achieved (without any negative tolerance) at Rated Suction Pressure.

**Note:**

- No advantage shall be given in case bidder offers compressor with flows higher than as detailed above for various types.
- Bidders offer shall be based on firm and final compressor model on which basis the offer shall be evaluated and no alternate compressor model or change of model, after submission of bid shall be entertained / considered. This is very important and all bidders shall take full cognizance of this matter before submitting the bid.
- Bidder to indicate the capacity and absorbed power of the offered compressors at various suction conditions starting from 14 Kg/Cm<sup>2</sup> g to 19 Kg/Cm<sup>2</sup> g (Temperature 40 deg. C max.) and 255 Kg/Cm<sup>2</sup>g and 52 deg. C (max) discharge condition.

Performance curves and tables i.e. Flow versus suction pressure and temperature and power curves i.e. absorbed power versus suction pressure and temperature at specified discharge conditions shall be furnished. In addition to above, flow capacity and absorbed power values for suction conditions from 14 Kg/Cm<sup>2</sup> g to 19 Kg/Cm<sup>2</sup> g in steps of 0.5 Kg/Cm<sup>2</sup> shall also be given in tabular form. The graph shall be plotted at various suction pressures ranging from 14 Kg/Cm<sup>2</sup>g to 19 Kg/Cm<sup>2</sup>g and at various suction temperatures ranging from 20° to 40° C. Similarly the graphs shall be plotted at various discharge pressures ranging from 200 Kg/Cm<sup>2</sup>g to 255 Kg/Cm<sup>2</sup>g, however at 52° C (max) discharge conditions.

- Bidder to note that the compressor package required shall be suitable for operating at a suction pressure from 14 Kg/Cm<sup>2</sup>g to 19 Kg/Cm<sup>2</sup>g at 40 deg. C. Reduction of suction pressure by means of pressure regulating valve (PRV) is to be achieved. Gas inlet pressure regulator of 300# class rating with an outlet discharge range of

10 Kg/Cm<sup>2</sup> g to 30 Kg/Cm<sup>2</sup> g adjustable shall be provided within the compressor package.

Bidder to note that negative tolerance on the guaranteed capacity will not be acceptable. Also no advantage shall be given for positive tolerance of the capacity.

## **2.0 SAFETY**

- a) 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.
- b) 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.
- c) All exposed rotating parts shall be provided with adequate guards of non-sparking type.
- d) Driver belt if used shall be of anti-static and fire resistant type.
- e) 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.
- f) Each package ENCLOSURE shall have One no. (1) LEL detectors (IR Type) and one no. (1) Ultra Violet (UV) fire detectors to cover the enclosure effectively as already spelt in the scope of supply.
- g) All material used in the package shall be flame retardant.
- h) Relief valves shall be provided at suction and discharge and each inter stages of compressor with setting as per cl.7.20.4 of API-11P with R.V. venting as per cl. 7.20.4 of API-11P. All vented to common relief valve header.

## **2.1 Carbon Dioxide (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) Gas Detection by installation of hydrocarbon gas detector (IR type) with self check function (have self diagnostic LED to show the "HEALTHY" and "FAULTY" status) and transmitter with adjustable alarm levels (0-100%) with preset of 10%, 20% and 50%. Package should have at least 2 nos. gas detectors.
- b) Installation of flame detector (UV-IR type) and transmitter, alarm on detection of flame. Package should have at least 2 nos. flame detectors.
- c) CO2 flooding system shall consist of 2 nos. of min 45 kg CO2 cylinders. However actual size of the cylinder shall be as per compressor enclosure size. Necessary calculation shall be submitted by the bidder during detailed engineering. One cylinder will act as main cylinder & other as stand by, which shall have identical arrangement and connected to the system. The cylinders shall be protected from weather and direct sunrays as per Gas Cylinder Rules, 2016. Cylinders shall be fitted with actuated Valves, Solenoid valves, limit switches, pressure switch etc. for automatic actuation. Control philosophy shall be such that

- 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 simultaneously.
  - iii) On detection of flame by any of the flame detector, the solenoid valve of selected cylinder will open and CO2 will be flooded into the package.
  - iv) At that time, pressure switch will open (NO) because of pressure in CO2 header. If the selected cylinder is empty, then pressure switch will operate (NC) and PLC will give signal to open solenoid valve of other cylinder, if flame is detected by flame detector.
  - v) Even after discharge of selected cylinder, If flame remains detected by flame detector, other cylinder can also be operated after 20 sec (Settable from display) from the time of selected cylinder valve energized irrespective of pressure switch signal.
  - vi) The limit switch provided on the weighing machine will be connected to PLC to indicate that the CO2 cylinders are full. Both are start permissive for compressor. i.e. if any cylinder is empty as sensed by limit switch, compressor will not start. If the operator wants to run the package even if one of the cylinders is empty, the compressor can be run by putting Limit Switch in BYPASS mode for obtaining start permissive.
  - vii) When maintenance override switch put in BYPASS mode to keep the system off during maintenance, CO2 Solenoid valve shouldn't operate, even on detection of flame by any of the flame detector
- d) Facility shall be made to operate the system manually from remote with the help of a switch/ call point and with help of pull down lever on cylinders. In this regard, manual switch / call point shall be provided to operate the desired (Main / Standby) CO2 cylinder remotely from control room and Pull down lever shall be provided on each cylinder valve for manual operation
- e) Following Selector switches shall be provided .:
- i) One selector switch shall be provided in LCP to put Main/Stand by Cylinder in line at the turn of a switch as per requirement.
  - ii) One maintenance override switch shall be provided in LCP to keep the system off during maintenance.
  - iii) One switch shall be provided in LCP to bypass desired limit switch
  - iv) One switch in control room to operate CO2 remotely
- f) 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.
- g) CO2 Cylinders shall be provided with explosion-proof fittings.

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- h) Online weight (CO<sub>2</sub>) loss indication device to be provided to ascertain the health of the CO<sub>2</sub> flooding system.
- i) All installation and instruments shall be compatible for hazardous area Class 1, Division 1, Group-D for Methane Gas
- j) Technical specifications, Operation and Maintenance Manual, CCOE Certificate i.e. Approval / Manufacturing certificates for cylinders and cylinder valves, gas detectors, flame detectors, solenoid valves etc. shall be furnished by the supplier along with system. Software and hardware, calibration procedure shall be provided by the supplier along with the supply sufficient enough to handle the system independently.
- k) System shall be tested by the supplier after commissioning at site by creating fire signal and actual discharge of CO<sub>2</sub> Gas from the Cylinders. The cylinders have to be refilled by the vendor at no extra cost to purchaser after testing. If the system fails during testing, subsequent testing and refilling would be at vendor's cost.
- l) Warning and Operating instructions to be displayed at equipments as per the statutory/ safety regulations.
- m) Health status of CO<sub>2</sub> system shall be monitored & controlled through PLC.
- n) Specifications:

**Non Return Valve for CO<sub>2</sub> High Pressure Hose:**

As per BIS

specifications

Operating Media:

CO<sub>2</sub>

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 CO<sub>2</sub> Discharge

Hose end Temp. Range: -29° C to 66° C

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**Hose Adopter:**

As per BIS

specifications

Operating Media:

CO<sub>2</sub> 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:

CO<sub>2</sub>

Body Material: Lead Tin Bronze as per BIS:

318:1981 Design Nozzle Pr.: Not less than

20.6 kgf/cm<sup>2</sup> at 27° C Test Pressure: 140

kgf/cm<sup>2</sup>

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: CO<sub>2</sub>

Hose Type: Double wire braided (perforated)

rubber covered Min. Bursting Pr.: 420 kgf/ cm<sup>2</sup>

at 54° C

Length: 40

cm Cross-

section: ½"

End Connection: ½" BSP (F)

xW21.614 TPI End Fittings: Brass

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Temp. Range: -29° C to 66° C

**2.2 Following warning and caution signage shall be marked on the housing/package:**

**“No Smoking”**

Caution notice “This Machine may automatically start at any time”.

**“Flammable Gas”**

**3.0 BASIC DESIGN OF COMPRESSOR**

**3.1** Following specification is intended to give the bidder the technical and operating conditions the compressor must fulfil.

3.1 The bidder shall meet all applicable statutory codes, national law and local regulation for safety and environment protection.

3.2 The design shall conform to API 618 / API 11P, 2nd edition / other relevant reputed international standards/Gas application design (bidders to indicate).

3.3 Cylinders of compressor should be horizontal/vertical balanced/ trunk piston design. Compressor shall utilize preferably separate suction and discharge valves. Valve should be of preferably plate or spring type (non- metallic type) developed specifically for Natural gas.

3.4 Compressor cylinder shall be provided preferably with removable liners.

3.5 State of the art technology shall be applied to the piston ring to ensure reliability and oil control with polymer rings fitted to the final stage according to manufacturer safe design. The bidder to indicate the life of piston rings of all stages in terms of running hours.

3.6 Each pressurized component of the compressor package shall be subjected to hydraulic proving test and the final assembly shall be performance tested and certified.

3.7 The inter stage and final stage cooler tube material shall be carbon steel. Bidder to submit cooler sizing calculation for review.

3.8 All gas piping shall be designed, fabricated and tested in accordance with ANSI B 31.3.

3.9 The relief valve sizing shall be in accordance to IBR, ASME code for boiler & pressure vessel and API RP-520. The relief valve and associated piping shall be sized for full block discharge.

3.10 Compressor maximum vibrations of cylinders shall not exceed 10 mm/sec. unfiltered peak velocity. Maximum vibration level 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 or Vibrations should be limited according to manufacturer safe design.

3.11 In case of lubricated cylinder & packing design, single plunger per point force feed mechanical lubricator shall provide lubrication to compressor cylinders. Lubricators with double ball check valve shall be provided at each lubricator point. Digital no flow

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- timer shall be provided to stop the compressor in case of loss of cylinder lubrication.
- 3.12 The bidder along with the offer shall furnish the recommended lubricating oil type, grades & specification along with their quantity and frequency of change. The recommended oil shall be compatible with gaskets, O-ring, seals, packing, lubricator parts and other parts coming into contact.
- 3.13 Coolant tank must be provided with proper opening for flush/ clean of the tank, so that coolant level trip system works properly. Switch position should be such that sludge doesn't deposit on float sensor. Material of coolant make up tank should be SS304.
- 3.14 Gauge panel with physical gauges for temperature and pressure shall be provided and should be visible from outside of the package. LCD display as an extension of PLC display is not acceptable.
- 3.15 Proper oil draining system for the package is required. Packager should provide proper pocket system in package structure for draining coolant/ oil from inside the package. Package base frame block must be interconnected & slope must be provided.
- 3.16 Level trips of oil & coolant must be provided with wire open alarm according to manufacturer safe design.
- 3.17 Package inlet flow meter should have isolation valve in upstream and NRV/Valve at downstream of flow meter. Flow meters which are on piping should be connected with flexible hoses and should have proper clamping support to avoid vibration so that correct reading are observed.
- 3.18 All cables entries should be from bottom/side in the FLP boxes (local control panel). There should be no cabling from the bottom of the package. All the cables should be routed from the side or top for easy trouble shooting.
- 3.19 All instruments and their cables should be at appropriate distances from the exhaust line/hot parts.
- 3.20 Status of all field instruments viz. switches should be displayed on PLC.
- 3.21 Direction of flow should be marked on the pipe line and nomenclature of all vessel (e.g. 1st stage discharge dampener etc.) should be written on them. Cross head inspection windows should be transparent for easy of inspection during running. Set values should be prominently marked on the gauges.

3.22 Accessories To Be Included

Gas tight crankcase ZERO venting. Packing case & pressure packing. Drive motor with pulley/flywheel Inter-stage coolers for all stages.

Final cooler.

Oil pump, oil  
filter Oil cooler.

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Crankcase breather piped back to suction.

Oil/moisture separators appropriate for selected cylinder configuration.

Automatic condensate drains system for all separators to remove oil / moisture periodically and ease starting.

Separator drain valves piped to collection drain block suitable for connection to gas recovery system. Safety relief valve on each stage of compression.

Safety relief valve discharges connected to common manifold suitable to allow dispersion of gas via a vent stack and flame arrestor / trap.

PRV at the inlet of the  
system. BDV at the inlet  
of the system.

Interconnecting piping between cylinders, coolers and  
separators. Pulsation dampeners.

Interconnecting water piping between radiator and  
compressor. Interconnecting instrumentation piping.

Suction & Discharge Mass  
flow meter Thermal Mass  
flowmeter for vent loss Priority  
panel with SS tubing- 3Bank  
Cascade -3 Bank

Dispenser -3Bank

- 3.23 Offered package shall be complete with compressor, electric motor, piping, cooling system, suction and discharge filters, priority fill system, control panel safety and control devices and other accessories required for automatic and safe operation of the system. The supply shall include all interconnecting piping/tubing/cables. Cooling system shall be of closed circuit type. Only lubricated and air cooled compressor block is acceptable.
- 3.24 The compressor package control system shall be designed for unattended safe operation in automatic mode and shall unload, start, load, stop safely. The compressor shall start in auto in case high bank storage pressure falls below 200 bar(g) and stop once the pressure in all three banks of storage cascade reaches 250 bar(g).

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3.25 Integrated 6 line (3 bank) priority fill system to be provided. The priority fill system shall ensure filling as per following sequence:

- CNG Vehicle
- High bank of storage cascade.
- Medium bank of storage cascade
- Low bank of storage cascade
- The priority fill system shall ensure that in any case CNG vehicle shall be given first priority. Compressor shall be designed to ensure flow capacity as follows:

S No	Suction Pressure	Flow Capacity
1.	Minimum flow capacity as on-line integrated compressor at suction pressure of 16 kg/cm <sup>2</sup> g.	400 sm <sup>3</sup> /hr.

Maximum BkW = As per bidders design

Motor Rating = To be indicated by the Bidder

Maximum power requirement including the accessories to be indicated by the bidder and shall be minimum for the requested performance.

Noise level shall not exceed 75  $\pm$ 3dBA at 1m from the compressor package enclosure.

Framework shall be mounted on a suitable skid type base, external-lifting lugs shall be provided at each corner. Duplex Suction filter, air compressor & UPS (if applicable) & CO<sub>2</sub> flooding system can be placed separately (outside of the canopy) for optimization of the foot print size. However, rest all items i.e. flow meters, priority panel, cascade, dispenser, junction boxes & PLC Control panel etc. should be enclosed / mounted on the same frame & maximum footprint of that compressor frame Package shall 1.5 m (W) x 3.7 m (L) X 4 m (H). These package dimensions & integration of all accessories is essence of this tender & hence any deviation in these values & integration will not be accepted.

- 3.26 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.
- 3.27 An automatic restart shall be provided on restoration of power with a 10-second delay after temporary interruption. Existing alarm condition shall remain indicated.
- 3.28 The compressor shall be vented into BDV before restarting in order to avoid overload to the main drive. In any case venting of gas to atmosphere is not allowed. There is need to have a blow down vessel so that gas is vented to vessel. The size of the BDV should be the sufficient to allow main drive to start. BDV volume to be designed in such a way that gas accumulated in the process should not be vented out in any case of

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main power supply failure /stopping/ emergency push of package. Calculation for BDV volume shall be considering 20% higher than calculated volume and it should be calculated on higher range (19 bar) of the operating pressure (14 bar to 19 bar). Bidder shall submit calculation for same at the time of designing/drawing approval to client. BDV should be preferably placed on top of package and if placed inside package, it should be in vertical position.

### 3.29 Prime mover (Electric Motor)

The motor shall be flame proof/ explosion proof and confirm to IS: 2148 suitable for zone 1 group II area as per IS/IEC. The Motor shall be of standard frame size as per IS/IEC and rated for continuous duty with high efficiency and shall be designed for star-delta starting. The Motor shall be provided with class 'F' insulation, however, temperature rise shall be limited to the temperature specified for class 'B' insulation as per IS and shall be suitable for voltage variation of 415V+ 10%. The bidder shall indicate the guaranteed total power requirement in KW. The motor rating shall be 110% of the greatest BkW required by the compressor.

### 3.30 Motor

#### Specification

#### Electric Motor

a) Type of drive Totally Enclose Fan Cooled (TEFC) high efficiency as per IEEMA standard-19-2000

b) Protection Flame proof & weather proof enclosure

c) Insulation Class F with class B temperature rise

d) Mounting Horizontal Foot Mounting

e) Specification standard By Bidder

f) Supply Voltage(assumed) 415+ 10% volt, 3 phases, 50+ 5% Hz

g) Synchronous speed By bidder

h) Motor rating By Bidder

i) Motor Efficiency By Bidder

j) Power factor By Bidder

k) Speed of motor By Bidder

l) Nos. of hot starts of motor 4 per hours

m) Coupling Type By Bidder

n) Torque speed curve By Bidder

o) Starting torque

Speed, thermal withstand curve load, current speed curve, Efficiency power factor vs load curve by Bidder Motor Accessories

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- a) Compressor grooved flywheel (if any)
- b) Motor grooved drive pulley (if any)
- c) Drive VEE belts (if any)
- d) Flexible coupling for direct drive
- e) Drive guard
- f) Adjustable motor slide rails for belts tensioning to be used (if any)

**Preferable Makes shall be as follows:**

- a) FLP motors:- ABB / Crompton Greaves / Kirloskar / Siemens / Bharat  
Bijlee / Weg,
- b) FLP Switch:- Baliga / FCG / FPE / Flexpro
- c) Switches/fuses/contactors:- L&T/GEC/Siemens
- d) Cables & wires:- INCAB/Universal/ASEAN/CCI/FortGloster/ Finolex/KEI/  
Polycab/ Havells
- e) IR Gas Detectors:- General Monitors/ Crow on / Honey Well / Sieger /  
Detronics/ESP
- f) UV Flame Detectors:- General Monitors/ Crow on / Honey Well / Sieger/  
Detronics  
Barriers/Isolators/ Surge Protectors: MTL/Phoenix/P&F/  
Aspro/ESP
- g) Pressure Transmitters :- Druck / Wika / Honey Well / ABB/ Rosmount/  
WAREE
- h) Pressure Safety valves:- BHEL, OFE & OE Group Keystone valves India pvt ltd.,  
Baroda Sevim  
Sarasin valves pvt ltd, /Halol/ Fanger Leser, Tyco Sanmar,  
Parcol SPA Itly,  
Nuopignone Itly, Sarasin, France, Taj Milano SPA, Itly,  
Fisher Rosemount (Now Emerson Process) Singapore /  
Aspro, Argentina
- i) Pressure & Temp. AN instruments Pvt Ltd, Delhi/General  
Instruments Gauges : Ltd, Mumbai / Wika / Ashcroft/ BAUMER
- j) RTDs : General Instruments Pvt Ltd, Mumbai/  
Nagman Sensors Pvt Ltd / Pyro Electric /  
Wika / Siemens/ Baumer
- k) SS Tubing & Fittings: Swagelok/ Parker / Sandvik / FAE, Argentina /  
ABAC Argentina/ VOSS for CNG application
- l) Plug Valve for Air & Water: Nordstrom Valves Inc., USA/Serck Audco valves,

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UK/Sumitomo Corporation, New Delhi/Fisher  
Xomox Sanmar India Ltd, New Delhi/L&T  
(Audco India Limited, Chennai)

- m) Solenoid valves /Actuator: Operated Valves Asco/Rotex/Parker  
Hanifen / Habonim Vass / Jefferson/ Micromecanica /  
Festo
- n) On off ball/needle valve Parker/Swagelok / ABAC / Spirax Sarco / Worcester for  
CNG application:
- o) Pressure & temperature switch: Infos / Switzer / CCS

**Note:**

- 1) Motor shall be three phase, AC, asynchronous, flameproof, high efficiency (IE2 or better, as per IEC60034-30), Ex'd' rated, continuous duty, service factor 1.1, on IEC standard type. Designing shall be done on basis of 50 degrees package ambient temperature. Motor shall be suitable for soft starter. Service factor shall not play any role in finalizing the rating of motor.
- 2) Main Motor Starter: Soft-starter
- 3) Considering all de-rating factors as applicable, rating of soft starter (at 50 degree Celsius) shall match or be greater than the selected main motor rating.
- 4) Soft starter panel, LCP or any other power/ control panel need to be appropriately forced cooled to maintain the temperature favorable for switch gear employed in panel.
- 5) Appropriate cable (wrt: size, material, and shielding) to be used for soft starter drive.
- 6) Routing of soft starter and power cable shall be separated from control supply/ instrument cables.
- 7) Successful Bidders shall take prior approval of the Make for the items not covered above for which complete technical credentials of the proposed vendors shall be required to be submitted for evaluation by Purchaser/ Consultant
- 8) Some of the items indicate only Indian makes. Successful foreign bidders may take prior approval of any other make also for which complete technical credentials of the proposed vendors shall be required to be submitted for evaluation by Purchaser/ Consultant

3.31 Cooling system

Each compressor package shall be complete with its own cooling system. The cooler shall be air-cooled heat exchanger. The gas temperature after after-cooler shall not exceed 52 degree C.

Special attention to be given while designing the gas cooler considering the local conditions. Bidders shall ensure that final delivered gas temperature is less than 52<sup>0</sup>C.

Direction of flow should be marked on the pipe line and nomenclature of all vessels (e.g. 1st stage discharge dampener etc.) should be written on them. Cross head

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inspection windows if applicable should be transparent for ease of inspection during running. Set values should be prominently marked on the gauges.

Packages design should be such that its vent should not go upward (package vent in vertical direction not required) i.e opening of package vent should be in horizontal directional with duct arrangement.

**3.32 Oil Filter**

The ingress of oil into CNG adversely effects vehicle emission and storage system. Only lubricated cylinder compressors are allowed and vendor shall supply oil separators after cooler at each stage with automatic drain. The maximum permissible oil content in CNG is 5 PPM.

Vendor to supply a proven, maintenance free oil removal system after after-cooler to remove oil from compressed gas. The offered oil mist removal system shall restrict the oil to less than 5PPM in discharge of compressor.

**3.33 Gas recovery system**

If required, the Vendor shall provide gas recovery system with gas recovery vessel. The gas recovery vessel shall be provided with pressure relief valve and necessary instrumentation to avoid cold flaring of gas. Gas recovery vessel shall be ASME/IBR code designed.

**3.34 Piping & Appurtenances**

The materials for gas piping shall be seamless carbon steel of ASTM A-106 Grade B. The piping / tubing at the outlet of the compressor and of priority fill system shall be of seamless stainless steel of proper pressure rating and specifications as under:

**SS TUBING SPECIFICATIONS:**

- Seamless SS Tubing
- Material of construction Stainless Steel 316L
- Tube hardness shall be less than 80 RB
- Make : Sandvik / FAE/ TUBACEX (SCHOELLER-BLECKMNN)/ PARKER
- Sizes : Metric system (inch)
- Max Working Pressure : 326 bar(g)

**SS FITTINGS & VALVES SPECIFICATIONS:**

- Material of construction Stainless Steel 316
- Make : Swagelok / Parker / ABAC/ VOSS
- Sizes : Metric/SI
- Standard : ASTM/ ASME/ DIM
- End connections : Single or Double ferrule Compression type / NPT
- Max Working Pressure : 326 bar(g)

- PSV Vent Line to be extended above the package to safe height.

3.35 Electrical System

- All electrical equipment of compressor package shall be installed in accordance with NFPA 70, NEC for Class 1, Division 1, Group D, and IS 5571 and shall have approval of a recognized certifying authority.
- GGPL shall provide 415+ 10% volts, 3 phase and 50+ 3% Hz electrical connection at CNG station electrical panel only. Vendor shall distribute electrical power to all equipment and control system by providing cables and suitable switch-gear distribution panel.
- The electrical power supply distribution panel, switch gear panel and starter shall be in flame proof construction. 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.
- Heavy duty on-load phase changeover should be provided for H.E motor.
- Semiconductor fuses to be provided, where applicable.
- All illumination fittings should be single phase AC supply based.
- All wire/ cable to be used in compressor and panel shall be of copper conductor and FRLS type through proper cable tray conduit etc.
- Compressor Motor and hence soft starter should always start on NO-LOAD for all start method (AUTO or MANUAL mode), selected for operation of compressor, no matter whatever may be the last stopping mode of the compressor viz, programmed or un-programmed. Loading in motor in no manner shall be more than the value as defined by motor manufacturer in motor characteristic curves.
- Sufficient space to be provided for Motor JB for cable glanding work.
- Suitable arrangement to be provided for easy extraction of motor from package
- Multifunction meter to be provided for metering of package total energy and other parameters (viz; KVAH, KWH, Voltage, current, PF, Frequency, MDI (KVA), MD (KWH) inside the panel and output display shall be on HMI screen.
- Bidder to ensure that spares and service support of all switchgears, soft starter, instruments, or meter etc used in package/ panel, shall be available in Indian market.
- The power factor (PF) of the whole electrical system should not be below 0.95.
- Motor feeder shall be provided with energy meter, MCCB with single phase presenter , contactors (AC-3 Duty), bi-metal relay switch fuse unit, earth leakage relays & voltmeter, push buttons, (for start/stop/trip/ etc. Ammeters should be part of PLC HMI . Stop push buttons shall be lockable and have stay put except in case of critical devices such as lube oil pumps etc.

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### 3.36 Earthing System

The design & installation of earthing system shall be as per IS 3043 or equivalent international specification. One or more no of earth plates with provision of inter connection to main earth grid shall be provided. All hardware used for earthing system shall be hot dip galvanized or zinc passivated.

All cables shall be terminated at equipment by means of double compression type compression glands and shall be flame proof cable glands if located in hazardous area

### 3.37 Phase sequence preventer (Current based) shall be provided

### 3.38 Vibration

Compressor maximum vibration 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 5mm/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 or vibrations should be limited according to manufacturer safe design.

## 4.0 **INSTRUMENTATION & CONTROLS**

### 4.1 All the instruments and control shall be suitable for area Class I, Group D, Division I

### 4.2 All package mounted transmitters & temperature elements shall be intrinsic safe as per IEC 79-11 and solenoid valves, switches and related junction boxes shall be flame proof 'd' as per IEC 79-1. Other special equipment / instrument, where intrinsic safety is not feasible or available, shall be flame proof/ explosion proof as per IEC 79-1. All pressure gauges shall have an accuracy of + 1% of FSD and 65mm dial size. Pressure sensing elements shall be of SS316 and movement of SS304. All pressure gauges on process lines having range more than 40kg / cm<sup>2</sup>g.

### 4.3 There shall be provision of two suction Coriolis based mass flow meters inside the compressor package. Flow meters shall be suitably installed and clamped as per OEM guidelines/ recommendations to avoid measurement errors due to external vibration. Relevant calibration certificates to be provided. Flow meters should have integral display to show instantaneous values of mass flow. The totalizer readings from the flow meter should be communicated to PLC and PLC shall record the flow readings. Shift wise, day wise and month wise flow totalizer readings should be available in PLC display.

### 4.4 One number Thermal Mass flowmeter for measuring Vent loss shall be installed as per Manufacturer's design.

### 4.5 The temperature gauge shall be generally mercury in steel field type. Capillary tubing shall be min. SS304 with SS flexible armouring. The gauge shall have an accuracy of +1% FSD and 65mm dial size. The range shall be 1.5 times of operating temperature. 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 transmitters and should be independent from temperature gauges installed on local gauge panel. The compressor package instrumentation & control is to be configured for manual as well fully automatic control system including starting, shutdown as applicable for unattended

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operation.

- 4.6** 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.
- 4.7** Each cable shall be neatly tagged & dressed for each instrument.
- 4.8** PLC should be preferably Siemens PLC /Schneider make selection will be as per Bidder/manufacture standard to handle required input/output data specified in the tender .
- 4.9** 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 multichannel for easier replacement.
- 4.10** All the instrumentation shall be capable or operating for full range of operation.
- 4.11** 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.
- 4.12** Suitable bypass for interlocks shall be provided for start-up.
- 4.13** Compressor package shall be provided with the following indicators:

- Pressure indicator each stage suction and discharge.
- Oil pressure indicator on each pressure lubrication system
- Compressor jacket water coolant temperature indicator on local gauge 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. High oil temperature devices
  - b. Low suction pressure protection devices
  - c. High discharge temperature protection device
  - d. 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 high oil temperature
- On low suction gas pressure

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- 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
- 4.14** Compressor package shall be furnished with following tripping circuit (the motor shall stop and suction of compressor shall be isolated)
- On actuation of gas detector alarm.
  - On actuation of flame detection alarm.
  - On pressing of manual stop button at compressor package
  - On pushing of emergency stop device
- 4.15** Each compressor package shall be provided with an audible and visual alarm system for annunciation on compressor abnormalities.
- 4.16** Junction box shall be of explosion proof type with 10% extra terminal strip & cable gland shall be of double compression type.
- 4.17** Gas detectors and flame detectors should be mounted with the canopy.
- 4.18** ESD button (3 Nos.) shall be provided (Customer Interface room, locally mounted on package and Panel). A separate hooter for customer interface room shall be provided with annunciation window alarm of individual protection device.
- 4.19** All instrument shall be of internationally reputed manufacturer
- 4.20** Emergency shut down devices
- 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.
- 4.21** Compressor mounted Control Panel
- There shall be two independent ports available in the PLC with all the parameters available on each individual port.
  - One 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.

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- Second 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 GGPL 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 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. GGPL 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 Connectivity as per details in Annexure-IX.
- Local control panel shall be furnished with annunciation window (HMI) 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 rest & test button for checking healthiness of annunciation system will be part of HMI.
- PLC shall be housed inside flameproof IIA/ IIB (Ex'd'). Local operator panel shall also be provided on the flameproof enclosure. The operator panel is provided for parameterization, indication, monitoring, and alarms and first out sequence of the system. PLC system shall have memory modules for storing user programs, symbol lists, program comments and should facilitate debugging/ trouble shooting without the application program. Program shall be ladder logic and communication shall be in English for each run. Program should have signal/ parameter tags as labels for easy identification/ troubleshooting. Each section of the program whether it is in the form of rung or page or network should have comment to classify the interlock being executed. A soft copy of the program should be sent by email/ CD.
- PLC & electronic shall be housed in flameproof control panel & shall be mounted on compressor skid itself. Main cable entry shall be bottom to up. Also control panel shall have 2 nos. spare 2.5 sq mm slots with copper gland arrangement.

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- Bidder to quote for complete package with all relevant panels required for the compressor to perform as desired. The electric panel shall consist of electric MCC, switchgear, contactors, power supply distribution panel etc. and shall be located in hazardous area. The compressor package with control panel (including PLC and other controls) and other electric/ electronic instruments etc. shall meet hazardous area classification of Class I, Division I, Group D as per NEC or Zone I, Group IIA/ IIB as per IS/ IEC.

### 4.22 Priority fill system

Vendor shall supply 3-bank (6 line) priority fill system with compressor top-up facility inclusive of regulating valves, check & by pass valves, all mounted inside the integrated CNG compressor package. 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 bar(g). Compressor shall start on pressing of manual start push button & automatically when the cascade storage high bank pressure of compressor falls to 200 bar(g) and shutdown automatically when all 3 stages of stationery cascade are filled to a pressure of 250bar(g).

### 4.23 Documents

- 4.23.1 Operation and Maintenance Manual (In English) – 05 Copies
- 4.23.2 Calibration certificates of all instruments & devices
- 4.23.3 P&ID Diagrams
- 4.23.4 Interlock Block Diagrams
- 4.23.5 Bill of Material with Tag No & Technical Specifications
- 4.23.6 Wiring Diagram of Electrical & Instrument Panel
- 4.23.7 Electrical Power & Control Diagram
- 4.23.8 Specifications of Electric Motor & Characteristic Curves
- 4.23.9 Foundation Drawings
- 4.23.10 Capacity vs. Suction Pressure curve
- 4.23.11 Capacity vs. Energy Consumption curve
- 4.23.12 List of spares for two years of operation and maintenance. The list of spares should include ordering specification and manufacturer's catalogues and price.
- 4.23.13 List of special tools & tackles to be provided along with the bid.

### 5.0 **SKID AND ENCLOSURE**

Each compressor module shall be housed within a purpose built SS 304 acoustic enclosure only. The units shall incorporate a rigid framework with a combination of fixed and removable panels. Filling of Class A melamine self-extinguishing polyurethane (PU) foam specifying the maximum burn extent, with UL certification or better shall be used in acoustic enclosure.

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The enclosure shall be assembled onto the package base plate at the supplier's works to give a fully transportable unit.

Enclosures shall be designed to include cooling air inlet and outlet louvers together with a forced ventilation system to prevent the possibility of gas build up inside the enclosure. Suitable interlocks shall be built in for clearing entrapped gases (if any) within the enclosures before the startup of the electric motor / compressor.

Packages design should be such that its vent should not go upward (package vent in vertical direction not required) i.e. opening of package vent should be in horizontal directional with duct arrangement.

The maximum temperature within the enclosure shall be limited to ambient + 80°C. Adequate ventilation fans shall be provided to meet the above and also to account heat dissipation of the coolers/ all other components.

Enclosures shall be engineered to give a noise level of maximum  $75 \pm 3$  Dba + measured at 1 meter as standard, utilizing Melamine filled self-extinguishing, low smoke Polyurethane (PU) foam. Specifying maximum burn extent with UL certification covering aluminum or steel with perforated steel inner face. Materials shall be non-combustible to deter spread of flame requirements.

The enclosure shall be designed for ease of access to the equipment within and has suitable entry doors.

To prevent the discharge of gas into the enclosure, all safety relief valves within to be connected to a manifold. From this connection a single pipe passes through the enclosure roof to a vent stack to allow satisfactory dispersion of gas at a height of minimum 3m above ground level.

A viewing window at operating level to be fitted to allow monitoring of gauges, etc. without entering the enclosure.

External emergency stop push-button shall be fitted to wall of enclosure close to main access door. Total 3 Nos. of Emergency shut off push buttons with hooter. One to be provided local at package mounted area, one on panel and one in customer interface room (control / sales room). Bidder to assume that the sales / control room and compressor area, each, will be max 50 Mtrs away from the compressor. Bidders to include the cables along with cable trays / flexible PVC ducts for Emergency stop push buttons and have to install the same at the site. Cables shall be PVC insulated with steel armored and of 1.1 KV grade. Any unutilized cables shall be returned to GGPL with no extra cost.

Enclosure shall have gas detection & Fire detection system consisting of 01 no. Infrared type LEL detectors and 01 no. flame detectors (UV type) shall be provided. The detectors shall be re- calibrated at site during commissioning. Also the performance of the detectors shall be demonstrated at the time of commissioning.

Adequate fixed flameproof lighting (minimum at 1 location) shall be provided inside the enclosure.

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Bidder shall optimize the compressor package for minimum possible space requirements considering space constraints of sites where the compressors are proposed for installation.

Suitable gradient shall be provided on the enclosure roof for rain drainage and to avoid water pockets. Enclosures shall be designed with proper rain protection in the ducting or any other cut out to protect the inside equipment from rain water.

For handling of all heavy parts for maintenance purpose suitable lifting arrangement shall be provided according to manufacturer standard i.e. beam fitted with chain hoist arrangement or similar. The chain hoist arrangement i.e. chain pulley block shall be removable type, which can be disassembled and shifted onto the other machines. 1 no. each shall be provided for tendered quantity of compressors. Eye bolt arrangement shall be provided on heavier components like electric motor, cylinder crankcase, and wherever felt necessary for lifting during maintenance.

The bidder shall also provide 1 nos. monkey ladder for safe climbing on the top of the canopy along with hand railing on the top for ease of maintenance and operation.

Jack arrangement required for alignment of the motor. All FLP lighting inside enclosure should have LED lamp.

The bidder shall be providing a degree of protection equivalent to IP44 as defined in AS 1939. All the pressure temperature & level indicators shall be visible from outside of enclosure.

The package shall be protected by automatically operated CO2 flooding system designed as per NFPA-12, which should have minimum following features as stated clause 4.1 of technical specification.

**Painting and protection:**

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

Painting of Internal process piping should be either manufacturer standard or as per international color coding standard, e.g.- Gas line-Yellow, Water line- green, Airline-Blue, Fire suppressing system – Red etc. The paint

shall be chosen, primed and applied to have a service life of ten years the exterior of equipment and enclosure is required to be corrosion free for ten years.

**6.0 INSPECTION & TESTING**

- a) For all the shop inspection & tests specified to be witnessed by GGPL or GGPL's authorized representative. The bidder has to provide 15 days advance notice prior to said inspection & test. The bidder shall be responsible for all sub bidders of

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specified inspection & testing requirements.

- b) Bidder shall keep following data available for at least 5 years for examination by purchaser.
- c) All necessary certification of materials, such as mill test reports.
- d) Purchaser specification for all items on bills of materials.
- e) Test data to verify that requirement of the specification have been met
- f) Result of quality control test.
- g) Pressure retaining parts including auxiliaries shall be hydrostatically tested with water at following minimum test pressure for a minimum period of 1 hour :
  - Cylinder: 1-1/2 times maximum allowable working pressure.
  - Cylinder cooling jacket & packing case 1-1/2 times coolant pressure but not less than 8 bar(g) effective.

**6.1 Mechanical Running Test (MRT)**

- a) These tests shall have mechanical operation of compressor, driver and accessories, Instruments, control system and the coolers.
- b) 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
- Bearing temperature
- Oil cooler inlet and outlet temp

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

- Bore & other parts by opening a valve
- Piston & cylinder clearance
- 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.

**6.2 Mechanical String Test**

Mechanical String Test for 4 hrs. is a mandatory requirement to be performed at packager's shop before dispatch in presence of GGPL representatives (or a third party as arranged by GGPL). This test can be clubbed up with the Mechanical Run Test of compressor as specified above, provided the job driver & lube Oil system is used for

the test. At least 25% of the package lot ordered shall be string tested. String test on N2 or air is not acceptable. It shall be on natural gas.

### **6.3 Erection, Testing & commissioning at Site**

The bidder shall be responsible for erection, testing, commissioning & performance test and noise level test of all packages at site. Commissioning of various equipment and systems shall be carried out by the bidder as per the accepted procedures and as per the instruction of the manufactures of the equipment. The units will be considered commissioned only after the successful performance tests are carried out by the bidder.

The bidder shall ensure integrity of compressor package and safety of electrical supply system available at back end while testing package, at site. Also, bidder shall arrange its own control/ single phase (UPS supply) for testing and commissioning of package.

### **6.4 Field Trial Run**

Bidder shall conduct a field trial run of each online compressor package for minimum four hrs. in which satisfactory operation of complete package together with all accessories controls shall be established for specified operation conditions. In case of any defect, discrepancies under specified site conditions, bidder shall first rectify the same and repeat the field trial run. The bidder shall record data of field trial run.

### **6.5 Noise Level Test**

During the field trial run, noise level test shall be carried out and bidder shall demonstrate /achieve the granted noise level. All necessary instruments /accessories required for fields trial run and noise level test shall be arranged by the bidder.

### **6.6 Performance Acceptance Test (PAT)**

Before conducting performance acceptance test at site, Bidder is required to clear all punch points (if any) raised by GGPL / GGPL's authorized representative.

Compressor Package Performance test at sites shall be carried out as per ASME PTC9/equivalent according to manufacturer standard. All necessary instruments/accessories required for this test at site shall be arranged by the bidder and repatriated after successful performance test by the bidder.

All such instrument shall be pre-calibrated. In case any defect/deficiency is noticed under the specified site conditions bidder shall first rectify the same and repeat the performance test. Bidder to quote for performance test per compressor package separately at site inclusive of boarding, lodging office space, local transport for bidder personnel and hiring ;of local contractor, crane etc. bidder shall be liable to pay all local taxes, levies applicable and strictly comply with rules, laws prevailing in India.

### **7.0 GUARANTEE, LOADING AND PENALTY CRITERIA**

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The bidder shall furnish the guaranteed value for the following:

Compressor Capacity: Compressor shall guarantee the capacity as mentioned in Guaranteed Parameters.

Compressor BkW: Bidder shall indicate guaranteed BkW including all losses such as mechanical, transmission etc.

Motor Power Output of the prime mover (KW)

Total power required for the package including power consumed by accessories.

- **Compressor Capacity**

Bidder shall guarantee 400 SCM/hr. capacity (as the case may be) of compressor with design case gas composition, at suction pressure of 16 kg/cm<sup>2</sup>g, suction temperature of 35°C, discharge pressure of 255 kg/cm<sup>2</sup>g with the negative tolerance for errors in instruments and measurements.

Since the compressor suction pressure varies from 14 kg/cm<sup>2</sup>g to 19 kg/cm<sup>2</sup>g the compressor shall be sized / selected for specified capacity of 400 SCMH at 16 kg/cm<sup>2</sup>g (with no -ve tolerance) whereas the driver shall be selected on the basis of compressor BkW with either 14 kg/cm<sup>2</sup>g or 19 kg/cm<sup>2</sup>g whichever is higher.

For calculation purpose 1kg of CNG =1.29 SCM

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

- **Loading:**

**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:

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

Where,

F = Loading amount in Rs.

G = Vent/Leakage rate quoted in percentage

H = Cost of Natural Gas per Kg – Rs. 20/- per kg

I = Factor towards lifecycle in hours @

73,000 hours N = Number of machines

$$W = 310$$

**Note: Guaranteed parameters shall be confirmed during PAT and AMC period. If any deviation is observed from values declared at Bid Stage, GGPL holds the right to Cancel the Contract / stop Vendor from participation in future tenders.**

**Loading against Energy Consumption:**

The compressor package shall be designed in such a way that Energy Consumption of Motor (KWH/Kg) should be minimum for production of CNG.

Bidder shall indicate actual power 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:

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

Where,

F = Loading amount in Rs.

G = Bidder's Energy consumption rate quoted in KWH for every Kg  
of CNG produced Q = Lowest Energy consumption rate quoted in  
KWH for every Kg of CNG produced H = Cost of Energy  
INR12/Kwh

I = Factor towards lifecycle in hours @

73,000 hours N = Number of machines

$$W = 310$$

**Note: Guaranteed parameters shall be confirmed during PAT and AMC period. If any deviation is observed from values declared at Bid Stage, GGPL holds the right to Cancel the Contract / stop Vendor from participation in future tenders.**

**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

$$\text{excess gas loss: } F = [G - (Q * D)] * H$$

Where,

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

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G = Monthly Vent/Leakage loss observed during

O&M period  $Q = \text{Vent / Leakage loss quoted}$   
in percentage

H = Cost of Natural Gas/Kg – Rs. 20/- per Kg

D = Production during the month

(Discharge meter) Considering:

G above shall be taken as (Suction – Discharge) OR Reading from Vent Mass Flow Meter, whichever is higher.

**Penalty towards Excess Energy Consumption:**

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

Following calculations shall be used for deduction towards excess

power consumption.  $F = (G - Q) \times H$

Where,

F = Monthly Penalty in Rs.

G = Monthly Actual power consumption

Q = Guaranteed consumption rate quoted by supplier for every 310 Kg of CNG  
x CNG produced during the month / 310

H = Cost of power Rs 12/Kwh

**Penalty towards Package Efficiency Loss**

This penalty shall be imposed on compressor blocks not capable of delivering rated capacity of 400 SCMH Following calculations shall be used for penalty towards package efficiency loss:

This penalty shall be imposed on compressor blocks not capable of delivering rated capacity of 400 SCMH Following calculations shall be used for penalty towards package efficiency loss:

$F = 2 \times \{ (400 \times H \times RD \times AD) - M \}$

Where,

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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:**

- 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/Cm<sup>2</sup>.
- In case pipeline pressure at the station itself is less than 16 Kg/Cm<sup>2</sup>, then the penalty shall be imposed if the package delivery falls below discharge values corresponding to the station pressure.

**Penalty for Non-Performance during One Year Period of Operation & Maintenance**

Details of Penalty for non -performance of equipments

a. On normal day (i.e. the day other than the schedule maintenance day):

- i. The party has to ensure that the equipments are available for operation for minimum 20 hours per day and on an average the equipment availability has to be 98% in a month.
- ii. If the equipment is down for more than 4 hours on any day or availability is less than 98% in a month. Penalty would be applicable as follows:  
upto 12 hours : Rs. 20,000/-  
Beyond 12 hours: Rs. 40,000/- per day.

In case of daily availability is 20 hrs. but monthly average availability is below 98%. Then penalty @ of 10,000 per % or part thereof shall be applicable.

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. 20,000/- and for more than 12 hours Rs. 40,000/- 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

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charges need to be furnished by the bidder during bid), GGPL will take necessary actions as per terms and conditions of the contract for such non-performance.

**8.0 SPECIAL TOOLS AND TACKLES**

- Special tools & tackles for erection and commissioning and for operation & maintenance are required to be arranged by successful bidder.
- Vendor shall maintain sufficient spares to fulfill the warranty & subsequent two years period requirements. In case of additional requirement during the warranty period, if any spare part is taken from GGPL, the same shall be replaced to GGPL with new part supported by necessary document for its authenticity of being new & original spare part

**9.0 DOCUMENTATION**

- The drawings/documents to be submitted by the bidder shall be divided in three categories:
  - a. Drawing documents to be supplied with the offer
  - b. Drawing /document to be submitted for approval (After placement of order)
  - c. Drawing/document to be submitted for information (After placement of order)
- The bidder shall submit list of drawings, which shall be submitted by them in above three categories. All drawing /document shall be submitted in 6 sets.
- Title block of each drawing shall contain at least

following information: Name of the Client :

GODWARI GAS LIMITED

Name of the Consultant :

Name of the Project : INTEGRATED COMPRESSOR PACKAGE FOR CNG STATION

Name of Bidder :

Descriptive title :

Drg. No :

Revision No :

Sheet No./ Total No. of sheet in the drawing:

- Bidder shall furnish relevant calculation and protection relay setting table for the equipment /system being supplied by them, It shall also contain the manufacture's catalogue, operation and maintenance manuals for all types of relays/components used,
- The bidder shall submit all drawing within specified time, in requisite number, for each equipment/item for approval.

- Approval of drawings by Owner.
- The bidder shall submit furnish drawings as indicated/agreed for each item for approval of the Owner/Consultant.
- Owner/Consultant will scrutinize drawing/data furnished by Bidder and comments, if any, will be communicated to the Bidder within 2 weeks from the date of receipt.
- The Bidder shall submit all the drawings/documents in six (6) sets. All the drawing of sub-bidder/bidders etc. shall be checked by Bidder for correctness and compliance with requirement of order/contract and signed before submission to Owner.
- The drawings shall be stamped in either of following category and one print shall be returned to the Bidder. “APPROVED”  
“APPROVED SUBJECT TO INCORPORATION OF  
COMMENTS” “NOT APPROVED”  
“FOR INFORMATION ONLY”
- Wherever drawings are returned to the Bidder with the marking “Approved subject to incorporation of comments” the bidder shall make the necessary modifications/corrections and resubmit the revised drawings and data for final approval.
- Bidder shall be responsible for correctly incorporating all the points conveyed to him and resubmit the drawings to the Owner for final approval. Specified number of copies of approval drawing and reproducible of specified quality shall be submitted after the final approval of drawings.
- Approval of drawing by owner shall not relieve the suppliers of his contractual obligations and responsibility for engineering design, workmanship, materials and performance of equipment, Work shall be carried out exactly as indicated on the approved drawings and data and no alterations shall be made without the written approval of the Owner,
- If any subsequent alterations are found necessary and approved by the Owner, all drawings and data affected by such alterations shall be duly revised and re-submitted for the approval.
- Bidder shall incorporate/cause to incorporate all change made in the drawings from approval stage to the handing over of equipment and submit as built drawings in the requisite sets (these will be in addition to the sets submitted at the time of approval/for information and up to commissioning). The drawing to be submitted shall include all the drawings submitted for approval, information as also the drawings required for normal operations, trouble shooting repair, and maintenance and testing of equipment etc.
- Bidder shall submit the following drawings/data/document in bound volume prior to submission of final bill to the Owner in soft and hard copies (6 Sets).

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- All drawings submitted to Owner for approval information
- Equipment manufacturing drawings submitted for information of Owner.
- Equipment drawings required for operation and maintenance.
- Fault calculations, protection relay setting calculations and recommended settings.
- Inspection reports, factory and site test certificates in bounded volume.
- As built drawings incorporating all site modifications.
- Instruction manuals
- List of spares for two years operation and maintenance. The list of spares should include ordering specification and manufacture's catalogues and price.
- Operation and maintenance procedures for individual equipment and total system.

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**ANNEXURES FOR SECTION-I  
(BIDDER TO SUBMIT FILLED UP  
ANNEXURES)**

**ANNEXURE – I : GUARANTEED**

**PARAMETERS (400 SCMH**

**MOTOR DRIVEN)**

**For Basis of loading and penalty**

<b>Sr. No.</b>	<b>Parameter</b>	<b>Bidder's Data</b>	<b>Unit</b>
1	Compressor Capacity at suction pressure @ 16kg/cm <sup>2</sup> (g) ( basis for penalty)	400	SCMH
2	Power consumption of package in KWH for 400 SCMH delivery (basis for loading and penalty )		KWH
3.	Gas loss as % of production, including loss from SRV, due to oil top ups and idling ( basis for loading & penalty)		%

**Guaranteed General Package Data**

<b>SR. NO.</b>	<b>PARAMETER</b>	<b>BIDDER'S DATA</b>	<b>UNIT</b>
4.	COMPRESSOR BkW IN KW @ RATED CONDITIONS (NO + VE TOLERANCE)		KW
5.	COMPRESSOR BkW IN KW @ RV SET CONDITIONS (NO + VE TOLERANCE)		KW
6.	NET OF ALL AUXILIARIES/PACKAGE VENTILATION LOADS IN KW		KW
7.	SITE RATED BkW OF ELECTRIC MOTOR (NO – VE TOLERANCE)		KW
8.	NOISE LEVEL 75 DBA @ 1 METER FROM ENCLOSURE (REQUIRED 75 ± 3 DBA)		DB
9.	FOOTPRINT AREA OF COMPRESSOR PACKAGE QUOTED AS MENTIONED IN SOR		MTR.X MTR.

Note:

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

- Bidder has to fill all the nine 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.
- Bidder shall quote the guaranteed parameters for suction pressure of 16kg/cm<sup>2</sup> and temperature 35degc, discharge pressure of 255 Kg/cm<sup>2</sup> at maximum temperature of 52deg C.
- Conversion factor for Kg to SCM is 1 kg = 1.29 SCM
- Bidder has to guarantee that offered compressor package will deliver minimum 400 SCMH under the condition described above. Deliver less than 400 SCMH is not acceptable and will be summarily rejected.

**ANNEXURE – II : COMPRESSOR DATA SHEET FOR 400 SM<sup>3</sup>/HR**

<b>1.0</b>	<b>PROJECT: CNG Project</b>		<b>DATA SHEET NO:</b>	
1.1	NO. OF UNITS	:		DRIVE: Electrical Motor
1.2	DUTY	:	Continuous	LOCATION:
<b>2.0</b>	<b>OPERATING CONDITIONS</b>			
2.1	Service/Stage	:	Compressor for CNG Stations/ Three	
2.2	Gas Handled	:	Natural Gas	
2.3	Composition (%)	:	Natural Gas	
2.4	Corrosive due to:	:		
2.5	Molecular Weight at Intake (Avg.)	:		
2.6	Cp/Cv at intake/compressibility Factor	:		
2.7	Relative Humidity	:		
2.8	Suction Temperature (°C)	:	35°C max	
2.9	Suction Pressure (Kg/cm <sup>2</sup> , Gauge)	:	14-19 Kg/cm <sup>2</sup> Gauge	
2.10	Discharge Temperature (°C)	:	Maximum 52°C After Cooler	
2.11	Discharge Pressure (Kg/cm <sup>2</sup> , G)	:	255Kg/cm <sup>2</sup> (Gauge)	
2.12	Required Capacity (SM <sup>3</sup> /hr.) : 400	:		Driver Motor Rating: KW
2.13	Drive arrangement Direct Coupling/V-belt	:		
2.14	Standard Conditions referred to	:	Standard Atmospheric pressure (1.033 Kg/cm <sup>2</sup> abs) and Temperature of 15.6°C	
<b>3.0</b>	<b>SITE CONDITIONS</b>			
3.1	Place	:		Installation: Outdoor
3.2	Site Ambient Temp. (°C)	:	Min : 1.7 °C Max : 47.5 °C	Max. Relative Humidity (%) : 90%
3.3	MSL – 205 m	:		
3.4	Area Classification	:	Class I Div I Group D or Zone I Div I Group IIA Group IIB	
<b>4.0</b>	<b>APPLICABLE CODES &amp; SPECIFICATIONS</b>			
4.1	Compressor	:	API 11P, 2nd edn. ; API 618	Piping: ASME/ANSI B 31.3
4.2	Driver	:	Electrical Motor Data Sheet	
4.3	Air Cooled Exchangers	:	API 661	Water cooled exchangers :

				TEMA 'C' - NA
4.4	Pressure Vessel	:	ASME Sec. VIII Div.1/2	Control Panel : Refer Tech Specs
<b>5.0</b>	<b>MANUFACTURER'S SPECIFICATION</b>			
5.1	Name	:		Model:
5.2	No. Off	:		Compressor RPM/Stroke (mm):
5.3	Type	:		Drive Arrangement:
5.4	Service/Stage			
5.5	Mol. Wt. At Intake (Avg.) (Gas Composition)	:		Cp/Cv Value/ Compressibility Factor at Intake
5.6	Adiabatic Power (KW)	:		Shaft Power @ RV set pressure (KW)
5.7	Driver Rating & Speed (KW/RPM)	:		Noise level:

5.8	Suction Line (Size/ Rating)	:		Discharge Nozzle (Size/Rating)
5.9	Direction of Rotation from Driving End:			
5.10	Compressor Weight :	Max. Erection Weight:	Max. Maintenance Weight::	
5.11	Diff. Pr. In Suc. Strainer, Piping, puls Dampener:Diff. Pr. In after Cooler			
5.12	PERFORMANCE DATA OF PACKAGE			
	Gas	Suction Pr 14 kg/cm2g		
		Ist Stage	IInd Stage	IIIRD Stage
	Mol. Wt at intake			
	Specific Gravity			
	Cp/Cv Value / compressibility Factor at intake			
	Cp/Cv Value / compressibility Factor at discharge			
	Suction Pressure, kg/cm2 g			
	Suction Temp. °C			
	Suction capacity, SM3 / Hr			
	Discharge pressure, kg/cm2 g			
	Discharge Temp. Adiabatic °C			
	Discharge Temp. Actual, °C			
	shaft power, Kw			
	V-belt / coupling losses, kW			
	Shaft power at RV set pressure including			
	V-belt / coupling losses, kW			
	Volumetric Efficiency, %			
	Valve lift			
	Valve lift area			
	Valve velocity (Average) M/sec			
5.13	DESIGN DATA	Suction Pressure 19 Kg/ Cm2g		
		Ist Stage	IInd Stage	IIIRD Stage
	Mol. Wt at intake			
	Specific Gravity			
	Cp/Cv Value / compressibility Factor at intake			
	Cp/Cv Value / compressibility Factor at discharge			
	Suction Pressure, kg/cm2 g			
	Suction Temp. °C	35		
	Suction capacity, SM3 / Hr			
	Discharge pressure, kg/cm2 g			
	Discharge Temp. Adiabatic °C			

	Discharge Temp. Actual, °C			
	Shaft power, kW			
	V-belt / coupling losses, kW			
	Shaft power at RV set pressure including			
	V-belt / coupling losses, kW			
	Volumetric Efficiency, %			
	Valve lift			
	Valve lift area			
	Valve velocity (Average) M/sec			
<b>6.0</b>	<b>CYLINDER &amp; PACKAGING DATA</b>			
6.1	Service / stage	Ist Stage	IInd Stage	IIIRD Stage
6.2	Cylinder bore (mm/No. off)			
6.3	Single / Double Acting			
6.4	Liner (yes/ No.)			
6.5	Type of Valves			
6.6	Piston Displacement (M3/Hr)			
6.7	Volumetric Efficiency (%) Min/ Nor/max			
6.8	Mean Piston Speed(m/sec) [<3.5 m/sec]			
6.9	Suction / discharge valve gas velocity (m/sec)			
6.10	Relief valve setting (kg/cm <sup>2</sup> g)			
6.11	Max. allowable cylinder pressure (kg/cm <sup>2</sup> g)			
6.12	Max. allowable cylinder temperature (°C)			
6.13	Pneumatic Test By (kg/cm <sup>2</sup> g)			
6.14	Hydrostatic test (kg/cm <sup>2</sup> g)			
6.15	Hydrostatic test water jacket (kg/cm <sup>2</sup> g)			
6.16	Suction / discharge nozzle orientation			
6.17	No. of suction / discharge valves			
6.18	Piston Rod Dia (mm)			
6.19	Piston Load			
	-Max. Rod load gas compression, Kg			
	-Max. Rod load gas tension, Kg			
	- Rod load (Inertia alone) compression, Kg			
	- Rod load (Inertia alone) tension, Kg			
	-Rod load rated Pr. (gas + inertia) compression, Kg			
	-Rod load rated Pr. (gas + inertia) tension, Kg			
	-Rod load at R.V set Pr. (gas + inertia) compression, Kg			
	-Rod load at R.V. set Pr. (gas + inertia) tension, Kg			
6.20	Max. Permissible Piston Rod loads (kg)			

6.21	Rod packing cooling by liquid (yes/No.)			
6.22	Rod packing lubrication (Yes/No)			
6.23	Rod packing vent to			
6.24	distance piece type			
6.25	Cylinder jacket cooling by			
<b>7.0</b>	<b>LUBRICATION SYSTEM</b>			
7.1				
	<input type="checkbox"/> Splash	<input type="checkbox"/> Force feed Lubricated		
	<input type="checkbox"/> Pressure lubrication including piping, valves and	<input type="checkbox"/> Mini Lubricated		
	<input type="checkbox"/> Oil filter : single	<input type="checkbox"/> Non Lubricated		
	Degree of filtration	<input type="checkbox"/> Lubricator Driven by		
	<input type="checkbox"/> Oil cooler	<input type="checkbox"/> Compressor shaft		
	<input type="checkbox"/> Oil pump driven by compressor shaft	<input type="checkbox"/> Electric Motor (kW)		
	<input type="checkbox"/> Auxiliary oil pumps, if reqd,	<input type="checkbox"/> Lubricator equipped with sight flow indicator for each point storage tank with level gauge		
	<input type="checkbox"/> Pre-lube Motor driven pump, in case of splash system			
	Grade / viscosity of lube oil	Grade / viscosity of lube oil		
	Oil sump capacity	Oil sump capacity (For 500 hrs)		
	Lube oil consumption (Lt/100 Hr.)	Lube oil Consumption(Lt./100 hr)		
	Change lube oil after	Hours		
	Type of bearing : Main    Big End:	Small End:		
<b>8.0</b>	<b>COMPRESSOR CONTROLS</b>			
8.1	<input type="checkbox"/> Automatic start / stop on storage pressure level and manual start stop	<input type="checkbox"/> Actuators (To be included in supply)		
8.2	<input type="checkbox"/> Automatic drain of separators	<input type="checkbox"/> Manual on machine		
8.3	<input type="checkbox"/> Compressor to start automatically after power interruption with 10 seconds delay.	<input type="checkbox"/> Intermediate devices (to be included in supply)		
8.4	<input type="checkbox"/> Automatic recovery of gas form gas recovery vessel	<input type="checkbox"/> Solenoid valves		
8.5	<input type="checkbox"/> Automatic closing of suction isolating valve on compressor trip	<input type="checkbox"/> Manual -mounted in a local panel.		
		<input type="checkbox"/> Controller(For auto control)		
		<input type="checkbox"/> Pressure switches (For auto control)		
8.6	Compressor shall unload on Power failure/ stoppage through (Vendor to indicate) <input type="checkbox"/> Automatically <input type="checkbox"/> Manually	<input type="checkbox"/> Any other instrument required.		
8.7	Compressor shall load on start through (Vendor to indicate)	<input type="checkbox"/> Automatically <input type="checkbox"/> Manually		

8.8	Recommended time duration for compressor operation @ 0% capacity (minutes)				
8.9	Recommended number of starts/ stops for the Motor : Per Hours				
AUXILIARIES					
9.0	COOLERS				
9.1.1		Oil Cooler (Required)	After cooler	Inter coolers	
9.1.2	Cooler Type				
9.1.3	Tube Material				
9.1.4	Tube sheet material shell Material				
9.1.5	Shell Material				
9.1.6	ASME / IBR CODE STAMP	Yes	Yes	Yes	
9.2	Suction Strainer	Temporary Mesh Size			
9.3	Volume Bottles / Pulsation Dampers		1st Stage	2nd Stage	3rd Stage
9.3.1	Type at Suction /Discharge				
9.3.2	Residual Pulse Amplitude ( peak to peak )		3% / 3%		
9.3.3	Maximum Allowable Working Pressure (kg/cm2g)				
9.3.4	Capacity (M3)				
9.3.5	ASME / IBR CODE STAMP		Yes	Yes	Yes
9.4	Separator	1st Suction	1st Discharge	2nd Discharge	Final Discharge
9.4.1	Type				
9.4.2	Max allowable Pr (kg/ cm2g)				
9.4.3	Capacity (M3)				
9.4.4	ASME / IBR CODE STAMP	Yes	Yes	Yes	Yes
9.5	Oil Mist separator at final discharge to limit oil carry over to 5 PPM				
9.5.1	Type			Capacity:	
9.5.2	Max allowable Pr (kg/ cm2g)			ASME / IBR CODE STAMP: Yes	
9.6	Gas Recovery vessel			Capacity:	
9.6.1	Max allowable Pr (kg/cm2g)				
9.6.2	ASME / IBR CODE STAMP			yes	
10.0	INSTRUMENTATION				
10.1	PRESSURE INDICATION			PRESSURE SWITCHES	
10.2	Gas At inlet			Frame oil header (1 no. For trip on low pressure.)	
10.3	Gas at discharge (each stage)			Jacket water system failure	
10.4	Frame oil Header			Compressor discharge	

		Pr high (Each stage)
10.5	Frame oil filter (Differential local)	Compressor discharge Pr Low (Final stage)
10.6	Gas at after cooler exit (local)	Compressor suction pressure low
10.7	Hydraulic Oil Pr. (each stage)	Compressor suction pressure high
<b>10.8</b>	<b>TEMPERATURE INDICATION</b>	Frame High vibration
	Gas at suction to compressor	TEMPERATURE SWITCHES
	Gas at Discharge of Comp (Each stage before cooler)	Temperature after compressor discharge before cool (each stage)
	Gas at after cooler	
10.9	Oil cooler oil outlet	
<b>10.10</b>	<b>OTHER INSTRUMENTS</b>	<b>LEVEL TRANSMITTERS</b>
10.11	Junction Box with interconnecting wiring	Suction K.O.D ( for automatic drain)
10.12		Discharge K.O.D ( for automatic drain)
10.13	Pressure Relief Valve at discharge each stage	BAFFLE FLOW SWITCHES OR ORIFICE DIFF. PRESS SWITCHES
10.14	Pressure Relief Valve at suction to compressor	Low cooling water flow
10.15		Water outlet -after cooler
10.16	Instruments for closed circuit cooling water system	SIGHT FLOW INDICATORS
10.17	Hour meter	As reqd. in close ckt. cooling system
10.18	Gas detection system	Sight flow indicators, cylinder and packing lubrication oil lines
10.18	Flame detection system	LEVEL GAUGE AND INDICATORS
10.19	Forced feed lubrication failure to stop comp.	Frame oil (Bull's eye

		type)
10.20	Priority fill panel	Packing / cylinder lubrication oil
10.21	Emergency shut down system	Make up water tank
10.22	Other instrument for safe running of compressor	
	Note : 1. Each pressure gauges and pressure switch with an isolating valve and a drain valve. Switch contacts to open under fault conditions Switch / junction box enclosure ( As per the electrical area classification)	
<b>11.0</b>	<b>INSTRUMENT PANEL</b>	
11.1	PNEUMATIC CONTROLS FOR	TRIP CIRCUIT TO BE CONNECTED TO MAIN DRIVER CONTROL SWITCH
11.2	Capacity Indication	Cause of shut down
11.3	Pressure Regulator	Frame Oil Pressure-Low
11.4		Low Cooling Water Flow
11.5	PUSH BUTTONS AND SIGNAL LIGHTS FOR	
11.6	Main Motor & Aux. Motors	Compressor discharge PR.(Each stage)
11.7	Ammeters for main and Aux. Motors	Compressor suction Pr. Low
11.8	ESD	Compressor suction Pr.
11.9	Common machine trip-alarm	
<b>11.10</b>	<b>Following to be included in vendor's scope of supply :</b>	
11.11	All interconnecting oil gas water piping & tubing as per schematic attached.	
11.12	All electrical power distribution and interconnection as specified.	
11.13	Intrinsically safe system for trips ( Ref. Inst. specs)	
11.14	Electrical circuits to be housed in Explosion Proof Cabinet (Refer Elect. & inst. Specs)	
11.15	Electrical circuits to be provided for repeating pre alarm and trip alarm on the local panel.	

11.16	Annunciation system with test / acknowledgement push buttons & sole first off sequences				
11.17	Motor Interlock against loaded start				
11.18	Motor Interlock against start without air cooler fan running				
11.19	Motor interlock against start without pre-lubrication				
11.20	Provision shall be made for common alarm and trip alarm				
11.21	Any additional instruments & controls required for safe operation of compressor ( as recommended by compressor vendor)				
<b>12.0</b>	<b>MATERIAL OF CONSTRUCTION &amp; GRADES</b>				
12.1	Stage	1st	2nd	3rd	Remarks
12.2	Cylinder & Head				
12.3	Liner				

12.4	Piston				
12.5	Piston Ring				
12.6	Piston Shoe ( Wear Band)				
12.7	Valve seat				
12.8	Valve stop				
12.9	Valve / plate / Ring				
12.10	Valve spring				
12.11	Cylinder Packing Ring				
12.12	Crank Shaft F.S ( Forged steel)	Connecting Road (CR) F.S	CR cap. Bolts FS		
12.13	Main bearing: Big End Beating: Small end bush:				
12.14	Piston Rod	Yield strength	Hardness(RC)	Surface Finish	
12.15	Pulsation Dampers / Volume Bottles		Suction/Discharge KOD		
12.16	Non Return Valve- Shall be compressor Discharge valve type				
13.0	INSPECTION AND TESTING				
13.1	X-ray examination for welded joints for heat exch./ Press. Vessel / gas Piping ( Certificate to be furnished)		NO only TC		
13.2	Ultrasonic testing for piston rod, connecting rod, crank shaft, big end bolts, main brg. studs.		YES		
13.3	Magnaflux testing for crankshaft, piston rod, connecting rod		YES		
13.4	Dye penetrant testing for cylinder liners , piston		YES		
13.5	Shop inspection by purchaser during construction		YES		
13.6	Barring over to check clearance		YES		
13.7	Mechanical running test with shop job driver at compressor vendor's works		YES		
13.8	Stripping check and internal inspection		for one comp		
13.9	Hydrostatic test of Cylinders, Pressure Vessels		Yes		
13.10	Leak proof test of crank case ( min 24 hrs with With kerosene)		Yes		
13.11	Fit up test at compressor packager's		Yes		
13.12	Performance Acceptance Test		YES		
13.13	Field noise level test		YES		
13.14	Field trial run at site for 12 hours		YES		
13.15	Functional / continuity tests - control panel ( At sub		YES		

	vendor's works)								
13.16	Inspection and tests of compressor vessels								
	Piston			Piston Rod					
	Cylinder and liner		Connecting Rod			Crank case			
	Crank shaft		Heat Exchangers			Valve components			
	Pressure vessels								
	Test Certificate required for								
	Auxiliary Motor & Pumps		Safety Relief Valves (Temp / F			Capacity control devices			
	Safety switches		Solenoid valves			All instruments			
	Note : 1. For electrical / instrument items, vendor shall provide certificates issued by statutory inspection authority confirming suitability of design / construction for specified Hazardous area classification.								
	Service								
	Size Type (Induced Force)					Craft/No. of Bays			
	Surface per Unit-Finned Tube (m2)					Bare Tube (m2)			
	Heat Exchanged (KW)					MTD. Eff °C			
	Transfer Rate * Finned Tube : Bare Tube, Service Clean W/m2 °C								
	PERFORMANCE DATA-TUBE SIDE								
				Min. Suc. Pr.		Normal. Suc. Pr.		Max. Suc. Pr	
				In	Out	In	Out	In	Out
Gas Composition		Inter Cooler 1st Stage	Flow Kg/s						
			Temp °C						
			Pr. Kg/cm2						
			Total Heat KJ/Kg						
		Inter Cooler 2nd Stage	Flow Kg/s						
			Temp °C						
			Pr. Kg/cm2						
			Total Heat KJ/Kg						
		After Cooler Stage	Flow Kg/s						
			Temp °C						
			Pr. Kg/cm2						
			Total Heat KJ/Kg						

	Oil Cooler Stage	Flow Kg/s							
		Temp °C							
		Pr. Kg/cm2							

		Total Heat KJ/Kg						
Water/Air Cooler Stage	Flow Kg/s							
	Temp °C							
	Pr. Kg/cm2							
	Total Heat KJ/Kg							
	Total Heat all streams KJ							
	Pressure Drop Allow/Calc Kg/cm2 g							
	Soft Starter Data Sheet to be provided by the Compressor.							
	Performance –Data –Air Side							
	Air Quantity (Total Kgs.)							

### **ANNEXURE - III - DATA SHEET FOR ELECTRIC MOTOR**

ITEM NO.:		As per requirement
QUANTITY:		
DESCRIPTION:		
A.	APPLICABLE SPECIFICATION AND STANDARDS	IS:325 / IEC / EQUIVALENT INTERNATIONAL STANDARDS
B.	SERVICE CONDITIONS:	
	Max. Ambient Temp. (Deg. C)	
	Min. Ambient Temp. (Deg. C)	
	Design Ambient Temp. (Deg. C)	
	Altitude Above MSL (MTS)	
	Relative Humidity (Max.) (%)	
	Environment	
	Location ( Indoor / Outdoor )	
	Area ( Safe / Hazardous )	
C.	SYSTEM CHARACTERISTICS:	
	Systems Voltage with $\pm$ %	415 V $\pm$ 10%
	Number of Phases	3
	Rated Frequency with $\pm$ %	50 Hz $\pm$ 5%
	Combined Variation	$\pm$ 10%
	Fault Level	25 KA
	Space Heater Supply	Space heater for 30KW & above rating motor
	Low Voltage Stator Winding Heating Supply	NA
D.	Motor Rating / Details:	
	Rated Output	As per Vendor
	Rotor Type	Squirrel Cage
	Syn. Speed (RPM)	As per pump and fan vendor
	Direction of Rotation	Bi-Directional
	Insulation Class	'F', Temperature Rise Limited to 'B'
	Duty	S1, Continuous
	Winding Treatment	Moisture Protection Varnish
	Insulation Process	Anti Corrosive Treatment
	Starting Method	Star / delta
	Starting Current	Vendor to Furnish
	Minimum Voltage Start at Terminal	80% of 415V
	Starting Torque	Min. 200% of FLT
	Pull Out Torque	
	No. of Hot Starts	2 Nos.
	No. of Cold Starts	3 Nos.
	Shaft Extension	Required
	Type of Coupling	

		Earth Terminals	2 Nos. on Body & 2 Nos. on T. Box
		Greasing Arrangement	Yes
		Name Plate	Yes, as per IS:325
		Starter Connection	Vendor to Furnish
		Efficiency at	
		100% load	
		75% load	
		50% load	
E.	ENCLOSURE:		
		Degree of Protection	EExd IP55
		Mounting Arrangement	As per requirement.
		Type of Cooling	TEFC
F.	TERMINAL BOX		
i)	Terminal Box (Main)		1 No.
		Type	
		Fault Withstand	
		No. of Terminals	6 Nos.
		Side of Terminal Box seen from the Driven End	RHS
ii)	Auxiliary Terminal Box		--
	1.	Separate Terminal Box for	
		Space Heaters	YES
		Thermistors	--
G.	TESTS TO BE WITNESSED		
		Type Tests	CMRS test certificate to be furnished
		Routine Tests	As per IS:325
H.	ACCESSORIES		
		Anticondensation Heaters	Yes
		PTC Thermistors	NA
		Voltage Rating of Space Heaters	230V, .....
		Foundation Bolt	Yes
		Cable Glands	Required
		Earthing Terminals	Body & T. Box
		Motor peak Amplitude Vibration at no Load at Bearing should not exceed	40 Microns for 1500 RPM 15 Microns for 3000 RPM
		Max. Motor Noise Level Measured at a Distance of 1.5 Mts. from Motor	85 dB
I.	CABLES		
	1.	Type & Size	
		- Motor	Vendor to furnish
		- Space Heater	Vendor to furnish
		- Thermistor	NA
	2.	Cable Lugs	
		- For Motor	Copper
		- Space Heater	Copper

		- Control Cables	NA
	3.	Cable Glands – Type Material	
		- Motor	FLS-Double Compression, Ni-Cd Plated
		- Space Heater	FLS-Double Compression, Ni-Cd Plated
		- Control Cables	FLS – Double Compression Ni-Cd Plated
		J. PAINTING	
		TYPE	Epoxy
		SHADE (AS PER IS:5)	692 (Smoke Grey)

**Note:** Certificate from Compressor block manufacturer towards guaranteed shaft power calculation at 400 SCM per hour compression (on given parameter) and from Motor manufacturer towards their KWh consumption (KWh on guaranteed parameters) on above guaranteed shaft power to be submitted by bidders along with bid. A confirmation is required from bidders prior to bid opening.

**ANNEXURE – IV**  
**LIST OF MOTORS**

S.No.	DESCRIPTION	KW	DUTY	QTY.

NOTE: -Motors are in hazardous area classification Zone 1 and Zone 2. Therefore, the Motors shall be flame proof. Vendor shall furnish the list of motor(s).

## **ANNEXURE – V: SPECIFICATIONS OF INSTRUMENTS**

### **SPECIFICATION OF CORIOLIS MASS FLOW METER (SUCTION)**

<b>Sl. No.</b>	<b>PARAMETER</b>	<b>REQUIREMENT</b>
1.	Fluid	Compressed Natural Gas
2.	Measuring Principle	Coriolis Principle
3.	Operating Pressure	<b>40 (max.) bars ,19 (Normal) bars, 8 (min.) bars</b>
4.	Molecular Weight	17 – 22
5.	Ambient Temperature	0 – 60 OC
6.	Hazardous area classification	Class I, Div I, Gas Group D as per NEC or Zone1, Group IIA/ IIB as per IS/IEC specifications
7.	Range of operation	326- 550 SCM/HR
		275- 425 KG/HR
8.	Accuracy	± 0.5% of indicated flow accepted (over the whole operating range on gas)
9.	Rangeability for specified accuracy (Min.)	50:1
10.	Line Size	1.0 "( Flange type),300# WNRF ( Material: 316 L)
11.	Pressure drop at max. flow	< 0.2 Kg/cm <sup>2</sup> g
12.	Repeatability	± 0.25% or better
13.	Material - Tube	SS 316 or Better
14.	End Connection	To suit the line size(1.0") , Flange connections
15.	Power supply (nominal)	230±10% V, 50±2 Hz, 1 0
16.	Outputs (Active)	
16.1.	4 – 20 mA dc	Reqd.
16.2.	Frequency	Reqd.
16.3.	RS 485	Reqd.
17.	Outputs Information's	
17.1.	Mass Flow rate	Reqd.
17.2.	Mass totalizer, non-resettable	Reqd.
17.3.	Temperature	Reqd.
17.4.	Integral Display	Manufacturer standard design
18.	Communication	<b>MODBUS with RS485</b>
19.	Mounting	Field mounting

20	Certification	Hazardous area compatibility, Weather proof certification i.e. IP 67 ,Material Test, Manufacturer's certification, Custody Transfer approval, AGA 11 Conformance certification and Calibration Certificate on water and Natural Gas from accredited test labs with traceability acceptable internationally
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**SPECIFICATION OF CORIOLIS MASS FLOW METER (DISCHARGE) & (PART OF DISPENSER)**

<b>Sl. No.</b>	<b>PARAMETER</b>	<b>REQUIREMENT</b>
1.	Fluid	Compressed Natural Gas
2.	Measuring Principle	Coriolis Principle
3.	Operating Pressure	<b>300 (max.) bars ,250 (Normal) bars, 100 (min.) bars</b>
4.	Molecular Weight	17 – 22
5.	Ambient Temperature	0 – 60 OC
6.	Hazardous area classification	Class I, Div I, Gas Group D as per NEC or Zone I, Group IIA/ IIB as per IS/IEC specifications
7.	Range of operation	326- 550 SCM/HR
		275- 425 KG/HR
8.	Accuracy	± 0.5% of indicated flow accepted (over the whole operating range on gas)
9.	Rangeability for specified accuracy (Min.)	50:1
10.	Line Size	0.5 "( TUBE END)
11.	Pressure drop at max. flow	< 0.2 Kg/cm <sup>2</sup> g
12.	Repeatability	± 0.25% or better
13.	Material – Tube	SS 316 or Better
14.	End Connection	To suit the line size(0.5") ,
15.	Power supply (nominal)	230±10% V, 50±2 Hz, 1 0
16.	Outputs (Active)	
16.1.	4 – 20 mA dc	Reqd.
16.2.	Frequency	Reqd.
16.3.	RS 485	Reqd.
17.	Outputs Information	<input type="checkbox"/>
17.1.	Mass Flow rate	Reqd.
17.2.	Mass totalizer, non-resettable	Reqd.
17.3.	Temperature	Reqd.
17.4.	Integral Display	Manufacturer standard design
18.	Communication	<b>MODBUS with RS485</b>
19.	Mounting	Field mounting

20	Certification	Hazardous area compatibility, Weather proof certification i.e. IP 67 ,Material Test, Manufacturer's certification, Custody Transfer approval, AGA 11 Conformance certification and Calibration Certificate on water and Natural Gas from accredited test labs with traceability acceptable internationally
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## SPECIFICATION OF THERMAL MASS FLOW METER (TO MEASURE VENT LOSS)

SR. NO.	PARAMETER	REQUIREMENT
1	Fluid	Natural Gas
2	Measuring Principle	Thermal
3	Operating Pressure	50 mbar g
4	Molar Mass	17 -22
5	Ambient Temperature	0-60°C
6	Hazardous area classification	Class I, div I Gas Group D as per NEC or Zone 1, Group IIA / IIB as per IS / IEC Specification
7	Range of Operation	0.6 - 16 SCM/Hr 0.5 - 12 Kg / Hr
8	Measured Error Mass	± 1.5% of indicated flow accepted (over the operating range of 2-12 Kg/Hr on gas)
9	Meter Size	0.5"
10	Pressure drop at max. flow	2 mbar max.
11	Repeatability	± 0.5% or better
12	Material Tube	SS 316 or better
13	End connection	To suit the line size, flange Connections
14	Power Supply (nominal)	230 ± 10% V, 45-65 Hz
15	Output (Active)	
16	RS 485	Required
17	Outputs Information	
17.1	Mass Flow Rate	Required
17.2	Mass Totalizer, non – resettable	Required
17.3	Temperature	Required over MODBUS
17.4	Integral Display	Display all outputs with specified accuracy, programmable and sequential with password protection. Touch Screen or Touch Keypad Type
17.5	Density	Required
17.6	Pressure	Required
17.7	Volume flow rate	Field configurable with password protection for molecular weight range: 17 to 22
17.8	Volume flow totalizer	Field configurable with password protection for molecular weight range: 17 to 22
17.9	Periodic mass & totalizer, non-resettable	Four (one each monthly, daily, fortnightly and one for configurable period)

18	Programmer	Calibration software, perpetual license with portable hardware platform complete with all connectors, power adopter, batteries. System should be suitable for effecting calibration changes, configuring the flow meter / transmitter, storing test result, plotting and storing graphs, diagnostics, password protection etc. Carrying case, easily installable in the field for calibration set up
19	Communication	MODBUS with RS 485, HART
20	Mounting	Field mounting, (Vertical)
21	Certification	PESO

## SPECIFICATION SHEET FOR FLAME DETECTORS

<b>Flame detector Type:</b>	UV and IR Detector
<b>Wave Length</b>	UV radiation over the range of 185 to 260 nanometers (1850 to 2600 angstroms)
	IR radiation in the 4.35 micron range
<b>Field of View</b>	120° cone of vision (or) Better.
<b>Sensitivity</b>	Approved Performance Specification-50 feet (15.2m) distance for a 1 sq. ft (0.092m <sup>2</sup> ) heptane fire.
<b>Response Time:</b>	Less than 5 seconds
<b>Status Indicator:</b>	LEDs indicate status of Healthy, fault, and alarm conditions
<b>Operating Medium</b>	Natural Gas.
Nominal supply voltage:	24 VDC
Supply voltage range:	20 to 36 VDC
Maximum supply current:	400 mA during COPM only
Typical current:	80 to 150 mA Depends on relays ETC
Maximum output signal load:	600 Ohms
<b>Electrical Specifications [OUTPUT: mA, Relay, Hart ]</b>	
<b>(all 3 below mentioned outputs must be available in separate connectors/ ports)</b>	
<b>1. Analog (mA):</b>	
Output signal range:	0 to 20 mA *
FAULT signal:	0 to 0.2 mA *
COPM fault signal:	2.0 ± 0.2 mA *
Ready signal:	4.0± 0.2 mA
IR only signal:	8.0 ± 0.2 mA
UV only signal :	12.0 ±0.2 mA
WARN signal:	16.0 ±0.2 mA
ALARM signal:	20.0 ± 0.2 mA
<b>2.Relay Contacts: (Alarm,Fault and Auxiliary)</b>	Fire relay (alarm)- Both Contact output NO and NC required. Fault relay - Contact output NO and NC required. Contact rating 30 VDC, 2 A or 125 VAC, 1 A
<b>3. HART</b>	
Protocol	HART protocol
	External HART Port connector (without opening of Housing cover of Flame Detector) is required in transmitter for calibration and parameter accessing.
<b>Vibration</b>	As the detector shall be vibrations arising mounted inside CNG compressor canopy, the same shall be capable of withstanding from reciprocating compressor.

<b>Approvals ( sensor, Transmitter and Terminal box / Junction Box)</b>	PESO,CSA, FM, ATEX, HART Registered, and AMS Aware
	Class 1, Div 1, groups B, C, and D (-40°C to +65°C),Type 4X, Exd iic,T5
SIL	SIL 3/SIL 2
PESO	PESO approval Must
	IP66/67, NEMA 4
Reliability	IEC 61508
AMS Aware:	Certified by AMS

RFI/EMI Protection:	Complies with EN 50130-4, EN 61000-6-4
<b>WARRANTY</b>	2 year warranty against sensor and electronics for the supplied product.
	ONSITE SERVICE TO BE PROVIDED DURING WARRANTY PERIOD
ACCESSORIES	<p><b>Housing:</b> Anodised aluminium with powder coated finish or equivalent (Explosion proof enclosure)</p> <p><b>Mounting:</b> Roof mounted or wall mounted. For threaded type detectors suitable termination box (approved for use inside hazardous area) shall be provided.</p> <p>The detector shall be supplied with suitable Sunshade/ Deluge protection, Strombaffle, Weather protection, Dustbarrier, Gassing Cap, etc as applicable protection against dust particles.</p> <p>.</p>
	2 No's Cable Glands(3/4" Double compression)
FLAME DETECTOR BUILT-IN TEST	AUTOMATIC AND MANUAL TEST
FLAME DETECTOR IMMUNITY	False alarm sources like Arc welding, X-Ray's or hot vibrating object, lightening.
<b>Manuals (soft and Hard Form)</b>	Operation, Maintenance, Calibration and Troubleshooting
<b>Software (soft and Hard Form)</b>	Software or additional device, cables required for calibration or troubleshooting of instrument shall be supplied free of cost with instrument.
FLAME DETECTOR CALIBRATION	must be inbuilt or else calibration device must be supplied along with FD at free of cost.
CALIBRATION PROCEDURE	(BOTH ZERO AND SPAN) FOR THE MODEL QUOTED TO BE PROVIDED IN DETAIL

## SPECIFICATION SHEET FOR GAS DETECTORS

<b>Type</b>	Infrared sensor with Transmitter, with Local Display or Indicator
<b>Measurement Range</b>	0-100% LEL
<b>Operating Medium</b>	Natural Gas.
<b>Operational and Certified Temperature Range</b>	65 °C Maximum
<b>Power Supply</b>	18 to 32Vdc(24Vdc nominal)
<b>Power Consumption</b>	< 4.5W max
<b>Current Demand</b>	< 235 mA at 18V
	< 190 mA at 24V
	< 155 mA at 32V
<b>Output Signals :-</b>	<b>mA, Relay, Hart</b>
<b>(all 3 below mentioned outputs must be available in separate connectors/ ports)</b>	
<b>1.Analog (mA):</b>	4-20mA, Non-Isolated, Current Source or Sink.(Default Configuration is Current Source).
Maximum 4- 20mA Loop Resistance	600 Ohms
Measuring Range (0-100% FSD)	4-20 mA
Inhibit	1 to 3mA(Default 2mA)
Warning	0 to 6mA(Default 3mA)
Fault	0mA
Over-Range	20 to 21.5mA(Default 21 mA)
<b>2.Contact output:</b>	Relay output: (High alarm, Low alarm, Trip, Fault) Contact rating: 2 A, 230 VAC/24 VDC
<b>3. HART</b>	
protocol	HART protocol
	External HART Port connector (without opening of Housing cover of Gas Detector) is required in transmitter for calibration and parameter accessing.
<b>Status Indicator:</b>	Status indication: LED indication OR Local Display. Separate indication for No gas leak, Low alarm, High alarm, optics failure and calibration in progress shall be available
<b>Vibration</b>	As the detector shall be vibrations arising mounted inside CNG compressor

	canopy, the same shall be capable of withstanding from reciprocating compressor.
<b>Accuracy</b>	± 5 % LEL through-out the range
<b>Response Time</b>	Less than 5 seconds
<b>ACCESSORIES</b>	<p><b>Housing:</b> Anodized aluminum with powder coated finish or equivalent (Explosion proof enclosure) <b>Mounting:</b> Roof mounted or wall mounted. For threaded type detectors suitable termination box (approved for use inside hazardous area) shall be provided.</p> <p>The detector shall be supplied with suitable Sunshade/ Deluge protection, Storm baffle, Weather protection, Dust barrier, Gassing Cap, etc as applicable protection against dust particles.</p>
	2 No's Cable Glands(3/4" Double compression)
<b>WARRANTY</b>	2 year warranty against sensor and electronics for the supplied product.
	ONSITE SERVICE TO BE PROVIDED DURING WARRANTY PERIOD
<b>Safety Approval / Certificate</b>	<b>For both sensor, Transmitter and Terminal box / Junction Box</b>
ATEX/UT/UT/CS A/FM/PESO	ATEX: BAS992259X II 2GD EEx d IIC T100°C (Tamb -40°C to +55°C) T135°C (Tamb -40°C to +65°C)
	UL / CSA Class 1, Div 1, groups B, C, and D (-40°C to +65°C) GOST and SAA
	CE,IEC,EEC,EMC, CENELEC AND Eexd.
	IP66/67, NEMA 4
PESO	PESO approval Must
SIL	SIL 2/SIL3
Performance Approval	EN61779 EXAM, BVS 03 ATEX G 016 X, CSA,FM C22.2 152
EMC COMPLIANCE SOFTWARE	EN 50270 ; EN 50271
<b>Manuals (soft and Hard Form)</b>	Operation, Maintenance, Calibration and Troubleshooting
<b>Software (soft and Hard Form)</b>	Software or additional device, cables required for calibration or troubleshooting of instrument shall be supplied free of cost with instrument.
GAS DETECTOR CALIBRATION	Must be inbuilt or else calibration device must be supplied along with GD at free of cost.
CALIBRATION	(BOTH ZERO AND SPAN) FOR THE MODEL QUOTED TO BE PROVIDED IN

PROCEDURE	DETAIL
-----------	--------

### **SPECIFICATION FOR KWH METER**

1	<b>Meter type</b>	3Phase 4 wire Static Energy meter
2	<b>Accuracy class</b>	0.5 S as per IS14697
3	<b>Connection</b>	Transformer Operated
4	<b>Rated Voltage</b>	240V(P-N), 415V(P-P) $\pm$ 10%
5	<b>Rated Basic current</b>	5A
6	<b>Rated maximum current</b>	10A
7	<b>Rated Frequency</b>	50 HZ
8	<b>Power Factor range</b>	Zero lag- Unity- Zero lead
9	<b>Standards compliance</b>	IS 14697, IEC 62052-11, IEC 62053-21, IS 15959
10	<b>Calibration</b>	Meter shall be calibrated at factory and no modifications should be permissible
11	<b>Energy Audit Data</b>	<ul style="list-style-type: none"> <li>a. Meter serial number</li> <li>b. Date and time</li> <li>c. Cumulative forwarded active energy</li> <li>d. Cumulative reactive energy - Lag</li> <li>e. Cumulative reactive energy - Lead</li> <li>f. Cumulative forwarded apparent energy</li> <li>g. Cumulative Maximum Demand in kW and kVA with date and time</li> </ul>
12	<b>Metering philosophy</b>	<b>Metering should be 2 quadrant lag only and programmed accordingly</b>
13	<b>Auto/Manual Scroll mode</b>	<ul style="list-style-type: none"> <li>a. LCD test</li> <li>b. Date</li> <li>c. Time</li> <li>d. Cumulative Active Energy</li> <li>e. Cumulative Apparent Energy</li> <li>f. Cumulative Reactive Energy – Lag</li> <li>g. Cumulative Reactive Energy – Lead</li> <li>h. Active Maximum demand with date and time</li> <li>i. Apparent Maximum demand with date and time</li> <li>j. Active load</li> <li>k. Reactive load</li> <li>l. Apparent load</li> <li>m. Phase wise power factor</li> <li>n. Average power factor</li> <li>o. R phase voltage</li> <li>p. Y phase voltage</li> <li>q. B phase voltage</li> <li>r. R phase current (line)</li> <li>s. Y phase current (line)</li> <li>t. B phase current (line)</li> </ul>

		u. Instantaneous average power factor with sign for lag/lead v. Frequency reading
14	<b>Maximum demand Registration</b>	Meter should store and display maximum demand in kW/kVA with date and time. Demand integration period should be 30 minutes. It is preferred that MD is computed using separate counter rather than by difference of initial and final energy counter.
15	<b>Auto Reset of Maximum Demand</b>	Meter should reset to zero and date should be customizable date

**ANNEXURE – VI: RECOMMENDED VENDOR LIST**

<b>Item Code / Description</b>	<b>Air Filter Regulators</b>
<b>Vendor Name</b>	<b>Remark</b>
Asea Brown Boveri Ltd.	
Blue Star Ltd	
Divya Control Elements Pvt. Ltd.	
Placka Instruments & Controls Pvt. Ltd	
Shah Pneumatics	
Shavo Norgren (I) Pvt. Ltd	
Veljan Hydrair Pvt. Ltd.	
Filtration Technique	
Ultra Filter	
Parker	
Swagelok	
Vanaz Engineers Limited	
<b>Item Code / Description</b>	<b>Field Instruments (P, Dp, F,L,T)</b>
<b>Vendor Name</b>	<b>Remarks</b>
Abb Automation Ltd.	
Brown Bovert Ltd.	
Ashcroft	
Murphy	
Ccs	
Waree	
Fisher Rosemount India Limited	
Fuji Electric Co. Ltd.	
Honeywell Inc.	
Tata Honeywell	
Yokogawa Electric Corporation	
Yokogawa Blue Star Ltd.	
Wika	
Druck	
Beko	
<b>Item Code / Description</b>	<b>Pressure Gauges</b>
<b>Vendor Name</b>	<b>Remarks</b>
An Instruments Pvt. Ltd.	
Badotherm Process Instruments B. V.	
Bourdon Haenni S.A	
British Rototherm Co. Ltd	
Budenberg Guage Co. Ltd.	
Dresser Inc.	

General Instruments Consortium	
Manometer (India) Pvt. Ltd.	
Nagano Keiki Seisakusho Ltd.	
Waaree Instruments Limited	
Baumer	
Walchandnager Industries Ltd.	
Wika Alexander Wiegand & Co Gmbh	
Wika Instruments India Pvt. Ltd.	
Druck	
Item Code / Description	Pressure Relief Valve
Vendor Name	Remarks
Alsthom Fluids Sapag	
Anderson Greenwood Crosby	
Bhel (Trichy )	
Aspro	
Dresser Inc.	
Fukui Seisakusho Co. Ltd.	
Instrumentation Ltd. (Palghat)	
Nakakita Seisakusho Co Ltd.	
Nuovo Pignone Spa (Italy)	
Parcol Spa	
Safety Systems Ur Ltd.	
Sarasin Rsbd	
Sebin Valves India Pvt. Ltd.	
Tai Milano Spa	
Tyco Sanmar Ltd.	
Tyco Valves & Controls India Pvt. Ltd	
Farinosla	
Fainger Laser	
Mercer	
Fisher Rosemount (Emerson)	
Swagelok	
Parker	
Item Code / Description	Suction & Discharge Filter
Vendor Name	Remarks
Beko Filter	
Ultra Filter	
Item Code / Description	Vibration Switch
Vendor Name	Remarks
Murphy	
Metrix	
Robertshaw Control	
Item Code / Description	Cartridge Filters

<b>Vendor Name</b>	<b>Remarks</b>
Beko Filter	
Ultra Filter	
Filtration Techniques	
Zander Gmbh (Germany)	
<b>Item Code / Description</b>	<b>Air Compressor</b>
<b>Vendor Name</b>	<b>Remarks</b>
Ingersol Rand (Ir)	
Elgi	
Anesta Iwata Motherson	
<b>Item Code / Description</b>	<b>Self Actuated Pr. Control Valve</b>
<b>Vendor Name</b>	<b>Remark</b>
Daniel Industries Inc	
Dresser Produits Industries	
Aspro	
Esme Valves Ltd.	
Fisher Rosemount Singapore Pte Ltd.	
Fisher Exmox Sanmar Limited	
Gorter Controls B.V.	
Instromet International Nv	
Keye & Macdonald Inc	
Nuovo Pignone Spa (Italy)	
Pietro Fiorentini Spa	
Richards Industries (Formerly Treloar)	
Rmg Regel + Messtechnik Gmbh	
Vanaz	
Nirmal Industries Limited	
<b>Item Code / Description</b>	<b>Solenoid Valves</b>
<b>Vendor Name</b>	<b>Remark</b>
Alcon Alexander Controls Limited	
Asco (India) Limited	
Jeffersons	
Asco Joucomatic Ltd.	
Asco Joucomatic Sa	
Avcon Controls Pvt. Ltd.	
Barksdale Inc.	
Blue Star Ltd.	
Herion Werke	
Schrader Scovill Duncan Limited	
Rotex Automation Limited	
Parker Hannifin , Usa	
Seitz Ag	

<b>Item Code /Description</b>	<b>Special Control Valves</b>
<b>Vendor Name</b>	<b>Remark</b>
Fisher Rosemount Sigapore Pte. Ltd.	
Flowserve Pte. Ltd. (Formerly Duriron)	
Hopkinsons Limited	
Metso Automation Pte Ltd. (Formerly Neles)	
Nuovo Pignone Spa (Italy)	
Spx Valves & Controls (Formerly Dexurik)	
<b>Item Code /Description</b>	<b>Flame Detector</b>
<b>Make</b>	<b>Remark</b>
Meggitt Avionics	
General Monitors/ Msa	
Spectrex	
Detronics	
Honeywell	
Net Safety	
<b>Item Code /Description</b>	<b>Gas Detector (Ir Type)</b>
<b>Make</b>	<b>Remark</b>
Detronics	
Sensitron	
Honeywell	
Net Safety	
General Monitors/ Msa	
<b>Item Code /Description</b>	<b>Plc</b>
<b>Make</b>	<b>Remark</b>
Siemens	
Allan Bradley, Rockwell	
Rockwell Automation	
Schnieider	
<b>Item Code /Description</b>	<b>Compressor Main Motor</b>
<b>Make</b>	<b>Remark</b>
Crompton Greaves	
Siemens	
Weg	
Abb	
Lhp	
<b>Item Code /Description</b>	<b>Main Motor</b>
<b>Make</b>	<b>Remark</b>
Siemens	
Schnieider	
Fuji	
Abb	

<b>Item Code /Description</b>	<b>Soft Starter</b>
<b>Make</b>	<b>Remark</b>
Siemens	
Schneider	
Abb	
Fuji	
<b>Item Code /Description</b>	<b>Co2 Cylinder Valve With Actuator For Co2 Flooding System</b>
<b>Make</b>	<b>Remark</b>
Gingekerr	
Ceodux (Rotarex)	
Kidde	
Fike	
Ansul	
Lpg	
Vti	
<b>Item Code / Description</b>	<b>Mass Flow Meters</b>
<b>Vendor Name</b>	<b>Remark</b>
Emerson Process Management	<b>Coriolis Type</b>

Notes:

1. Above vendor list is indicative only and any other vendor(s) apart from as mentioned above may be accepted subject to approval by Owner/Owners representative based on past track record.
2. For the vendors of items not covered in above vendor list, but required for completion of project successfully, supplier shall take approval from Owner/Owners representative for the same during project execution. Bidder shall submit the required certifications, documents, PTR and Performance letters from clients for the same.

**ANNEXURE – VII: VENDOR DATA REQUIRED (COMPRESSOR)**

S. NO	DESCRIPTION	PRINTS WITH BID	CERTIFIED INFORMATION REQUIRED AFTER PURCHASE ORDER	
			FOR REVIEW	FOR RECORDS
A	GENERAL			
1	PROJECT SCHEDULE	YES		
2	DULY FILLED-IN “CHECKLIST FOR COMPLETENESS OF BID”	YES		
3	DULY FILLED-IN “CHECKLIST FOR SCOPE OF SUPPLY”	YES		
4	DEVIATION LIST (IF ANY) TO THE APPLICABLE SPEC., DATASHEETS	YES		
5	UTILITIES REQUIREMENT SUMMARY	YES		YES
6	FLANGE DETAILS OF PIPING CONNECTION WITH CONNECTION AT BATTERY LIMIT		YES	
7	DULY FILLED IN EXPERIENCE RECORD PROFORMA	YES		
8	GARANTEE PARAMETERS AS SPECIFIED	YES		YES
9	TENTATIVE LOAD DATA FOR FOUNDATION DESIGN			YES
10	LIST OF SUB-VENDORS FOR ALL BOUGHT OUT ITEMS INCLUDING ELECTRICAL & INSTRUMENTATION ITEMS		YES	
11	LEAFLET, CATALOGUES FOR ALL ITEMS	YES	YES	
12	O & M MANUAL		YES	
<b>B</b>	<b>COMPRESSOR</b>			
1	DATASHEETS FOR THE FOLLOWING	YES		YES
A	- COMPRESSOR	YES		YES

B	- HEAT EXCHANGERS	YES		YES
C	- PRESSURE VESSELS	YES		YES
D	- ELECTRIC MOTOR	YES		YES
2	CATALOGUE FOR COMPRESSOR	YES		YES
3	TYPICAL CROSS SECTIONAL DRAWING AND LITERATURE TO FULLY DESCRIBE THE DETAILS OF OFFERING			YES
A	- COMPRESSOR			YES
B	- SUCTION VALVE			YES
C	- DISCHARGE VALVE			YES
D	- PISTON ROD GLAND PACKING & PISTON RINGS			YES
E	- LUBE OIL PUMP			YES
4	V-BELT & PULLEY WITH SELECTION CHART & CALCULATION			YES
5	COOLER DATA / DRG WITH THERMAL & MECH DESIGN CALCULATION		YES	
6	DESIGN CALCULATION, GA DRGS FOR PULSATION DAMPNER		YES	
7	PIPING & INSTRUMENTATION DIAGRAMS FOR THE FOLLOWING	YES	YES	
A	- PROCESS GAS	YES	YES	
B	- LUBE OIL	YES	YES	
C	- COOLING WATER	YES	YES	
8	TORQUE ANGLE DIAGRAM, PISTON ROD LOAD VS CRANK ANGLE		YES	
9	TORQUE SPEED CHARACTERISTICS		YES	
10	ACOUSTIC / MECHANICAL EVALUATION REPORT		YES	
11	ITEMIZED PRICE LIST OF ESSENTIAL SPARES	YES	YES	
12	ITEM LIST OF SPARES WITH PRICE FOR 5 YEARS	YES	YES	

13	DRG. FOR TESTING ARRANGEMENT & TEST PROCEDURE TO BE ADOPTED		YES	
14	CERTIFICATE FOR FOLLOWING:		YES	
A	HYDRAULIC TESTING		YES	
B	NON DESTRUCTIVE TESTING		YES	
C	MATERIAL COMPOSITION & PHYSICAL PROPERTIES		YES	
D	LEAK PROOFNESS TEST OF FRAME		YES	
E	LUBE PUMP, FRAME OIL PUMP, HYD OIL PUMP		YES	
15	DESIGN / ACTUAL ASSEMBLY CLEARANCE CHART		YES	
16	TEST RECORDS OF FOLLOWING			
A	MECHANICAL RUNNING S		YES	
B	PERFORMANCE TEST / PACKAGE TEST		YES	
C	NOISE LEVEL TEST YES		YES	
17	LIST OF SPECIAL TOOLS & TACKLES FOR INSTALLATION & MAINTENANCE	YES		YES
C	<b>ELECTRIC MOTOR</b>			
1	MOTOR DATA SHEET	YES	YES	
2	TECHNICAL LITERATURE / CATALOGUE, SELECTION CHARTS, NOMOGRAPHS ETC.	YES	YES	YES
3	GA DRAWING	YES	YES	
4	TERMINAL BOX ARRANGEMENT DRAWING		YES	
5	MOTOR CHARACTERISTIC CURVES		YES	
6	TORQUE SPEED CURVES		YES	
7	CURRENT TIME CURVES		YES	
8	P.F AND EFFICIENCY		YES	
9	TYPE TEST CERTIFICATES		YES	

10	CERTIFICATE FROM THE RELEVANT STATUTORY AUTHORITY (BASED ON THE COUNTRY OF MANUFACTURE) FOR SUITABILITY OF THE OFFERED MOTOR FOR INSTALLATION IN THE SPECIFIED AREA CLASSIFICATION		YES	
11	PRE-COMMISSIONING AND COMMISSIONING PROCEDURE		YES	
D	<b>INSTRUMENTATION</b>			
1	G.A. OF INSTRUMENT PANEL WITH BILL OF MATERIAL & WIRING DIG. FOR LCP		YES	
2	INSTRUMENT DATASHEET		YES	
3	LOGIC DIAGRAM / LADDER DIAGRAM / FUNCTIONAL DIAGRAM		YES	
4	LOOP SCHEMATIC		YES	
5	INTER CONNECTING DIAGRAM		YES	
6	OPERATING / CONTROL WRITE UP		YES	
7	ALARM / SHUT DOWN LIST		YES	
8	WIRING DIAGRAM / INTER CONNECTING PIPING		YES	
9	START UP AND SHUT DOWN WRITE UP	YES	YES	
10	START UP AND SHUT DOWN INLET LOCK DIAGRAM	YES	YES	
11	ALARM AND SHUTDOWN LIST WITH SET POINT	YES	YES	
12	LOAD CONTROL PANEL LAYOUT		YES	
13	TERMINATION DIAGRAM, PANEL WIRING DETAIL		YES	
14	LOOP SCHEMATIC		YES	
15	INTER CONNECTING DIAGRAM		YES	
16	CABLE SCHEMATIC		YES	
17	BILL OF MATERIAL		YES	

18	TEST / INSPECTION CERTIFICATE		YES	
19	LIST OF RELIEF VALVES WITH SETTINGS		YES	
20	CERTIFICATE FROM THE RELEVANT STATUTORY AUTHORITY (BASED ON THE COUNTRY OF MANUFACTURE) FOR SUITABILITY OF THE OFFERED INSTRUMENTS FOR INSTALLATION IN THE SPECIFIED AREA CLASSIFICATION		YES	

**ANNEXURE – VIII: DEVIATION SCHEDULE FOR INTEGRATED CNG  
COMPRESSOR PACKAGE**

Vendor:		
S.No .	Vendor to specify Specification number and clause number against which Deviation is sought	Description of Deviation and give reasons in support of Deviation
	-----NO DEVIATION-----	-----NO DEVIATION-----

**ANNEXURE –IX: EXPERIENCE PROFORMA RECORD**

<b>A) EXPERIENCE RECORD PROFORMA OF INTEGRATED CNG COMPRESSOR PACKAGE</b>				
<b>SR. NO</b>	<b>DESCRIPTION</b>	<b>INFORMATION OFFERED COMPRESSOR</b>		<b>INFORMATION OF EXISTING COMPRESSOR</b>
	<b>REQUIREMENT AS PER TENDER</b>	<b>Min.: 400 sm<sup>3</sup>/h</b>		
1	Status of bidder			
	a) Compressor manufacturer			
	b) Electric Motor manufacturer			
	c) Packager			
2	<b>COMPRESSOR</b>			
	Name of compressor manufacturer			
	Place of compressor manufacturer			
	Compressor model			
	Anticipated Life in running hours			
	Compressor max frame BKW			
	Comp Manufacturing code			
	Lubricated or non-lubricated			
	Nos of stages			
	Max stage temperature °C (150°C )			
	Compressor max RPM			
	Compressor operating RPM			
	Piston speed m/s			
	Vibrations at comp cylinders <10 mm / sec. Unfiltered peak velocity Vibration comp frame : Unfiltered peak velocity of 5 mm/sec or 200 micron unfiltered peak to peak vibration whichever is less			
	Material for all stages			
	Cylinder (C.S)			
	Piston Rings (PTFE)			
	Rider Rings (PTFE)			
	Piston Rod (Forged steel)			

	Valve (Rings / plates / spring) : (SS/SS/SS)			
3	<b>PERFORMANCE OF COMPRESSOR</b>			
	<b>GUARANTEED POINT:</b>			
A	Average Flow capacity (over full range of suction pressure from 14 bar(g) to 19 bar(g) varying on continuous basis)			

A) EXPERIENCE RECORD PROFORMA OF INTEGRATED CNG COMPRESSOR PACKAGE				
SR. NO	DESCRIPTION	INFORMATION OFFERED COMPRESSOR		INFORMATION OF EXISTING COMPRESSOR
	<b>REQUIREMENT AS PER TENDER</b>	<b>Min.: 400 sm<sup>3</sup>/h</b>		
B	Minimum Flow capacity corresponding to suction pressure of 14 bar(g).			
C	BKW required by compressor including compressor's lube oil pump BKW			
D	Power required for all fans including radiator fan in Kw			
E	Ventilation fans for enclosure No of fans Type of fans (included or forced draft)			
F	Site Capacity of Motor (max of "B+D" above) * 1.1			
	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			
	---- Piston rod : max design			
	--- Piston rod: calculated at safety set pr condition			
	--- Max cross head pin loading: Design '			
	--- Cross head pin loading: calculated at safety set pr condition			
	Guaranteed gas loss through rod deals; sm <sup>3</sup> /h			
	<b>Other information of compressor</b>			
	a) Year of manufacturing of compressor			
	b) Name and address of user with FAX no, phone no, E-mail address			

	c) Nos of hours the compressor have clocked on bid due date (Enclose certificate from user)			
4	<b>ELECTRIC MOTOR</b>			
	Make			
	Model			
	Rating			
	Speed			
5	<b>PACKAGE</b>			

<b>A) EXPERIENCE RECORD PROFORMA OF INTEGRATED CNG COMPRESSOR PACKAGE</b>				
<b>SR. NO</b>	<b>DESCRIPTION</b>	<b>INFORMATION OFFERED COMPRESSOR</b>		<b>INFORMATION OF EXISTING COMPRESSOR</b>
	<b>REQUIREMENT AS PER TENDER</b>	<b>Min.: 400 sm<sup>3</sup>/h</b>		
	Name of Packager			
	Place of Packaging			
	Name of Enclosure Manufacturer			
	Palace of enclosure manufacturer			
	Sound level at 1 m distance from package in db (A) 75			
	Skid size (LxBxH)			
	Skid Gross Weight (Comp. + Motor + Aux.) Kg			
	Make and model LEL detector – 1 no. each comp			
	Make and model fire detector – 1 no. each comp			
	2 nos. min C02 cylinder with online weight monitoring.			
	Volume of enclosure in m <sup>3</sup>			
	Nos. of explosion proof tube light in each enclosure			
	Coupling Direct / V – belt			
6	<b>Other information of complete package</b>			
	a) Year and place of manufacturing of the package			
	b) Name and address of user with FAX no, phone no, E-mail address			
	c) Nos of hours the complete package have clocked on bid date (enclose certificate from user)			
7	<b>Gas recovery system</b>			
	Gas recovery system with pr relief valve, pr regulator, pr gauge, manual & automatic drainage system			
8	<b>Gas Delivery system</b>			

	High pr piping with SS 316, tubing, compression fittings, NRV			
	KOD			
	Coalescent filter			

<b>A) EXPERIENCE RECORD PROFORMA OF INTEGRATED CNG COMPRESSOR PACKAGE</b>				
<b>SR. NO</b>	<b>DESCRIPTION</b>	<b>INFORMATION OFFERED COMPRESSOR</b>		<b>INFORMATION OF EXISTING COMPRESSOR</b>
	<b>REQUIREMENT AS PER TENDER</b>	<b>Min.: 400 sm<sup>3</sup>/h</b>		
	PLC based Priority panel with full bore ball valve			
	Final gas outlet connection from priority panel 3/4" SS valves and 1" OD SS compression fittings			
9	<b>ESD system</b>			
10	<b>Volume bottles / dampers at each compressor stage of compressor</b>			
	Vessels			
	<b>Drainage system</b>			
11	Manual double isolation valve			
12	Automatic valves			
13	<b>Heat exchanger</b>			
14	Code of construction API 661			
15	Gas sections of coolers shall be as per API – 11P requirements			
16	Tube material			
17	Piping between stages shall be continuous with flange connection			
18	Other tubing shall be SS 304/316 as per TS.			
19	Gas recovery vessel provided			
20	Area classification; " class 1, group D, division 1 as per NEC " OR " Zone 1, group IIA / IIB as per IS/IEC"			
21	The size of the complete package			
25	Instrumentation as indicated in TS			
30	Cabling – Double compression type cable glands and copper lugs			

31	Junction box with metallic enclosure			
----	--------------------------------------	--	--	--

## **ANNEXURE – X : PARAMETERS FOR SCADA**

### **Parameters required for SCADA**

We want to monitor / control all parameters available on the PLC through SCADA system.

### **Hardware Details: Connector Type, Communication Standard, Communication port Pin details,**

Communication Port Configuration: Baud Rate, data bits, stop bit, parity Polling Constraints: Minimum time period between two consecutive poll cycles.

Protocol Details: Protocol name and message structure for different read / write functions. Function codes for reading digital and Analog inputs

Function code for writing analog values in the IED registers

List of parameters available in the IED which can be accessed from the IED through serial port. Register address of each parameter in the IED.

A Sample of the details is given below for

understanding: PROTOCOL DETAILS:

<b>Sr.No</b>	<b>Description</b>	<b>Content/Details</b>
1	Protocol	MODBUS RTU
2	Connection Type	FCC –68 RJ45
3	Communication standard	RS232D
4	Signals supplied	Tx, Rx, GND
5	Baud Rate(Speed)	300, 600,1200,4800,9600,19200
6	Format	Software configurable

➤ PORT PIN Details:

➤ Example: RS232 Pin Details:

- IED SCADA
- RJ45
- GND
- DTR
- RTS
- TXRX
- RXTX
- CTS
- DCR

- DCD

➤ Function Code & Message Structure:

Function Code:3 – Read Output

Register Poll Format:

Address 1 Byte

Function 1

Byte Start

Item 2 Byte

NO. ITEM 2 BYTE

Response Format:

Address 1 Byte

Function 1 Byte

Length 1 Byte

Date Item 1 4

Byte Date Item n  
4

Byte

➤ Function Code & Message Structure:

Function Code: 2 – Read Input

Status Poll Format:

Address 1 Byte

Function 1

Byte Start Item  
2

Byte

NO. ITEM 2 BYTE

Response Format:

Address 1 Byte

Function 1 Byte

Length 1 Byte

Date Item 1 2

Byte Date

Item n 2 Byte

## Memory Mapping, Data Type & Parameter Information:

### A. Digital Parameters :

Sr. No.	Description	Address
1	Flow computer malfunction Alarm	
2	Mass Flow Low alarm	
3	Mass Flow High alarm	

### B) Analog Parameters:

Parameter	Register details			
	Engineering Range and Unit	GC Register	Register Format	
Density	Kg/m <sup>3</sup> (500-600)		Float	
Pressure			Float	
Temperature			Float	
Mass Flow Rate			Float	
Totalized mass flow			Float	
Yesterday's Total Mass flow			Float	
Today's Total Mass Flow			Float	
Corrected volumetric Flow rate			Float	
Yesterday's Total corrected Volumetric Flow			Float	
Totalized Mass Flow at 6 AM (Snapshot of cumulative)			Float	

### **ANNEXURE – XI : QUALITY ASSURANCE PLAN**

CUSTOMER : M/s Godavari Gas Limited

CUSTOMER'S REF NO. :

COMPRESSOR MODEL .....(ELECTRIC MOTOR DRIVEN CNG COMPRESSOR PACKAGE)

<-	(1) INSPECTION - BY OWNER /OWNER REPRESENTATIVE AND TPIA				
	(2) CERTIFICATES / DOCUMENTS REVIEW-BY OWNER /OWNER REPRESENTATIVE AND TPIA				
	(3) INSPECTION - BY VENDOR				
	(4) CERTIFICATES / DOCUMENTS TO BE SUBMITTED BY VENDOR/ SUB-VENDOR				
1	W	R	W	Y	HYDROTEST OF - CYLINDER, PRESS.VESSELS, HEAT EXCHANGERS
2	-	R	W	Y	HYDROTEST OF - CYLINDER HEADS
3	W	R	W	Y	LEAK PROOF TEST OF CRANK CASE (4 Hours . with Kerosene ) <b>Refer Note :4</b>
4	-	R	R	Y	ULTRASONIC TEST OF CRANK SHAFT, CONNECTING ROD,PISTON ROD <b>Refer Note: 1</b>
5	-	R	R	Y	MAGNETIC PARTICLE TEST OF - CRANK SHAFT, CONNECTING ROD, PISTON ROD <b>Refer Note: 1</b>
6	W	R	R	Y	RADIOGRAPHY AS APPLICABLE - PRESSURE VESSELS, HEAT EXCHANGER. GAS PIPING (only 10% joints to be witnessed)
7	W	R	W	Y	BARRING OVER TO CHECK CYLINDER END CLEARANCE AND PISTON ROD RUNOUT
8	W	R	W	Y	NO LOAD MECHANICAL RUN TEST OF THE COMPR. WITH RATED (OR MORE) SPEED AND SHOP DRIVER. (4 HRS. Min.)
9	W	R	W	Y	STRIP CHECK AND INTERNAL INSPECTION AFTER "NLMRT" OF ALL COMPRESSORS <b>Refer Note: 2</b>
10	-	R	R	Y	ELECTRIC MOTOR PERFORMANCE TEST- AT SUB-VENDOR'S WORKS PER ISO STD. <b>Refer Note: 3</b>
11	-	R	R	Y	MATERIAL TEST CERTIFICATES FOR: CRANK SHAFT, CONNECTING RODS, CYLINDER. LINER, PISTON (COMPLIANCE CERT.), PRESSURE VESSELS, HEAT EXCHANGER
12	W	R	W	Y	CANOPY STRUCTURE PAINTING INSPECTION AT WORKS. SURFACE PREPARATION TO BE INSPECTED AFTER CLEANING AND BEFORE APPLICATION OF FIRST COAT OF PRIMER.
13	W	R	W	Y	FUNCTIONAL / HV / CONTINUTY TEST FOR CONTROL PANEL ( AT SUB VENDOR'S WORKS)

14	W	R	W	Y	MECHANICAL STRING TEST FOR 4 HOURS FOR TWO (2) NOS. OF CNG COMPRESSOR PACKAGES
15	-	R	R	Y	TEST CERTIFICATES FOR - SAFETY SWITCHES, SAFETY RELIEF VALVES, SOLENOID VALVES
16	-	R	W	Y	FINAL MOCK-UP ASSEMBLY OF THE PACKAGE - AS PER GAFD, P& I DRAWINGS. WIRING DIAGRAM
17	W	R	W	Y	PERFORMANCE TEST AT SITE AT GUARANTEED PARAMETERS.
18	W	R	W	Y	FIELD TRIAL RUN FOR 72 HRS.
<b>LEGENDS :</b> W = WITNESS, R = REVIEW OF DOCUMENTS, Y = DOC. SUBMISSION BY VENDOR / SUB- VENDOR					

NOTES:	
1	Crank Shaft, Connecting Rod: UT / MPT shall be conducted in either in forging-OR-in finish condition.
2	Strip test is limited to open Crank Case cover, Crosshead guide & Distance piece. Cover and opening of bore & other (sails. Piston one valve per cylinder).
3	Review of manufacturer's test reports/certificates of all gas engines.
4	Witness of tests by TPIA or owner/owner representative.
5	Inspection of the components / assembly shall be conducted as per standard Test Procedures.
6	All reference codes/ Standards, documents, P.O. copies shall be arranged by vendor/ supplier for reference of Owner / Owner's representative / TPIA at the time of inspection.
7	The owner shall submit their own detailed QAP prepared on the basis of above technical specification for approval of Owner/ Owner's representative.

**NOTE : TPIA (THIRD PARTY INSPECTION AGENCY WILL BE APPOINTED BY SUPPLIER AFTER DUE APPROVAL FROM GGPL**

**ANNEXURE - XII**  
**DATA SHEET**

**DATA SHEET: MEDIUM VOLTAGE SQUIRREL CAGE INDUCTION MOTOR  
ELECTRICAL DESIGN DATA**

1.	Motor tag no.			
2.	Voltage (V)	415V + 10%	Phase 3	Frequency (Hz.) 50 Hz+3%
3.	Fault level (KA)	<b>NOT APPLICABLE</b>		
4.	Method of starting	<b>VFD</b>		
5.	Phase	<b>THREE</b>	Connection – <b>STAR-DELTA</b>	No. of terminal – <b>6</b>
6.	Design Ambient temp ( <sup>0</sup> c)	<b>50 <sup>0</sup>C (IN ACCOUSTIC ENCLOSURE)</b>		Temp. rise ( <sup>0</sup> c) <b>70 <sup>0</sup>C (Maximum)</b>
7.	Cable size (mm <sup>2</sup> )	AS PER SPEC ATTACHED		Type <b>CU. COND. PVC INS.</b>
8.	Enclosure type	IP 55, Ex-d, IIA, IIB,T3		Cooling <b>TEFC</b>
9.	Insulation class	CLASS-F with temperature rise of CLASS B		
10.	Haz. Area classification/ Gas Group	ZONE-1, GROUP-IIA, IIB, Temp Class T3 as per IS/IEC		
11.	Type of explosion protection: Ex (d)		Applicable standards: <b>IS/IEC</b>	
Technical particulars from Driven equipment manufacturer				
12.	Suggested Motor Rating in KW/ Manufacturer		# / #	
13.	Shaft kw/kw at end of curve		# / #	
14.	Speed/ rotation of equipment from Coupling End		# / #	
15.	Starting/ max. Torque required (mkg)		# / #	
16.	WK <sup>2</sup> of equipment including/ excluding flywheel (kgm <sup>2</sup> )		# / #	
17.	Thrust up/ down (kg)		# / #	
18.	Equipment/ coupling type		# / #	
19.	Starting Condition-On no load/ Under loaded condition		#	
Technical particulars from motor manufacturer				
20.	Manufacturer	*		
21.	KW Rating	*	No. of poles	*
22.	Frame designation	*	Mounting (Horizontal)	*
23.	Full load speed (Max. 1500 rpm)	*	Full load Torque (mkg)	*
24.	Starting torque as % of full load	*		

	torque			
25.	Full load current (A)	*		
26.	Starting current at 100% Voltage (A)	*		
27.	Breakdown or pull out torque %	*		
28.	Rotation viewed from coupling end	*		
29.	Starting time at 75% V	* (sec.)	Starting time at 100% V	* (sec)
30.	Time (Te) for increased safety motors at 100% Voltage (secs.)		NOT APPLICABLE	
31.	Locked rotor with stand time cold/ hot at 75% V(sec)	*	At 100% V(sec)	*
32.	WK <sup>2</sup> of motor (kg m <sup>2</sup> )	*		
33.	Power factor at 100% load	*	Power Factor at 75% load	*
34.	Efficiency at 100% load	*	Efficiency at 75% load	*
35.	Space heater watts/ volts	*/ <b>240V AC</b>		
36.	Bearing type/ no. DE	*/*	Bearing type/ no. NDE	*/*
37.	Type of Lubrication	*		
38.	Weight of motor (kg)	*		
39.	Canopy required/ Not required	NOT REQUIRED		

# TO BE FILLED BY BIDDER BASED ON THE PACKAGE DESIGN

\* TO BE FILLED BY MOTOR MANUFACTURER

Bidder must quote for only one make of motor. Bidder shall submit filled up data sheet for the selected make of motor only.

Motor Terminal Box must be suitable for the cable size indicated on data sheet.

**POWER CABLE SIZES FOR 415V MOTORS**

S. No.	Motor Rating KW	CABLE SIZE mm2		No. of Cores	CABLE DIAMETER - mm (APPROX)		
		C U	A L		Overall	Under Armour	Over Armous
	Below 3.7 KW	4		3			
	3.7	6		3			
	5.5	10		3			
	7.5	10		3			
	11.0	16		3			
	15.0	16		3			
	18.5	16		3			
	22.0	16		3			
	30.0	25		3			
	37.0	25		3			
	45.0	35		3			
	55.0	50		3			
	75.0	95		3			
	90.0	120		3			
	110.0	295		3			
	125.0	210		3			

	132.0	2 x 1 2 0		3			
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NOTES: 1. Above table is valid for 2/4/6 pole motors. For low speed motors cable sizes shall be defined at the time of detail engineering.

2. Cable size for motor space heater shall be 3x2.5 mm<sup>2</sup> with Cu Conductor.

3. Cables will be 650/1100V, copper conductor, FRLS-PVC insulated, FRLS-PVC extruded inner sheath armoured with overall FRLS-PVC sheath.

Cables external to Integrated CNG Compressor package will be supplied by Owner. All cabling inside the package is the scope of Supplier.

**DATA SHEET: PRESSURE, VESSEL**

**(To be filled in by the Vendor)**

PROJEC

T UNIT

ITEM

NO.

EQUIPME

NT

CLIENT

JOB NO.

PACKA

GE MR.

NO.

CODE FOR DESIGN AND CONSTRUCTION      ASME

SEC-VIII DIV1 DESIGN CONDITION

PRESSURE (kg./

cm<sup>2</sup>g)

TEMPERATURE (°C)

OPERATING

CONDITIONS

PRESSURE (kg./

cm<sup>2</sup>g)

TEMPERATURE

(0C)

CORROSION ALLOWANCE                      3 MM

SERVICE    CNG LETHAL [X]

OTHERS CO2 LIQUID LEVEL (mm)

SPECIAL SURFACE FINISH INSIDE VESSEL      REQD. [ ] NOT REQD. [ ]

TYPE OF VESSEL                                      HORIZONTAL [ ]

VERTICAL [ ] DIAMETER (mm)

HEIGHT TL TL (mm)

SKIRT/ LEG HEIGHT

JOINT EFFICIENCY                                      SHELL 1.0              HEAD 1.0

RADIOGRAPHY    SHELL 100%              HEAD

100% POST WELD HEAT TREATMENT

MATERIALS OF CONSTRUCTION      SA 516 GR

60/70 SHELL, REINFORCEMENT PADS

HEADS/

CONES SHELL

FLANGES

NOZZLE

FLANGES

NOZZLE NECK

MAN-WAY

NECK PIPE

FITTINGS

GASKETS

(EXTERNAL)

GASKET

(INTERNAL) SKIRT/

LEG SUPPORT

INTERNAL PARTS

EXTERNAL PARTS

INTERNAL BOLTS/

NUTS

CLIP ATTACHMENTS

(EXTERNAL) ANY OTHER

GENERAL REQUIREMENT

**NOTE: VENDOR SHALL SUBMIT COMPLETED DATA SHEET ALONG WITH  
OFFER WHEREVER ENGG. DRAWING IS NOT ATTACHED FOR THE  
VESSEL.**

**1. DOCUMENT DISTRIBUTION SCHEDULE**

- 1.1. Documents and drawings under column no. 3 shall be submitted with each copy of the bid.
- 1.2. Documents listed under column 4 are to be submitted in 4 copies
- 1.3. Documents listed in column 5 are to be submitted as hard bound indexed book containing the following details in Twelve (12) copies & 2 transparencies and to be submitted within 4 weeks of release note/dispatch of materials/ equipment from vendor's works. All transparencies to be supplied in rolls (in two sets).

**2. DETAILS TO BE INCLUDED IN FINAL DOCUMENTS BOOKS**

- 2.1. Copy of P.O. and all amendments.
- 2.2. Copy of Purchase Requisition and all amendments.
- 2.3. Manufacturing Data Book containing all test certificates of components, raw materials, stage manufacturing tests and inspections, final tests & inspection documents including welders' qualification & welding procedure qualification, repairs & reworking carried out in shops. All raw material test certificates must be correlated to the P.O. Item No. & component to which they relate by clear notings on the certificates.
- 2.4. Spares details including assembly drawings, part numbers, delivery, prices and ordering information.
- 2.5. All design calculations carried out by the vendor.
- 2.6. Final Drawing Index and all as-built drawings reduced to A3/ A4 size and wherever reduction is not possible, full size copies duly folded and placed in plastic pockets.
- 2.7. Catalogues/leaflets of sub-vendors/suppliers of various bought out components highlighting the components actually supplied correlated to P.O. Item Numbers.
- 2.8. Operating and maintenance instructions including lubrication schedules with details of suppliers for procurement by OWNER for subsequent needs.
- 2.9. Release Note and Packing List.
- 2.10. Any other documents asked for in the Purchase Requisition.
- 2.11. All final drawings shall also be given to purchaser in digitized form on CD-ROM compatible to AUTOCAD software.
- 2.12. Final documents including operation and maintenance manual should be submitted, one copy per package plus one original.
- 2.13. Operation and maintenance manual shall include assembly and disassembly, specification (torque chart), parts manual, complete list of bill of material, bought out spares and accessories. One original plus individual copies for the no. of compressor packages supplied.

**3. SPECIAL INSTRUCTIONS FOR SUBMISSION OF DWGS./DOCUMENTS:**

- 3.1. Fold all prints to 216 MM x 279 MM size & roll transparencies.
- 3.2. Vendor to forward the drawings and documentation to GGPL (Attention vendor prints control department) clearly specifying purchasers Job no. & Req. No.
- 3.3. The drawing/Document no. with Rev. No. is essential. The number may be upto a

maximum of 28 characters in length.

- 3.4. Each Drawing/Document submitted to GGPL must be checked and signed/stamped by vendor before it is submitted to GGPL.
- 3.5. Revision number must change during subsequent submission of vendor document.
- 3.6. Multi-sheet documents other than drawings must be submitted in their entirety in the event of a re-submission even if only a few sheets are revised.
- 3.7. Final submission in bound volumes shall necessarily have a cover page giving project title, Item name, P.O. No. particulars of owner, consultant & vendor and an index giving list of drawings & documents included (with revision no.).

- 3.8. All vendor drawings to be provided with a blank space measuring 75 mm W x 38 mm H for marking of review codes etc. by GGPL.
- 3.9. The review of the vendor drawings shall be done by GGPL, as applicable, under the following review codes:

Review Code 1	No comments.
Review Code 2	Proceed with manufacture/fabrication as per commented drawings. Revise drawings required
Review Code 3	Document does not conform to basic requirements.

- 3.10. Review of vendor drawings by GGPL would be only to check compatibility with basic designs & concepts & would in no way absolve the contractor/vendor of his responsibility to meet applicable codes, specifications & statutory rules/regulations.
- Vendor shall submit within 10 days after placement of FOI, the complete list of drawings/ documents with submission dates against each. Critical drawings, only, the list of which will be agreed during kick-off meeting shall be reviewed jointly at GGPL's office.

## **SECTION – II: TECHNICAL SPECIFICATION FOR CASCADE**

## **1.0 SCOPE**

This document covers, minimum requirement for design, engineering, procurement, fabrication/manufacture, assembly, inspection, testing at works and supply at site/GGPL's stores

## **2.0 SITE ENVIRONMENT**

The climatic conditions to be considered for selection, design and derating of equipment shall be as indicated below:

Height above Mean sea level : 25m

Max. site temp. : 450C

Minimum site temp. : 140C

Max. RH : 90% in the month of July.

Min. RH : 28% in the month of January.

The equipment offered shall be suitable for smooth, efficient and trouble free service in the tropical climate prevailing at site as indicated above.

The equipment shall be designed to give efficient and reliable performance under outdoor industrial conditions and shall be rendered protected against rats, lizards and other vermin.

## **3.0 INSTRUCTIONS TO VENDORS**

This specification describes the technical specification of the equipment to be supplied and/or installed for CNG stations of GGPL.

Various parts of the specification shall be read in conjunction with each other. In cases where requirements given in different parts differ, the most stringent shall govern.

The specification indicates the scope and requirements completely and clearly as possible. 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.

Vendor may contact GGPL and obtain clarifications, required, if any, at any stage, after award of LOA.

The Vendors are advised to visit the sites before submission of their offers, to ascertain for themselves type, nature and extent of work involved and actual site conditions. Failure to do so shall not absolve the Vendor of their responsibilities regarding supply, installation, testing, commissioning etc. under their scope of work. Further more, no plea of the Vendor based on unfavorable site conditions and/or non-availability/lack of information shall be considered.

The Vendor shall confirm clause by clause acceptance of technical specification. Comments and/or deviation if any, of the Vendor on Owner/Consultant's NIT document (including technical specification) shall be given clause wise. Clauses, on which no specific comment or deviation will be indicated in the offer, shall be treated as accepted by the Vendor.

It will be the responsibility of the Vendor to comply fully with relevant National/International standards, Indian Explosives Act, Regulations of Insurance association of India and Factories Act, while supplying materials and/or carrying out work as per this specification.

Vendor's responsibility shall also include preparing and submitting all necessary drawings, calculations, test certificate etc. as required by concerned inspectorate / authorities.

The Vendor, free of cost and without affecting agreed milestones, shall carry out modifications suggested by the statutory bodies.

Civil engineering work i.e. foundation, trenches etc. shall be arranged by Owner. The vendor shall submit foundation and other drawings indicating requirement of work to be carried out by Owner within two weeks of placement of order. In case the requisite information regarding requirement of slots, holes, pipe and other fixing inserts etc. as required for proper installation of equipment is not indicated by the Vendor within two weeks from placement of order, such facilities shall have to be arranged/provided by the Vendor at their own cost.

All work shall be carried out to the satisfaction of the Owner. Any work found to be carried out without the approval of Owner or work which is considered to be unsatisfactory and of poor quality of workmanship shall be rectified by the Vendor without any additional cost.

The Vendor shall not vary the scope of work as detailed in the approved drawings and specification, without written permission of the Owner. The work shall be done as per approved prints of the drawing only.

The Vendor shall submit a bar chart showing all important milestones for the completion of supply within 15 days from the date of issuance of Fax of Intent (FOI) and shall provide the fortnightly progress report in duplicate accordingly.

The Vendor shall attend progress meetings and all other meetings called by the Owner. The Vendor's representative shall have the authority to make all decision related to the Contract.

All expenses for all the above activities shall be done and borne by the Vendor.

All pages of the offer shall be numbered and contents with page numbers shall be given at the beginning. All pages of the offer shall be submitted in bound volume.

#### **4.0 GAS COMPOSITION**

<b>Component</b>	<b>Avg Gas Composition (mol%)</b>
Nitrogen	0.14681
Methane	93.49718
CO2	1.53676
Ethane	1.97711
Propane	1.79066
i- Butane	0.33204
n-Butane	0.39690
i-Pentane	0.09208
n-Pentane	0.07182
n-Hexane	0.21
GCV	9479.5
NCV	8554.4
Specific Gravity	0.6057

#### **5.0 CODES AND STANDARDS TO BE FOLLOWED:**

The design, construction manufacture, supply, testing and other general requirements of the Storage Cascades should be strictly in accordance with the Applicable Standards and Codes and should comply fully with relevant Indian/International standards, Gas Cylinder Rule 2016, Indian Explosives Act – 1884, Stationary and Mobile Pressure Vessels (Unfired) Rules (SMPV)1981, Design Code,7285 (Part-2):2016, CNG

Cylinder Valves, IS:3224-1979 (Amendments 1983,84,85,86,92,98), Hydrostatic Stretch Test, IS:5844-1970, Safety Devices of Gas Cylinders, IS:5903-1970, regulations of Insurance Association of Indian and Factories Act while carrying out work as per the specification.

The bidder without any additional cost and delivery implications should carry out any modification suggested by the statutory bodies either during drawing approval or during inspection, if any.

#### **CODES & STANDARDS TO BE FOLLOWED:**

IS 7285 (Part-2):2004 Specification for seamless steel cylinders for permanent and high pressure liquefiable gases.

IS 3224:2002 Valve fittings for compressed gas cylinders excluding liquefied petroleum gas (LPG) cylinders.

OISD – 179 Safety requirements on compressors, storages, handling and refueling of natural gas for use in automotive sector.

GAS CYLINDER RULES – 2016

FRAME STRUCTURAL STEEL SPECIFICATION-IS: 2062:

1992 GRADE-A INDIAN EXPLOSIVES ACT.

SAFETY DEVICES OF GAS CYLINDER IS:5903-1970, Regulations of insurance association NFPA 52 Standards for CNG Vehicular systems

All the applicable statutory codes, national laws and local regulations for safety and Environment protection shall be followed by the vendor for design , engineering, fabrication etc. the vendor shall obtain from concerned authorities all necessary approvals.

## **6.0 EXTENT OF SUPPLY AND SERVICES**

- **Supply**

Supply of CNG storage cascades of capacity 750 water liter (-0%, + 5%) at 15°C with following minimum details:

- All cylinders should be designed, constructed and tested in accordance with the Indian IS: 7285(Part2):2004 or similar such other standard code approved by the Petroleum & Explosive Safety Organization.
- Each cylinder equipped with cylinder shut-off valve and Combination Bursting Disc & Fusible Plug (Conforming to IS 3224:2002).
- Robust painted Iron cascade frame. The iron surface shall be properly cleaned, primer and paint selected and applied to have a service life of at least five years. The exterior of the equipment is required to be corrosion free for at least five years and to have a fade free life without oxidation of paint surface for at least five years in an environment of bright sunlight with an intensive UV content. The bidder to specify the grade of paint intended to be used.
- Interconnecting tubing/piping, fitting, valves.
- Non return valves (NRVs) as required for three-bank operation.
- Pressure gauge on each bank.
- All other items required for use of cascade as mobile for transportation of gas shall be properly fitted and the drawing of cascade shall be approved by GGPL prior to supply.
- **The services to be rendered by vendor shall include but not limited to the following:**
  - Preparation and submission of documents/drawings as per schedule under point “D” of MR and Gas flow calculations, 4 –G static test Calculation of one complete assembled cascade with all the cylinders mounted & filled and sequencing calculations for cascade for maximizing the recovery from the cascade storage for residual cylinder pressure of incoming vehicle for refill pressure 30 bar g.
  - Obtaining approvals from concerned departments/agencies/statutory authorities such as BIS Certificate, PESO etc.
  - Procurement of raw materials, bought out components, fabrication, shop assembly.
  - Shop inspection and testing including third party inspection (TPIA) or inspections by GGPL’s delegate and statutory approvals.
  - Testing at site.
  - Packaging, crating, dispatch of cascades.
  - Cascade commissioning assistance.
  - Paintings as per the present document.
  - Preparation and submission of documents/drawings as per schedule.

## **7.0 TECHNICAL SPECIFICATIONS**

The following specification is to give the vendor the technical and operating conditions the cascades must fulfill. Features other than those indicated herein but which call for a better design, increase in efficiency, enhance reliability, optimization may be accepted

subjected to GGPL's approval. The cascade shall be shipped in completely assembled condition. Gas supply line and delivery connection shall be made at site.

The vendor shall bid in their main offer, items according to the technical specifications outlined below.

- **Cascade**

- Cascade shall be a group of identical cylinders of capacity required to meet the specified total water capacity, dimensional and weight limitations. The cascades shall be provided with structural frame having facility of lifting and placement.
- Cascade storage Capacity.

The water storage capacity of static cascade shall be 750 (-0%, +5%) water litres at 15 degree C (Cylinders conforming to IS:7285 (Part 2)-2004).

- The water liter capacity of any individual cylinder in –group of cylinders forming cascades shall not exceed 125 liters at 15 degree C for 750 water liter capacity cascades.
- The design, construction & testing of cylinder shall be as per IS 7285 – 2004 and approved by Petroleum and Explosives Safety Organization (PESO), Government of India for use in India for specified condition.
- Working pressure of cascade cylinder shall be minimum 250 bar g at 15 degree C.
- Storage cylinder manufactured older than 2017 shall not be accepted.
- Cylinder material shall be seamless alloy steel (Cr-Mo) as per design/drawings approval by Petroleum and Explosive Safety Organization (PESO), Govt of India.
- Cylinder neck threading shall be as per IS 3224-2002 or as per design approved by Petroleum and Explosive Safety Organization (PESO), Govt of India.
- In case cascades with 50 litres cylinders are offered vendor shall observe minimum neck threads size of dia 25.4 mm standard. Type 4 threads with a taper of 1 in 8 on diameter confirming to IS-3224:2002 or equivalent.
- The cylinder shut-off valve shall be with combination Bursting Disc and Fusible Plug conforming to requirements of IS 3224:2002 or as per design approved by Petroleum and Explosive Safety Organization (PESO), Govt of India.
- The burst disc shall rupture on excess pressure as well as excess temperature either individually or combined. The burst disc discharge shall be manifold to a common header for safe venting. Vendor shall indicate burst pressure and temperature.
- The cylinder shut-off valve orifice shall be designed for high flow to permit the combined flow of 100kg/min from each bank at pressure of 250 bar g. Vendor to furnish necessary calculations indicating overall pressure drop for each bank, Coefficient of flow (Cv) values orifice size etc.

- Number of cylinders in the cascade shall be divided into three independent banks of low, medium and high pressure of different storage pressures. Vendor shall optimize the number of cylinders in each bank for maximizing the recovery from the cascade storage and submit the calculations along with the bid. Vendor may assume the residual cylinder pressure of the vehicle coming for refill at 30 bar g.
- The interconnecting tube work of cylinders manifold in configuration suitable for priority filling and sequential dispensing system by the electronic CNG dispensers at the Retail Outlets.
- Full bore ball valves for isolation shall be provided at inlet of each fill line and at each bank outlet line. The final end connection at battery limit shall be 3/4" OD with nut and double ferrules for directly connecting a 3/4 "OD tube.
- The interconnecting tube work shall be minimum of 3/4 "OD tubing. The sizing of connecting tubing between each outlet and its associated cylinders shall be such that where they join the total incoming flow areas shall not be less than outgoing area. The loops in tube work shall be provided for absorbing contraction, expansion and vibration piping/tubing shall be suitably clamped to the frame structure.
- All cylinders should be new and unused. Re-certified cylinders are not acceptable. Before using/refilling, the cylinders which has to be made free of air contained gas shall be purged by an inert gas or by the CNG gas. All cylinders in a cascade shall be of same capacity.
- Cylinders in the cascade may be vertically or horizontally placed. In case of horizontal configuration, minimum 30 mm cylinder to cylinder gap shall be provided (Conforming to requirements of OISD-179). The material used to separate the cylinders should be sufficiently strong enough and should not absorb moisture. Special precautions should be taken to avoid corrosion at the point of contact.
- All cylinder valves and fittings must be rated for the full range of temperature and pressures and the manufacturer should stamp or otherwise permanently mark the valve body to indicate the service rating.
- Double compression ferrule Fittings shall be used in the connection tubes.
- All cylinders to be hydrostatically tested and approved by third party certification body. Test certificates shall be duly endorsed by approval body and issued before delivery.
- The location of inlet/outlet tube and pressure gauges shall be as per approved drawing.
- Cascade to be purged with N2 after testing and shipped with a positive pressure of N2 in the cascade. Suitable vent as attached in the drawing to be provided for stationery cascade.

• **PIPING/TUBING/FITTING/PRESSURE GAUGES**

- Materials used for the piping shall be stainless steel 316 fully annealed seamless confirming to ASTM A269 with maximum hardness of Rb80 or less and suitable for bending and flaring. OD tolerance shall not exceed +0.005%. The piping

/tubing material shall be of Sandvik /FAE/ TUBACEX (SCHOELLER-BLECKMNN)/ PARKER make.

- All fittings including valves shall be of Swagelok / Parker / ABAC/ VOSS make. Material shall be SS 316 conforming to ASTM A269. Open ends on fittings and vents shall be provided with caps.
- Double compression ferrule fittings shall be used in tube connections.
- Liquid filled pressure gauge of diameter 4", (0-400 kg/cm<sup>2</sup>) with a 3 – way isolating valve on each bank shall be used. Thus each cascade shall have three pressure gauges. Pressure gauges shall be securely mounted.
- All end connections, pressure gauges, valves and fittings of cascade shall be within tamper proof, wire cage enclosure. There shall be on one side of cascade for ease of operation.
- Material of vent tubing shall be Copper & Brass fitting as per ASTM B75, B 68 and make shall be of Sandvik/Parker.

- **PAINTING**

Cylinders shall be painted as per Gas Cylinder Rules/IS code as follows:

- White color on cylinder body.
- Signal red on cylinder neck portion.
- Yellow color on frame.

The paint shall be chosen, primed and applied as to have a service life of five (5) years. The exterior surface is required to be corrosion free for five (5) years and to have fade free life without oxidation of paint surface for five years in an environment of bright sunlight with an intense UV content.

Surface preparation by Shot Blasting as per grade SA 2 1 / 2 IS 9954/ ISO 8501. Three coats of paint shall be applied with minimum thickness of 300 micron. The recommended painting system should be of category C5-I very high (Industrial) as specified in the standard ISO 12944 Part 1 – 8. The proposed Painting system shall conform to Table A5 of ISO 12944 - 5 standard.

## **8.0 INSPECTION AND TESTING**

- Vendor shall carryout cylinder bursting test of one cylinder from the entire batch produced for supply to GGPL in case offered cylinders are of new design (conforming to the requirement of IS 7285:2004). Vendor shall inform the schedule of the test well in advance to enable Owner or their authorized representative to depute technical personnel for witnessing the test.

- Vendor shall carry out all standards shop test/QA/QC as per recommendation of manufacturer/Chief Controller of Explosives. Copies of the testing/inspection carried shall be furnished to GGPL.
- Vendor shall furnish record of storage capacity check of each cylinder in a cascade and the same need to be demonstrated to Owner or their authorized representative.
- Each assembled storage cascade with all tubing, valves shall be pressure tested to ensure existence of no leakage prior to dispatch.
- Manifold of the cascade shall be tested to 250 – bar g. The manifold shall be checked for sequencing and no back flow between any two banks with all valves open.
- The bidder shall appoint Third Party Inspection Agency for carrying out the inspection at bidder's works as per approved QAP, approved drawings & tender documents and TPIA charges shall be borne by the bidder. Successful bidder will propose three names from the list and owner will approve the TPIA.

## **9.0 DOCUMENTATION**

### **Following documents shall be submitted with the offer:**

- Drawing of cylinder of specified parameters and proposed to be used in offered cascades, approved by Chief Controller of Explosives, PESO Nagpur and Government of India.
- Schematic of cascade piping.
- Bill of quantities with weight of each component.
- Make of bought out items.
- GA Drawing of the Cascade.

### **Following documents shall be submitted after release of order:**

- Detailed quality control procedure/QAP, duly approved by PESO, Nagpur, for manufacture of cylinder, fabrication of frame etc within two weeks of release of order.
- Schematic of cascade piping, drawing of cascade frame and bill of quantities with weight of each component and make for Owner's review and approval.
- The supplied cylinders shall have the certification from PESO, Government of India. Nagpur for suitability of each cylinder for filling and storage of CNG upto 250 bar g at 15 degree C in India.
- Vendor shall furnish the material test certificates for all bought out items like cylinder raw material, tubing/piping, valves, check valves and fittings with the shipment.
- QA/QC report for manufacture of cylinder and testing with shipment.

- Three (3) sets of Operation & Maintenance manual. All test certificates and all others relevant documents per cascade in soft (PDF format) in CD/DVD & hard copy.

#### **10.0 EXPERIENCE RECORD PERFORMA FOR CASCADE**

Vendor must fill the following format, which is essential to access the bidder's capability.

S.No	Parameter	Information on offered model	Information on existing cascade (Location)		
			1	2	3
1	No. of units				
2	Service				
3	Working pressure of cascade in bar g				
4	Site min/max temp.				
5	Normal flow from each bank kg/hr				
6	Cascade water capacity-liters				
7	Water capacity of single cylinder used in cascade - liter				
8	Material of cylinder				
9	Thickness of cylinder wall and disc end in mm				
10	Material of vent tubing				
11	Piping material and make				
12	Valve make				
13	Valve type and dia				
14	Nos. of banks in cascade				
15	Nos. of cylinder in low bank				
16	Nos. of cylinder in medium bank				
17	Nos. of cylinder in high bank				
18	Water capacity of cylinders in individual banks				
19	Contact person				
20	4 G static calculation for one complete assembled package				
21	Cylinder burst test for one cylinder				
22	Design standard (CODE) used				
23	Total weight of cascades in tones				
24	Burst pressure and temperature for burst disc in bar g and deg C				
25	Hydrostatic or Hydrostatic stretch test				
26	Pressure test for leakage				
27	Approval from PESO Nagpur				
28	Dimensions of package maximum				

29	Date of commissioning of cascade				
30	Where cascades are located: Address and fax/telephone no. of				
31	Major problems encountered, if any				

### **CASCADE DATA SHEET**

<b>S.N o.</b>	<b>Parameter</b>	<b>Specification</b>	<b>Offered</b>
1	Type of Service	CNG	
2	Capacity(in water liter)	750 (-0% . +5%)	
3	No. of Banks	3	
4	Cascade Dimensions	OISD-179	
5	Cascade frame structure is be able to withdraw 4 G four time of gravity) test from any direction without any distortion	Yes	
6	No. of Cylinders in each bank		
a.	Low Bank	*	
b.	Medium Bank	*	
c.	High Bank	*	
7	Cylinder		
a.	Cylinder make	EKC/ RAMA	
b.	Compliance Code	IS 7285(Part2):2004	
c.	Cylinder Size at 15 0 degree C (in water liter)	Not exceed 125liters	
d.	Cylinder Operating Condition	250 bar g at 15 degree C	
e.	Cylinder Testing parameters	As per IS:7285:2004	
f.	Cylinder Material	Seamless alloy steel (Cr-Mo)	
g.	PESO approval	Yes	
h.	Gas quantity stored in the cylinder at 15 degree C		
8	Cylinder Shut-off Valve		
a.	Make	Tekno /OMB/EMAR SPA	
b.	Compliance Code	IS 3224:2002	
9	Combination Bursting Disc and Fusible Plug	To be provided	
a.	Burst Pressure (in bar g)	*	
b.	Fuse Melting Temperature (in degree C)	*	
10	Interconnecting Tube Size	Minimum ¾ “ OD	
11	Pressure Drop for each bank		
a.	Low Bank	*	
b.	Medium Bank	*	
c.	High Bank	*	
12	Coefficient of Flow (Cv)		

**Note:**

1. All tubing fittings & other piping components shall conform to recommendations of ANSI B31.3” Process Piping”.
2. (\*) – To be furnished by bidder.

**QUALITY CONTROL TABLE  
HIGH PRESSURE GAS CYLINDER ,  
CASCADE FRAME & FITTINGS**

S.N O.	OPERATION / PARAMETER	CHARACTERISTICS/ PARAMETERS	ACCEPTANCE CRITERIA & CERTIFICATION	INSPECTION FREQUENCY	VENDOR	TP IA	C A	REMARKS
1	Raw Material	Chemical Composition	Chrome Moly Steel, Grade- DS-202/IS:7285-2004 Cl. 5.2 Table-1	One sample per heat No.	P	R	R	Verification of RMT Certificate Received from RM supplier.
<b>IN PROCESS</b>								
2	Raw Material Cutting (seamless Tube)	Length	As per process heat	4-5 jobs during setting approval & every two hour.	P	W/R	R	
		Thickness	Minimum as per approved drawing Tolerance + 30%	3-4 jobs during setting approval & every four hour.				
		Outside Diameter	As per Approved drawing (Tolerance $\pm 1$ ) IS-7285 : 2004	3-4 jobs during setting approval & every four hour.				
		Surface Flaws	Free from Lamination, crack, Dent, corrosion , silvers etc.	3-4 jobs during setting approval & every four hour.				
		Ultrasonic Examination	IS-7285 : 2004	Each Cylinder				
3	Bottom Forming	<b>Bottom Thickness</b> Centre of	1.5 T min (where T is wall thickness) IS: 7285 : 2004	4-5 jobs during setting approval & every four hour.	P	W/R	R	

		Bottom Side of Bottom <b>Footing</b> Visual Inspection  <b>Ultrasonic Examination</b>	Free from crack, excess metal, pin hole, ball formation, roller mark and other surface defects.  IS: 7285 : 2004	4-5 jobs during setting approval & every four hour.  Each Cylinder				
4	Neck Forming	Solid Neck Length  Neck Diameter  Surface finish, defects  <b>Ultra-sonic Examination</b>	As per Approved Drawing  As per Approved Drawing  Free from roller mark, Pit mark, excess metal at neck, crack and other surface defects  IS: 7285 : 2004	4-5 jobs during setting approval & every two hour.  4-5 jobs during setting approval & every two hour.  4-5 jobs during setting approval & every two hour.  Each Cylinder	P	W/R	R	

		<b>QUALITY CONTROL TABLE HIGH PRESSURE GAS CYLINDER , CASCADE FRAME &amp; FITTINGS</b>						
<b>S.N</b>	<b>OPEARTION / O. PARAMETER</b>	<b>CHARATERIST ICS/ PARAMETERS</b>	<b>ACCEPTANCE CRITERIA &amp; CERTIFICATION</b>	<b>INSPECTION FREQUENCY</b>	<b>VEND OR</b>	<b>TP IA</b>	<b>C A</b>	<b>REM ARKS</b>
5	Heat Treatment	Hardness (As Tempered)  <u>Mechanical Properties</u> Tensile Strength  Yield Strength  % Elongation  Impact test (at -20 °C) Bend Test Burst Test	As per approved drawing IS:7285 : 2004 <u>As per IS;7285 : 2004</u> IS: 7285 : 2004          IS: 7285 : 2004 IS: 7285 : 2004 IS: 7285 : 2004	Every Cylinder   One random cylinder will be selected from Heat treatment Batch conforming the mechanical properties like tensile test, impact test, bend test etc, in presence of inspecting officer.   One Cylinder from prototype batch.	P	W	R	
6	Ultrasonic testing	Crack detection   Wall Thickness	As per IS:7285 -2004   As per approved	Every Cylinder	P	W	R	

		measurement	drg. IS:7285- 2004					
7	Neck cutting & Threading	Neck Length  Machined neck step diameter Neck thread configuration. Visual inspection thread finish.	As per approved drawing. As per approved drawing.  As per approved drawing.  Free from crack blow hole excess metal at inside neck, thread damage, flat threads etc.	Audit Check by Q.A staff. Audit Check by Q.A staff Every Cylinder. Every Cylinder.	P	W	R	
8	Water Capacity checking & Hydrostatic Strength testing.	Measurement of water capacity. Total expansion and permanent expansion at test pressure. Holding Time = 30 Sec min.	Tolerance on water capacity + 5 % IS-7285 : 2004  Permanent expansion shall not exceed 10% of total expansion. IS: 7285 : 2004	Every Cylinder.  Audit Check by Q.A staff	P	W	R	
9	Air Leakage Test	Access leakage from cylinder body, neck and bottom side at working pressure. Holding Time= 60 Sec.	Free from Leakage. IS: 7285 : 2004	Every Cylinder.  Audit Check by Q.A staff	P	W	R	

		<b>QUALITY CONTROL TABLE HIGH PRESSURE GAS CYLINDER , CASCADE FRAME &amp; FITTINGS</b>						
<b>S.N O.</b>	<b>OPEARTION / PARAMETER</b>	<b>CHARATERIST ICS/ PARAMETERS</b>	<b>ACCEPTANCE CRITERIA &amp; CERTIFICATION</b>	<b>INSPECTION FREQUENCY</b>	<b>VEND OR</b>	<b>TP IA</b>	<b>C A</b>	<b>REM ARKS</b>
1 0	Bursting Test	The value of hoop stress shall be not less than 0.95 of the minimum specified tensile strength of the cylinder material.	IS-7285- 2004	One Cylinder of the first batch .	P	W	R	
1 1	Steam Cleaning & Air Drying	Examination of Oil residue, Moisture Etc.	Free from Oil residue, Moisture etc when Cylinder is exposed to steam jet at steam temp. 160-180 <sup>0</sup> C for period minimum 5-6 minutes.	Audit Check by Q.A staff	P	R	R	
1 2	Internal shot blasting	Scale free surface	Inner surface should be free from scales, metallic particles etc	Audit Check by Q.A staff	P	R	R	
1 3	External shot blasting	Scale free surface	Cylinder should be free from scales & Other surface imperfection	Audit Check by Q.A staff	P	R	R	
1 4	Fixed data Stamping	Stamp Data	As per IS:7285 : 2004	Audit Check by Q.A staff	P	R	R	
			Verification of data					

1 5	Variable Data stamping	Stamp Data	As per Drawing & Test Result	Every Cylinder check by Q.A staff	P	R	R	
1 6	Vacuum cleaning	Any scales, dustetc inside cylinder	Free from scales, dust etc from inside cylinder.	Every Cylinder check by Q.A staff	P	R	R	
1 7	Weighing	Tare weight/ Calibration	As per approved Drawing	Every Cylinder check by Q.A staff	P	W	R	
1 8	Painting (Primer & Finish painting)	Paint coating thickness	As per process sheet	Audit Check by Q.A staff	P	W	R	
1 9	Marking		IS: 7285 : 2004	Each Cylinder	P	R	R	
2 0	Color Identification		IS: 7285 : 2004	Each Cylinder	P	R	R	
2 1	Cascade Frame Fabricatio n Painting Cascade Frame Complete	Visual (Welding etc) Dimension al Physical Test Chemical Test	Approved Drawing/ Manufactures Standard. Owner's Specification Approved Drawing	10 0%	P	R	R	
2 2	Polyurethane/ Epoxy paint	Chemical Properties	Approved Make / Owner's Specification		P	W	R	
2 3	SS Tubes	Physical test Chemical Test Visual (Welding etc) Dimension al Fitment & Alignment	Approved Drawing, Manufacture Test Certificate for bought out items.	As per tender / Owner's Instruction	P	R	R	

		<b>QUALITY CONTROL TABLE HIGH PRESSURE GAS CYLINDER , CASCADE FRAME &amp; FITTINGS</b>						
<b>S.N O.</b>	<b>OPEARTION / PARAMETER</b>	<b>CHARATERIST ICS/ PARAMETERS</b>	<b>ACCEPTANCE CRITERIA &amp; CERTIFICATION</b>	<b>INSPECTION FREQUENCY</b>	<b>VEND OR</b>	<b>TP IA</b>	<b>C A</b>	<b>REM ARKS</b>
2 4	Fittings	Visual Dimen sional Pressur e Test Fitment & Alignment	Approved Drawing/ Manufactures Standard.	As per tender / Owner's Instruction	P	R	R	
2 5	Valves 2 Way	Visual Dimen sional Fitment & Alignment	Approved Drawing, Manufacture Test Certificate for bought out items.	As per tender / Owner's Instruction	P	R	R	
2 6	CNG Cascade Assembly	Visual (Welding etc) Dimensiona l Fitment & Alignment	Approved Drawing/ Manufacture Std.	Owner's specification/ Instruction	P	W	R	
2 7	Cu Tubes for venting of Burst Disc separator	Visual (Welding etc) Dimension al Pressure Test Leakage	Approved Drawing/ Manufacture Std.	Owner's specification/ Instruction	P	W	R	

[illegible]

## Notes

- <sup>1</sup> The Above Testing and acceptance criteria are minimum requirements, however, manufacturer shall ensure that the product shall also comply to the additional requirements as per Particular Technical specifications(PTS) and Data Sheet.
- <sup>2</sup> The supplier shall submit their own detailed QAP prepared on the basis of above / Technical specification for approval of Owner/Owner's representative.
- <sup>3</sup> Supplier shall submit Calibration certificates of all Instruments/Equipment to be used for Inspection and Testing to TPIA with relevant procedures and updated standards for TPIA review/Approval. All reference codes / documents shall be arranged by Vendor for
- <sup>4</sup> Owner / Owner's representative including TPIA will have the right to inspect any activity of manufacturing at any time.
- <sup>5</sup> TPIA along with Owner/Owner representative shall review/approve all the documents related to QAP/Quality manuals/Drawings etc. Submitted by supplier.
- <sup>6</sup> Contractor shall in coordination with Supplier/Sub vendor shall issue detailed Production and Inspection schedule indicating the dates and the locations to facilitate Owner/Owner's representative and TPIA to organize Inspection.
- <sup>7</sup> Special manufacturing procedures have to be specially approved or only previously approved procedures have to be used, in case of conflict between specifications more stringent condition shall be applicable.
- <sup>8</sup> All reference Codes/ Standards, Documents, P.O. Copies shall be arranged by vendor / supplier for reference of TPIA/GGPL at the time of Inspection
- <sup>9</sup> Certification requirement shall comply with European standard EN 10204 - 3.2 (latest edition).

# **SECTION – III: TECHNICAL SPECIFICATION FOR CNG CAR DISPENSER**

## **SECTION: A - GENERAL SPECIFICATION**

### **1.0 SCOPE OF SUPPLY & SERVICES**

**1.1** Supply of double arm type having flow capacity of  $\leq 15$  kg/min for a single arm under discharge to atmospheric condition. Each Car Dispenser shall have following as a minimum:-

1.1.1 Two CNG flexible electrically conductive twin (fill & vent) hose, with both hoses fitted with NGV-I for filling of vehicles. However, both the hoses shall be suitable to be attached with NZS-5425 nozzles. Vendor shall include the supply of 3-way valve with each hose for filling & venting of gas. Vendor shall also include supply of Breakaway Coupling, suitable for NGV Industry, in the hose. Hose shall be 3/8" ID 5000 psig, at least 3m long. Vendor shall demonstrate the function of breakaway coupling during performance test. The dispensers shall be designed in such a way that free movement of hoses is possible, by spring loaded high mast. Supply of NZS 5425 nozzles is excluded from bidders' scope.

- Two numbers of Coriolis true mass flow metering system.
- Three rows of liquid crystal backlit display for night viewing showing total sale in Rupees (00000.00), quantity of gas sold in kg (00000.00), unit price of CNG in Rs/kg (000.00) for each hose on either side of the dispenser (total two sets of three rows for each Dispenser, one display for each side). The whole dispenser electronic unit shall have IP - 65 protection and display cabinet shall have IP 54 protection.
- Non-resettable and non-volatile totalizer up to 999999.99 for total CNG sold in Kg with an independent battery backup. For further details refer Section B: Instrumentation & Control specification.
- One number of three banks electronic software and controller including hardware for individual filling arm.
- Two numbers of holster/ cradle for fill nozzles along with weather caps for the protection of nozzles. Holster/ cradle shall be suitable for both NZS and NGV nozzles. Holster/cradle shall be provided for NGV nozzle and shall be compatible to be attached with NZS-5425 nozzles. Supply of NZS 5425 is excluded from bidder's scope.
- Two number of Hi-mast or equivalent arrangement with flexible hose arrangement so that the hose doesn't touch the ground.
- Emergency stop switch is required on both side of the dispenser. However, the filling on both sides should stop in emergency condition, when any one of the

emergency switch is pressed. During activation of emergency switch, the power supply to the dispenser should be available.

- Two nos. of liquid filled 4" dia. (0-400 Kg/cm<sup>2</sup>g) pressure gauges showing the vehicle filling pressure for each filling arm.
- Two Nos. bubble tight manual shut-off valve for fill hose.
- Vendor has to supply the dispensers with solenoid operated valve or actuated Ball Valve with NAMUR Intrinsically Safe Solenoid Valve made of ANSI 316 SS, for ON-OFF control of flow, on the gas inlet with 1/2" tube OD end connection. Valves shall be provided for each bank per hose separately. Valve make shall be approved by GGPL and during detail engineering. GGPL has an option to choose the type of valve for supply of Dispensers. Vendor to ensure the system design in such a way that any gas if passes, should be recorded by dispenser and there should not be any possibility of unmetered gas supply through dispenser in case of malfunctioning of solenoid valves.
- The gas tubing inside the dispensers shall be seamless SS 316 fully annealed (Bright Annealed) conforming to ASTM A 269 with maximum hardness of RB 80 or less and suitable for bending and flaring. The tubes shall be fully annealed (bright annealed), 1/2" OD with a 1/2" SS 2-way Ball valve at inlet and 1/2" OD end connection suitable for connecting with 1/2" OD SS Tube. Any open ends on fittings and vents shall be provided with caps/ dust plugs.
- Coalescent and particulate Stainless Steel filter of Grade 6 or better to be provided at inlet of each bank supply line with manual drain valve to ensure that the oil carryover in the CNG being filled to vehicle  
  
is < 1 ppm and particulate size is < 0.01 Micron. Filter housing for said filter must be capable for collection of oil for a drain interval of 24 hrs with oil carryover < 1 ppm. Filter elements made of paper shall not be accepted. Vendor to provide appropriately plugged drain valve outside the dispenser housing with suitable arrangement to collect the drained oil. Filter size shall be in accordance with max flow through the dispenser.
- The CNG dispenser specification should meet the IS 15403:2000 (E) natural gas quality designation for use as a compressed fuel for vehicles.
- Vendor shall ensure that the system design in such a way that in both options any gas if passes, should be recorded by mass flow meter and there should not be any possibility of unmetered gas supply through dispenser in case of malfunctioning of solenoid or actuated Ball valves. Any unmetered gas passing shall be recorded in the dispenser is retrievable as and when required.

- Any other item required for safe and accurate operation of Dispenser.
- Any spare(s) required during commissioning shall be in the scope of vendor.
- Supply of application program, ladder logic, list of error codes with description for programming the dispenser parameter.
- If dedicated programming unit is required for programming/ parameter change. The same shall be submitted in “CD” along with supply of dispenser also hard copy of the same also be submitted.
- Vendor shall make a provision to change the price of CNG through the keypad inside the dispenser unit that shall be covered with security lock. It shall also be possible to change the price from remote station (from SCADA/ from any part of the city). RS 485 port shall also be provided for price change. In case standard RS485 port is not available in the dispenser, then RS232C to RS485 convertor with all relevant hardware and software to be provided by vendor.
- RS 485 serial port shall be provided for down loading the CNG sale data with the help of Purchaser's Personal Computer for each shift (8 hours interval). In case standard RS485 port is not available in the dispenser, then RS232C to RS485 converter with all relevant hardware and software to be provided by vendor. Suitable software shall be provided to obtain the same for each shift (8 hours interval). This port shall be made available outside the explosion proof electronic housing for Purchaser's use.
- Vendor shall provide a common processor and open communication protocol/ RS 485 port for RTU to transfer all the dispenser data to central SCADA system. In case standard RS485 port is not available in the dispenser, then RS232C to RS485 converter with all relevant hardware and software to be provided by vendor.
- Vendor must note that non-standard/ propriety type communication protocol in dispenser for communication with RTU is not acceptable. Protocol must be standard as specified above or any standard protocol with compatible convertor shall be made available and must be compatible to any make of RTU. RTU will have Serial communication port RS 485 protocol to interface with dispenser. Vendor is responsible to provide the communication port compatibility with RTU. Vendor is required to carry the communication port functional test and display all the values in Lap top or in applicable device during dispenser inspection (FAT) at vendor premises. Also functional test shall be carried out by vendor after installation and looping is junction box at site. Vendor shall also share the dispenser protocol details with GGPL
- Vendor must furnish/ share the details of implemented MODBUS protocol like function codes for read and write, slave ID, list of signals to be transferred, CRC implementation, register addressing methods / mapping etc with M/s GGPL and

provide their assistance during interfacing with RTU to automation vendor.

Vendor must submit the following documents within 2 weeks of placement of LOI/ PO for review and approval of GGPL:

- a) Detailed project schedule giving all activities such as Design and review, Major bought out items (such as Mass flow meter, electronics, Valves, Hoses etc.), Sub-assemblies, Stage inspection, Final Assembly, Final factory testing of dispensers, Final inspection, dispatch etc.
- b) Process and instruments diagram (P&ID) of gas flow giving Bill of Material. The Bill of Material shall clearly indicate all items, quantity of all items installed per dispenser, make and part number etc.
- c) Certification from Weights and Measures department, PESO Department or other statutory authorities of the country of origin for offered model dispenser for specified flow and accuracy.

## 2.0 DESIGN & ENGINEERING FOR DISPENSER

- Design & engineering
- Manufacturing & Assembling
- Procurement from Sub-vendors.
- Inspection & Testing at Works.
- Documentation and obtaining statutory approvals from the country of origin.
- Submit/ apply for obtaining type approval for the offered dispensers from Petroleum & Explosive Safety Organisation, Govt. of India as per the provisions of Gas Cylinder Rules, 2016.

### **3.0 EXPERIENCE RECORD SCHEDULE FOR DISPENSERS**

[illegible]

[illegible]

#### **4.0 DESIGN BASIS FOR DISPENSER**

- Area Classification

For details refer Electrical Specification at section-C attached with this Specification.

- Codes and Standards

Following Codes and Standards are referenced to and made part of this Material Requisition.

NFPA52	Standards for CNG Vehicular Fuel Systems
NGV 4.1/AG.A 2-92	Requirements for CNG Dispensing Equipment for Vehicles
NGV 4.2/AG.A 1-93	Requirements for Hoses for NGVs and Fuel Dispensers.
ANSI/NGV1	Compressed Natural Gas Fueling Connection Devices Standard for fueling nozzles and receptacles.
NGV 4/AG.A	Requirements for Breakaway Devices for CNG Vehicle Fuel Dispensers and Fueling Hoses
AG.A 2-90	Compressed Natural Gas Fueling Appliances.
AG 901	Code of practice for NGV refueling stations.
IS 5572	Classification of hazardous areas (other than mines) for electrical installations.
IS 5571	Guide for selection of electrical equipment for hazardous area.
OISD 113	Classification of areas for electrical installations at hydrocarbon processing and handling facilities.
OISD 179	Safety requirements of compression, storage, handling and refueling of CNG for use in Automotive sector.
OIML TC8/SC7	Recommendation with regards to CNG dispensers, December 2000.
	The Standards of Weights and Measures Act 1976.
	The Standards of Weights and Measures (Enforcement) Act, 1985.
	The Consumer Protection Act, 1986.
	The Standards of Weights and Measures (General), Amendment Rules, 2005 – Part X (Compressed Gaseous Fuel (CNG) Measuring Systems for Vehicles

Any other Codes & Standards mentioned elsewhere in this Specification/MR. or which are required to be complied with as per the prevailing Government of India regulations shall also be followed.

## **5.0 PRECEDENCE**

In case of any conflict between Job Specification & other documents, the following order of precedence shall apply:

Data sheets.

Particular technical Specifications (PTS)

Indian Standards/Codes as applicable, International Standards/Codes as applicable.

## **6.0 CNG SPECIFICATION TO BE HANDLED BY DISPENSERS:**

Apart from Gas composition, the proposed specification of the CNG is as follows:

Gas Temperature : -10°C

to +70°C Oil

Content : 10 PPM

Particulate matter : Less than 5 microns

Odorant :  $\leq 10$  mg/sm<sup>3</sup> (Ethyl Mercaptane).

The CNG specification should meet the IS 15403:2000 (E) natural gas quality designation for use as a compressed fuel for vehicles.

## **7.0 SAFETY**

- 7.0.1 All Electrical devices shall meet the requirement for the area classification specified elsewhere in tender document.
- 7.0.2 Tubing & other devices shall be so arranged that there is proper access for operation & maintenance.

## **8.0 TECHNICAL SPECIFICATIONS FOR CAR DISPENSER**

- 8.0 The specifications described herewith are intended to give vendor the technical & operating conditions the Dispenser must fulfil. These are to be referred along with relevant description including in earlier sections. Vendor may indicate in his bid, the additional features, which his dispenser has in terms of better design, enhance reliability etc., however such feature may be accepted subject to GGPL's review and approval.
- 8.1 The specifications of FLOW METER are described under Instrumentation & Control Specification Section-B attached with this Specification.
- 8.2 The Car dispensers shall be designed to handle flow rate of  $\leq 15$  kg/min under discharge to atmospheric condition. The dispensers shall be suitable for a turn down of not less than 50:1 on flow.
- 8.3 Dispensers shall be based on three banks sequential filling. The sequential panel shall be within the cabinet of the dispenser itself and not as a separate unit. Sequencing should be on flow rate and pressure.
- 8.4 The normal operating pressure of CNG at dispenser inlet shall be 250Kg/cm<sup>2</sup>(g). However, supply from dispenser to the Car shall get positively cut off at outlet

pressure of 200 Kg/ cm<sup>2</sup> (g) to ensure the safety of the vehicle.

- 8.5 Once the particular-cycle of filling has been completely stopped (on achieving the maximum fill pressure and/or minimum flow rate) then next filling can be started only after initialization.
- 8.6 The normal operating temperature of wetted parts of dispenser shall be (-) 10 °C to 55°C.
- 8.7 The Dispenser shall automatically and immediately shut-off CNG supply to fill hose individually (with error codes for diagnose) in case of:

Power failure or excursion beyond  
permissible limit. Loss of display

Power failure of mass meter (Provided with Single Error code for Power failure in Mass meter). Failure for metering (Provided with single error code if Mass meter becomes faulty & will not work) Flow beyond high and low limits

Failure of totalizer

Overfill by quantity and/or  
pressure Failure of pressure  
sensing transmitter

Malfunctioning / Passing of  
electro valve

Repeated operation of reset or start/ stop switch as per  
GGPL customization. Removal of any electrical wire  
connected to controller.

Program step is in hold due to any error.

- 8.8 Fill Hose & Fill Nozzle

- 8.8.1 Two CNG flexible electrically conductive twin (fill & vent) hose shall be included for supply of Dispensers meeting the requirement of NFPA-52 and NGV 4.2. (As per specification & make provided in point no.3.1.1)

Both fill hose shall be fitted with NGV-I for filling of vehicles. The nozzle shall meet the requirements of NGV-1 Type-2, Class B nozzle (As per specification & make provided in point no. 3.1.1). Vendor shall include the supply of 3-way valve with each hose for Filling & venting of gas. Vendor shall also include supply of Breakaway Coupling, suitable for NGV Industry, in the hose (As per specification & make provided in point no. 3.1.1). Hose shall be 3/8" ID 5000 psig, at least 3m long. Vendor shall demonstrate the function of breakaway coupling during performance test.

Designing of the dispensers would take into account severity of service. The dispensers shall be designed in such a way as to operate in cyclic (start, fill, stop, start.) round the

clock basis with about 1 minute (typical) interval between stop and start modes. The dispenser also to work satisfactorily when the time between stop and start is indefinitely high, e.g. during lull time or when the dispenser is commissioned after it was decommissioned for prolonged period or in storage after initial commissioning. For this purpose if any specific storage facility is required, the same to be indicated by the bidder.

## **9.0 DATA SHEETS**

Vendor shall fill up data the as per enclosed Data Sheet, attached with this job specification and submit along with bid.

### **10.0 CLIMATIC CONDITIONS**

Height above Mean sea level	: 25m
Max. site temp.	: 450C
Minimum site temp.	: 140C
Max. RH	: 90% in the month of July.
Min. RH	: 28% in the month of January.

### **11.0 UTILITY SPECIFICATION**

- Electric Power Supply

Single phase, AC, 230 Volts  $\pm$  10%, 50Hz  $\pm$  3% will be provided by GGPL. Surge protector is to be provided by the vendor at the 230 VAC inlet. All instrument (such as mass meter, solenoid, pressure transmitter/ switch etc.) power supply shall be of 24V DC only. Suitable voltage conditioning unit shall be in the scope of vendor wherever required.

Note: Vendor to confirm that supplied dispensers are suitable with the above power supply. Vendor to include suitable voltage conditioning unit in their scope, if required.

For further details refer Electrical Specification, Section-C, attached with this job specification.

### **12.0 INSPECTION AND TESTING**

- The following activities shall be covered under inspection at vendor's works:
- Review of Q.A. documents.
- Review of calibration certificates for flow meter, dispenser, pressure transmitters, pressure gauges and all instruments.
- Review of all statutory certificates including W &M, type approval from PESO, Govt. of India.
- Review of area classification compatibility of all items including bought out items.
- Review of Mill Test reports.
- Review of NDT reports.

- Review of bought out sub-assemblies/major components, test/inspection certificates.
- Dimensional checks as per approved drawings and data sheets.
- Safety shutdown of dispensers.
- Immediate cut off of dispensers due to abnormalities.
- Functional Test
- All the dispensers shall be tested to demonstrate the functioning of all the components and controls.
- Performance Acceptance Test at Site
- All the dispensers shall be performance tested for flow capacity, measuring accuracy and dispenser functioning with CNG/Nitrogen. CNG/Nitrogen shall be arranged by vendor.
- During the shop test of dispenser, in case the dispenser flow capacity from inlet of dispenser to the outlet of filling nozzle is found below the specified capacity the dispenser shall stand rejected.
- During the shop testing if the dispenser batch accuracy is found beyond  $\pm 1.5\%$  dispenser shall stand rejected.

### **13.0 PERFORMANCE GUARANTEE**

- The vendor shall guarantee the satisfactory performance of dispensing unit as per the operating parameters indicated in data sheets. The dispensers shall be performance tested after installation at GGPL site. Vendor shall carry out tests as required by Govt. Statutory Agencies.
- Guaranteed Performance for the Dispensers shall be as follows:

Flow Rate ( $\leq 15$  kg/min for Car

Dispenser) Batch Accuracy of  $\pm 1.5\%$ .

Note:

- 1 All the dispensing units shall be tested by Vendor for their function & performance in presence of GGPL authorised representative.
- 2 Any part or component, which is not functioning to the satisfaction of GGPL, shall be repaired or replaced by the vendor without cost & time implication to purchaser and performance test shall be carried out all over again.
- 3 Vendor to execute performance test of all the dispensing unit after commissioning for accuracy and repeatability and safety parameters.
- 4 Vendor to make all arrangements for carrying out performance test viz. Std. Mass Flow Meter, Laptop etc. Vendor shall also carry out tests as required by Govt. statutory agencies.

### **14.0 VENDOR DATA REQUIREMENT**

Vendor data requirement shall be as per attached specification Annexure-2.

## **SECTION: B:**

### **INSTRUMENTATION & CONTROL SPECIFICATION**

#### **1.0 SCOPE**

The purpose of this specification is to define the minimum general requirements and philosophy of instrumentation & control for the dispenser package of GGPL.

This specification cover the design, engineering, procurement, supply and testing, calibration & commissioning of instrumentation and control system with all accessories and materials and any special test requirements required for completing the job in all respects.

Coriolis mass flow meter, electronics and other accessories shall be provided as required for the Dispenser arms.

Vendor's scope of instrumentation and control for the dispenser package shall include the following as:

- a) Basic instrumentation and control indicated in this document.
- b) All local and field-mounted instruments in dispenser panel.
- c) All additional instruments and control system necessary for safe and efficient operation of the dispensers which are not listed specifically in this document but which are required as per vendor's experience/recommendations.
- d) Impulse & pneumatic piping/tubing including all miniature valves, fittings and mounting to install all sub vendor supplied instruments.
- e) All other erection material necessary for mounting of instruments in vendor's scope as per GGPL installation standard.
- f) Shop testing of all instruments and control system under vendor supply.
- g) Calibration, loop checking, pre commissioning and commissioning of the complete system.
- h) All weather proof and explosion proof double compression type cable glands for all instruments, junction boxes, dispenser panel etc.
- i) All pressure relief valves.

In case of further clarifications, bidder shall obtain clarification/confirmation from GGPL before proceeding.

All instruments must be procured from GGPL recommend vendor list. However for those instrument/equipment, which are not covered in the list, the sub vendors shall be approved by GGPL.

#### **2.0 DESIGN PHILOSOPHY**

- 2.1 All Electrical and electronic instruments shall be installed in accordance with NFPA 70, IEC for Gas Group IIA, IIB & Temperature Class T3 and shall have approval of a recognized certifying authority.

- 2.2 Mass flow meter shall be CORIOLIS type and shall conform to AGA 11 standard.
- 2.3 Each and every mass flow meter 'zeroing' shall be done before delivery from vendor's works.
- 2.4 Mass flow meter design considerations, piping, meter, zero verification and proving facility shall be as per AGA 11 standard.
- 2.5 Control valve, actuator and solenoid valves shall be of conventional type design, no integral design is acceptable.
- 2.6 Control valve body and trim materials selection shall be done by the bidder to ensure that there is no erosion, cavitation and flashing. Trim & seat shall be fully stellated.
- 3.0 **SPECIAL INSTRUCTION TO VENDOR**
- 3.1 Supply of Car dispenser with two arm of flow rate  $\leq 15$  kg/min under differential pressure of 200 kg/cm<sup>2</sup> g.
- 3.2 Each dispenser arm shall have Coriolis type mass flow meter with Display mounted on the flow meter with necessary sensor, electronic and special cable recommended by vendor. Performance record and Weight and Measure (W&M) certification of the meter to be submitted for acceptance.
- 3.3 Three rows liquid crystal backlit displays for night viewing showing total sale in Rupees of (00000.00), quantity of gas sold in Kg.(00000.000), unit price of CNG in Rs/Kg (000.00) for each hose of the dispenser (total two sets and three rows for each dispenser).
- 3.4 Vendor shall make a provision to change the price of CNG through the keypad inside the dispenser unit that shall be covered with security lock. RS 485 port shall also be provided for price change. In case standard RS485 port is not available in the dispenser, then RS232C to RS485 convertor with all relevant hardware and software to be provided by vendor.
- 3.5 Non-resettable and non-volatile totalizer upto 999999.99 (8 digits and a decimal) for total CNG sold in Kgs. Since the dispensers are used for custody transfer purpose, the totalizer must not reset/change/jump in any eventuality not even in the case of electronic failure/power supply failure or excursion beyond permissible limit. If there is any abnormality in power circuit during filling, the running batch value should be added in totalizer. Dispenser electronics shall be common for both totalizers.
- 3.6 Totalizer figure would be displayed only when it is recalled through a remote keypad or some device integral to dispenser. The totalizer value would cover up to the last transaction details at the time of recall. These remote key pad device should not be used for any programming of the dispenser and are distinct from those, if used for programming the dispenser while operating these keys in no way shall hinder the operations, functioning, veracity of display, storage of parameters and values. These remote keys can be used even when the filling is on without affecting up-counting/real time data.
- 3.7 Dispenser shall be capable of communicating with outside system using the open system architecture/protocol (OPC)/RS 485. Bidder must handover the details of communication port of dispenser and signals to be transferred to GGPL. It should be possible to transfer the data through twisted pair wires, transaction data as also flow meter data (both process and diagnostic) RTU.

- 3.8** One number of three bank electronic software and controller including hardware. Vendor shall include solenoid operated valve made of ANSI 316 SS for dispensing of gas. Vendor to ensure the system design in such a way that in both options any gas if passes, should be recorded by dispenser and there should not be any possibility of unmetered gas supply through dispenser in case of malfunctioning of valves. The valve assembly shall be fatigue free and tight shut off characteristics at least for 8000 operation hours.
- 3.9** Two number of liquid filled 4" dia. (0-400 kg/cm<sup>2</sup>g) pressure gauge showing the vehicle filling pressure. Pressure gauge shall be provided with shatterproof glass. Vendor to provide a bypass isolation valve with associated tubing to facilitate routine servicing/calibration of Pressure gauge without shut down of the dispenser.
- 3.10** Temperature compensator to limit fill pressure to an adjustable value (with normal value 200 Kg/cm<sup>2</sup>g) equivalent at 15 degree C. A temperature compensation facility button shall be provided to enable or disable the temperature compensator.
- 3.11** To limit fill pressure to 200 Kg/ cm<sup>2</sup> g, Vendor to provide the following options per hose / arm of the dispenser:
- a) One number of pressure limiter (electronics transducer) (with adjustable value up to 250 Kg/cm<sup>2</sup> g) and one number of mechanical pressure regulator and one number pressure relief valve as final safety to avoid overfilling. Pressure regulator shall be designed such that there shall not be any flow restriction to the maximum flow of dispenser. Otherwise, minimum flow through the regulator shall be 15 Kg/min at 5 kg/cm<sup>2</sup>g differential pressure.
- 3.12** Back-up Power supply for displays so that display remains at least for 5 minutes after power failure. Vendor shall provide battery backup of 72 hours to the RAM of dispenser controller.
- 3.13** Hardware required with the dispenser for Weights and Measures (W&M) certification.
- 3.14** All parameter setting shall be password protected. Facility of change of password also to be provided to enhance the security of password.
- 3.15** Car Dispensers shall be designed for handling flow rate of more than or equal to 15 kg/min. flow capacity with turn down of not less than 50:1.
- 3.16** The batch accuracy of dispensed gas shall be within  $\pm 1.5\%$  or better.
- 3.17** Bidder shall indicate overall flow coefficient Cv of dispenser from inlet to the dispenser upto outlet of nozzle including mass flow sensor, interconnecting tubing, valves, hose, fill valve etc.
- 3.18** Normal operating inlet pressure of dispenser shall be 220-250 Kg/cm<sup>2</sup>g. The dispenser supply to the vehicle shall be positively cut off at outlet pressure of 200 Kg/cm<sup>2</sup>g.
- 3.19** Normal operating temperature of wetted parts of dispenser shall be -10 to 55 deg C.
- 3.20** Vendor shall confirm that any momentarily flow of gas shall be registered in dispenser totalizer. Vendor shall envisage a temper proof design. Dispenser shall generate error signal in case of passing valve with date and time and display on the dispenser LCD.
- 3.21** After power on, the controller delay time to start filling be such that the mass meter and pressure transmitter are initialized properly to avoid any un-metered gas.

- 3.22** Complete control loop would be so fast that if the filling is terminated at any point of filling, the flow would stop immediately.
- 3.23** Reset switch assembly should be suitable for failure free operation and the same shall be supported with proper PTR for CNG duty.
- 3.24** Controller shall be in reset state for the SOV open signal to be generated. Any departure to this shall stop the dispenser. Dispenser controller shall monitor the status of flow, monitor the status of flow meter / transmitter and in case of any abnormality from set condition the dispenser shall shut down.
- 3.25** In case the power supply is beyond acceptable limit the dispenser shall not start at all. The controller shall provide an operational alarm with pre-stated error code and it shall be displayed on LCD display.
- 3.26** Flow meter signal shall be considered as the highest level of interrupt. It shall not be possible to fill any vehicle cylinders by repeated operations of reset switches. Reset time delay is required with adjustable time.
- 3.27** A Provision shall be available in dispenser unit, which shall be suitable for programmable/changeable filling pressure from 180kg/cm<sup>2</sup>g to 220kg/cm<sup>2</sup>g in vehicle. Original filling shall be same as defined elsewhere in data sheet.
- 3.28** Emergency stop switch is required on both side of the dispenser. However, the filling on both sides should stop in emergency condition, when any one of the emergency switch is pressed. However during activation of emergency switch, the power supply to the dispenser should be available.
- 3.29** Overfill Protection
- Overfill protection shall be through electronically programmed hose to terminate the fill after 200 Kg/cm<sup>2</sup>g. Vendor shall include one number pressure transducer and one number pressure regulator per hose. Pressure relief valve shall be provided to avoid overfilling. Relief valve set pressure shall be at 250kg/cm<sup>2</sup>g with resetting at 245kg/cm<sup>2</sup>g. Relief valve setting to be adjustable from 225kg/cm<sup>2</sup>g to 260kg/cm<sup>2</sup>g with resetting at 220 to 255 kg/cm<sup>2</sup>g respectively. Calibration certificate shall be provided.

**3.30** **Electronics**

- 3.30.1 Electronics shall be microprocessor based. The processor shall be the latest available in the field and shall be capable of processing the data faster. All the electronic cards shall be located in flameproof boxes inside the dispenser cabinet. No parts of electronics shall be filled with epoxy resin etc. The controller electronics should have immune to EMI interference and vendor to provide relevant certification in this regard.
- 3.30.2 The dispenser electronics should have self-diagnostic features and should generate error code accordingly. Vendor should define such error codes in trouble shooting guide and procedure of their rectification. Error code related to operational parameters should also be displayed and defined in trouble shooting guide. Password protection should be provided for entry of critical data through key pad.
- 3.30.3 The change in setting shall be done either through lap top computer or through hand held configurator through the port provided for this purpose with security lock.
- 3.30.4 Vendor shall provide suitable electronics for processing both arms dispenser data. Totalizer display and display for both arms in the dispenser shall be shown separately

**3.31** **Tubing & Fittings**

Materials used for the tubing shall be SS 316 fully annealed (Bright annealed) seamless conforming to ASTM A269 with maximum hardness of RB80 or less and suitable for bending and flaring. Open ends on fittings and vents shall be provided with caps/dust plugs.

**3.32 Certification:**

Equipment/instrument/systems shall be certified for use by statutory authorities for their use in area of their application.

For all intrinsically safe/flame proof equipment/instruments/systems, certification by any approving authority like BASEEFA, FM, UL, PTB, LCIE, Petroleum & Explosive safety organization (PESO), India is mandatory.

The supplier should specify the hazardous area in accordance with the IS 5572 / Australian Re-fueling Standard AG901 / NZS5425. All electrical equipment cabling and earthing should be appropriate for the zone in which it is fitted, and all cables passing from the hazardous to safe area should be equipped with appropriate barriers where necessary.

All Instruments should 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 5780 / IEC 6007”. All dispensers mounted transmitters & temperature element should be intrinsic safe “exia” as per IEC 79-11. Solenoid Valves, Switches and related junction boxes should be flame proof “Exd” as per IEC 79-1.

Other special equipments / instruments, where intrinsic safety is not feasible or available, should be flame proof as per IEC 79-1. Flying leads from any of the instrumentation items are not acceptable. The Electronics of the dispenser shall not be open and shall be provided within a suitable enclosure. A complete dossier of all electrical equipment will be provided, showing area classification and certification of equipment.

**3.33** The mass flow meter design having transmitter with local integral display, the mass flow meter signal through the transmitter shall be wired to the mother board used in the dispenser and there shall not be any difference in reading between this integral display unit and non-resettable display in the electronic control unit or,

**3.34** Dispenser manufacturer is required to submit approval of weight & measure department, Gov of India. For the dispenser unit or for the mass flow meter installed in the dispenser unit. In future, if any non-conformity or objection is raised by W&M department or if any penalty action is taken against GGPL, vendor shall be fully liable, indemnify GGPL against any liquidity and shall bear all the cost implication, if any.

**3.35** One no. of non-resettable and non-volatile totalizers per hose of the dispenser i.e. one integral local digital totalizer with display along with mass flow meter transmitter and the second totalizer of liquid crystal backlit display in kg. (999999.99) on the front panel of the dispenser shall be provided. Besides this, an electro- mechanical type totalizer shall also be provided with 7 digits.

There shall be a non-resettable & non-volatile totalizer per hose of the dispenser with liquid crystal backlit display in kg. (999999.99) on the front panel of dispenser. Besides this, a 7 digit electro-mechanical totalizer shall also be provided.

**3.36** All equipment should be communicated with the common communication protocol.

(MODBUS/PROFIBUS/HART)

**3.37** All the safety norms to be followed by vendor as per GGPL guidelines.

**3.38** All the approvals and certification to be provided by vendor for the hardware, software supply as per GGPL requirements.

**3.39** During installation & commissioning vendor will ensure that routine operation of the equipment will not suffer or vendor will install the equipments as per GGPL guidelines.

**3.40** RFID Systems

The dispenser must be compatible with future RFID system suitable for monitoring and control of vehicle/ vehicle on-board cylinder authentication mechanism. (TBD)

**4.0 REQUIREMENT FOR AUTOMATION SYSTEM IN DISPENSER**

**4.1** It is intended to monitor / control following parameters through automation system:

- a. Mass Totalizer from Dispenser Motherboard.
- b. Mass Flow per Filling.(note that Gas sale data- the reading which is visible to customer and used for billing purpose is mandatory to be transmitted to server whether it is from flow meter or motherboard or from both)
- c. To Read Gas Selling Price from Dispenser.
- d. To download the gas selling price into the dispenser from Server system.
- e. Mass Flow Meter Status.
- f. Tripping Status Dispenser.
- g. Reset Switch Operation Status.
- h. Dispenser Power Supply Status.
- i. Identity of vehicle using RFID (In-built option to be provided).

**4.2** In addition to above bidder shall make provision for monitoring and control of following parameters as well

**A. Shift Reports**

(Shift – A:6:00 to

14:00) (Shift – B:

14:00 to 22:00)

(Shift – C: 22:00 to 06:00)

- a) Showing Date /Start time/ Finish time of every shift
- b) Individual Arm-wise and Dispenser-wise totals.
- c) Total sale for each shift in Kgs and Rs.
- d) Total sale with variable pricing.
- e) Full day report with total Sale for the 24 Hr. period.

**B. Remote Price Change facility to facilitate**

- Station-wise sortable and selectable
- Time-wise selectable
- Area-wise selectable
- Variable price change in a day

C. **Transaction reports**

Remotely the following parameters can be viewed in transaction reports

- Station Name and Dispenser serial number.
- Showing Date /Start time/ End time of every filling.
- Individual Arm-wise and Dispenser-wise totalizer at start of filling and end of filling.
- Transaction number totals for individual Arm-wise, Dispenser-wise and Station-wise to count number of fills in selectable particular duration. (Monthly and daily basis)
- Batch reading of fill.
- Sale for each batch in Kgs and Rs.
- Unit price Data.
- Dispenser power ON/OFF count.
- Pressure during last fill
- Vehicle pressure at start of filling
- Vehicle pressure at end of filling
- Temperature during the last fill

**4.3** End of sale indicator (Code number showing the reason that the last sale stopped. This is useful if a dispenser stops during a fill for no apparent reason).

**4.4** The remote monitoring and automation will consist of reading, transferring and controlling all the data/parameter from the dispensers to RTU and then to any centralized remote server in India as per GGPL requirement.

**4.5** The above list is tentative and final list shall be decided during execution phase.

**5.0 VENDOR DATA REQUIREMENTS**

Vendor data requirement shall be strictly as per Annexure-4 this job specification.

**6.0 INSPECTION AND TESTING**

**6.1** Functional and simulation test for the following shall be carried out at vendor's works and shall be witnessed by GGPL/Third party.

**6.2** Control panels along with all instruments mounted in it.

**6.3** Following tests shall be carried out by bidder at his works or his sub-vendor's works and test certificates shall be furnished :

- a) Calibration/test certificates for all instruments, control valves & safety valves.

- b) Seat leakage test for control valve and safety valve.
- c) Test certificates for safety valve set pressure and reset pressure.
- d) Radiographic test certificates for control valve and safety valve used for ANSI 600 lbs and above rating.
- e) Material test certificates for all line mounted instruments.
- f) Sub-vendors conformity certificates.

## **7.0 LIST OF ATTACHMENTS**

Data sheet for CNG Dispenser for CAR.

Data sheets formats (along with calibration certificate wherever applicable) for Mass flow meter

Control valve

Solenoid valve

Self actuated control valve

Pressure relief valve & Pressure Gauge and transmitter

## **SECTION: C: ELECTRICAL SPECIFICATION**

### **1.0 GENERAL**

- 1.1** This specification defines the requirements of design, engineering, supply and installation, testing and commissioning of electrical facilities for CNG Dispenser Package.
- 1.2** It is not intended to cover all aspects of design but to indicate the basic requirements only. Vendor shall ensure that the design and installation on the skid is carried out as per good engineering practice to meet the requirements of safety, reliability, ease of maintenance and operation, aesthetics and interchange ability of equipment.

### **2.0 CODES AND STANDARDS**

- 2.1** All electrical equipment and complete package shall meet the requirement of relevant Publications and Codes of Practice of Bureau of Indian Standards, statutory regulations and good engineering practices. Complete system must conform to the latest revisions of the following:
- a. Indian Electricity Act and Rules framed there under.
  - b. Fire Insurance Regulations.
  - c. Petroleum Rules and any other regulations laid down by Petroleum & Explosive safety organization.
  - d. Regulations laid down by local statutory authorities and Electrical Inspectorate.
- 2.2** Vendor shall provide all assistance required for obtaining approvals from statutory authorities for materials, plant design/drawings and complete installation.
- 2.3** Where Indian Standards do not exist, the relevant IEC/British/ German (VDE) standards shall apply. Any Other international standard may also be followed provided it is equivalent to or more stringent than the standards specified above.
- 2.4** In case of any discrepancy/conflict between the specified codes and standards, the following order of decreasing precedence shall govern:
- i) Statutory Regulations.
  - ii) Codes and Standards.
- Owner's concurrence shall, however, be sought before taking a decision in the matter.

### **3.0 AREA CLASSIFICATION AND EQUIPMENT SELECTION**

- 3.1** In case of storage, handling or processing of flammable materials within the battery limits of the package, area classification shall be carried out in line with IS: 5572 & Petroleum Rules and OISD-179 guidelines where applicable.
- 3.2** Selection of the type of equipment for use in hazardous areas shall be done in accordance with IS: 5571 and other safety regulations as applicable. The electrical equipment shall meet the requirements of relevant IS, IEC or NEC standards. Increased safety type Ex (e) equipment shall not be permitted for use in Zone-1 areas. For Zone-2 areas, Increased safety type Ex (e) or Non-Sparking Type Ex (n) equipment shall be provided as a minimum, subject to the same being acceptable to statutory authorities.

Ordinary safe area type electrical equipment shall not be used in Zone-2 areas (even though this may be permitted by NEC for Div.2 areas).

- 3.3 Electrical equipment for hazardous areas shall be certified by CMRI and approved by PESO (or equivalent statutory authority of the country of origin) for installation and use in the specified hazardous area. Flameproof equipment of indigenous origin shall be BIS marked. Vendor shall furnish the necessary certificates indicating such approvals.
- 3.4 All the electrical and electronic component shall be in flame/explosion proof housing suitable for area classification: Hazardous area, Class 1, Division 1, Group D as per NEC or Class 1, Zone 1, Group IIA/IIB as per IS/IEC, Temperature Class T3, and completely enclosed in a securely lockable dispenser cabinet. No component of the dispenser shall be installed outside the cabinet.

Certificate from recognized agency to the effect is required to be produced that equipment supplied and/or installed conforms to above area classification.”

#### **4.0 EQUIPMENT SPECIFICATIONS**

- 4.1 Specifications of equipment shall be furnished for review by the owner. All equipment and components shall be new and supplied by approved reputed manufacturers. Equipment requiring specialized maintenance or operation shall be avoided as far as possible and prototype equipment shall not be accepted. All equipment shall be complete with all necessary weather protection including tropicalization to prevent damage due to climate, dust and corrosive vapours.
- 4.2 Vendor shall be responsible for any damage to the equipment during transit. All packages shall be clearly, legibly and durably marked with uniform block letters giving the relevant equipment material details. Each package shall contain a packing list in a waterproof envelope.
- 4.3 All electrical components and equipment shall be sized to suit the maximum load under the most severe operating conditions.
- 4.4 All electrical equipments shall be supplied with double-compression cable glands, made of nickel-plated brass, tested and certified to be used in zone-1, hazardous area.
- 4.5 All electrical components should be suitably weather proof to prevent short circuits, corrosion and should be suitable for installation in Hazardous classification as class I, Division 1, Group D
- 4.6 Although the supply is being arranged through UPS System, but in some remote occasions, the power supply may be from DG sets with poor regulations and thus power supply available from GGPL may contain harmonics, transients and surges etc. The Electronics shall be compatible to the supply system as no transient, surge or harmonics protection is provided by GGPL. Bidder to include suitable surge protection device/ voltage conditioning unit, as required, in their scope for accurate and safe operation of dispenser.
- 4.7 Rated voltage and frequency for the equipment shall be indicated below: Ambient Temp: Max. 48 °C & Min. 1 °C  
System Voltage: 230V + 10% Single Phase AC

System Frequency: 50 Hz + 3%  
System Earthing: Solidly  
Earthed

We have envisaged solid earthing for the system. However, if specific earthing is required for the system – electronics, the same to be highlighted by bidder; otherwise system earthing including making of earth-pits etc. shall be provided by the successful bidder.

**4.8** Name of the manufacturer, type of enclosure protection and certificate no. with name of testing/Certifying agency shall be furnished with bids / for approval.

**4.9** General Requirement

All power supply J.B.'s shall be flame-proof type as per area classification. Fill hoses should be conductive type to mitigate the static charges.

Provision for connecting earth strip at two points inside the dispenser.

Supply cable entry to dispenser shall be suitable for armoured 2.5sq.mm. 4 core.

There should be effective static charges (as generated in hoses) mitigation design. All hoses shall be conductive so that auto earthing of static charges (as generated in system) could be ensured. Vendor shall submit the requisite documents/demonstration against the same at vendors shop.

#### **SECTION D: MECHANICAL SPECIFICATION**

Specifications / make of hose, break away coupling, 3 way valves, SS fittings & nozzles are as follows:

1. Hoses - Parker/Swagelok/Eton
2. Breakaway coupling - OPW ILB1/Weh
3. 3 way valves - Parker/Swagelok
4. NGV nozzles - OPW
5. SS fittings -Parker/ Swagelok/Hamlet/Hy-lok

##### **Hoses:**

Two CNG flexible electrically conductive (fill & vent both should be separate) hose, having following specification:

1. Car long hose breakaway to nozzle:
  - a. Car Dispenser Fill hose (Long)
  - b. Hose ID- 3/8",

- c. OD- 0.77",
  - d. Length- 3000 mm,
  - e. Minimum Bend Radius-4",
  - f. End SIZE 1:- 9/16"-18 UNF SAE6(M)
  - g. End SIZE 2:- 1/4 NPTM , in SS 316
  - h. Nominal Size-3/8",
  - i. Working Pressure: 5000 PSI (345 Bar),
  - j. Minimum Burst Pressure: 20000 PSI (1379 Bar),
  - k. Temperature Range: -40° C to 65° C),
  - l. Electrically conductive polymer core tube, two or more layers of fiber reinforcement, and abrasion- resistant urethane cover. Cover must be pinpricked for use with CNG. High-strength conductive polymer core tube is required to dissipate static electrical build-up. Thick urethane cover for abrasion and wear resistance.
  - m. Spring guards must be provided at both ends for the assembly.
  - n. Hose should conform to NFPA 52 & ANSI/ CSA NGV 4.2-2014 / CSA12.52-2014
2. Car short hose dispenser to break away:
- a. Car Dispenser Fill hose- 1800 mm (Short),
  - b. Hose ID- 3/8",  
OD- 0.77",
  - d. Length- 1800 mm,
  - e. Minimum Bend Radius-4",
  - f. End Size 1- 9/16"-18 UNF SAE 37\* JIC (F) Swivel
  - g. End size 2- 9/16"-18 UNF SAE6(M) (Both Ends),in SS 316
  - h. Nominal Size-3/8",
  - i. Working Pressure :5000 PSI ( 345 Bar )
  - j. Minimum Burst Pressure : 20000 PSI ( 1379 Bar ),
  - k. Temperature Range : -40° C to 65° C,
  - l. Electrically conductive polymer core tube, two or more layers of fiber reinforcement, and abrasion- resistant urethane cover. Cover must be pinpricked for use with CNG. High-strength conductive polymer core tube is required to dissipate static electrical buildup. Thick urethane cover for abrasion and wear resistance.
  - m. Spring guards must be provided at both ends for the assembly.
  - n. Hose should conform to NFPA 52 & ANSI/ CSA NGV 4.2-2014 /CSA .52-2014
3. Vent hose:

- a. Vent hose- 3000mm ,
- b. Hose ID- 1/4",
- c. OD- 0.63",
- d. Length- 3000 mm
- e. Minimum Bend Radius-2",
- f. End SIZE 1:- 9/16"-18 UNF SAE6(M)
- g. End SIZE 2:- 1/4 NPTM , in SS 316
- h. Nominal size - 1/4"
- i. Working Pressure : 5000 PSI ( 345 Bar ),
- j. Minimum Burst Pressure : 20000 PSI ( 1379 Bar ),
- k. Temperature Range : -40° C to 65° C,
- l. Electrically conductive polymer core tube, two or more layers of fiber reinforcement and abrasion- resistant urethane cover. Cover must be pinpricked for use with CNG. High-strength conductive polymer core tube is required to dissipate static electrical buildup. Thick urethane cover for abrasion and wear resistance.
- m. Spring guards must be provided at both ends for the assembly.
- n. Hose should conform to NFPA 52 & ANSI/ CSA NGV 4.2-2014 / CSA52-2014

**Nozzles:**

Both hose shall be fitted with NGV-I nozzle for filling of vehicles. Specification for NGV 1 nozzle is as follows:

<b>Nozzle Type</b>	NGV-1 TYPE 2, CLASS B
<b>Normal working Pressure</b>	PN200 bar
<b>Temperature Range</b>	0°C to +85°C
<b>Max. Length</b>	Max. 115 mm
<b>Cv minimum</b>	1.05
<b>Max. Weight</b>	0.65 kg
<b>Min. Flow Rate:</b>	1500 SCFM @ 3000 psig
<b>Max nozzle body diameter</b>	2 inches
<b>Filling Line Male Thread</b>	UNF 9/16"-18 Female or 1/4" Male NPT

### **3 way valve:**

Vendor shall include the supply of 3-way valve with each hose for filling & venting of gas. Specifications are as follows:

Connection Size : ¼ "NPT Female (All  
three end) Pressure Rating :  
5000 PSI (minimum)

Temperature Rating : 0 to 70 deg. C

Minimum Life : 40000 cycles at site conditions (one on & off is considered as one cycle)

### **Material of construction**

Body : SS 316 as per ASTM A276 or as per ASTM A479 or ASTM A 182

Ball : SS 316 ASTM A479 or Alloy S21800 as per ASTM A276

Stem : SS 316 ASTM A479 or as per

ASTM A276 End connection : SS 316 ASTM  
A479 or ASTM A 276

Seat carrier : SS 316 as per ASTM A276

Seat springs : Alloy X-750 / AMS 5542 / 17-7 PH

Seat : PEEK

O-rings : BUNA-N or BUNA-C or

Fluorocarbon FKM Backup rings/bearings :  
PEEK / PTFE

Orifice Size / Cv : min 4.75 mm / min

0.62 Weight : Max. 326 grams.

### **Design Features**

1. The valve should be of trunnion ball design.
2. Blow out resistant two piece ball/stem.
3. Should have positive handle stoppers.
4. Flow direction indication must be there on handle.
5. Directional indication must be provided for panel mounting.
6. Complete repair kit must be available and comprises of (all internals installed in valve body) following items :

- a. Stem
- b. Stem washer
- c. All sealing rings for stem i.e. stem O-rings, primary backup rings, secondary backup rings etc.
- d. All Seat with carrier
- e. All Seat retainer O-rings, backup rings, guide, springs etc.
- f. Connector end seals
- g. Ball trunnion
- h. Trunnion bearing

**Break away :-**

Vendor shall also include supply of Breakaway Coupling, suitable for NGV Industry. Vendor shall demonstrate the function of breakaway coupling during performance test.

# **DATA SHEETS**

### CNG DISPENSER FOR CAR

SR. NO.	PARAMETER	SPECIFICATION	OFFERED
1.0	Dispenser	Car	
1.1	Make		
1.2	Model		
1.3	Normal Inlet Pressure Kg/cm <sup>2</sup> g	250	
1.4	Maximum Fill Pressure Kg/cm <sup>2</sup> g	200	
1.5	Operating Temperature range of wetted parts	(-) 10 °C to 60°C	
1.6	Flow Rate (kg/min)	≥ 15	
1.7	Nominal flow (kg/min)		
1.8	Minimum flow (kg/min)		
1.9	Overall Cv of dispenser from inlet of dispenser to outlet of fill nozzle		
1.10	Batch accuracy	± 1.5%	
1.11	Electrical Supply	AC 230 Volts ± 10% 50Hz ± 3%	
1.11.1	Tolerable value of voltage range for accurate operation		
1.12	Fill Nozzle		
1.12.1	Type	NGV1 & NZS 5425	
1.12.2	Make	OPW	
1.12.3	Pressure Rating Kg/cm <sup>2</sup> g	250 Kg/cm <sup>2</sup> g	
1.13	Flexible fill & vent hose	Both should separate	
1.13.1	Type		
1.13.2	Make		
1.13.3	Pressure Rating Kg/cm <sup>2</sup> g		
1.14	Sequential filling	Three bank	
1.15	Mass Flow Meter		
1.15.1	No. of metering lines	Two independent	
1.15.2	Metering principle	Coriolis	
1.15.3	Make		
1.15.4	Model		
1.15.5	Mass Flow accuracy for gas meter (inclusive of linearity, hysteresis, repeatability errors)	± 0.5%	
1.15.6	Repeatability	±.0.25%	
1.16	Temperature compensation	Yes	

1.17	Breakaway coupling	Yes	
<p>NOTE: For all Electrical/Instrumentation items vendor shall provide certificates issued by statutory Inspection Authority confirming suitability of Design/Construction for specified Hazardous Area Classification.</p>			

<b><u>MASS FLOW METERS (CORIOLIS TYPE) FOR CAR</u></b>				
<b><u>DISPENSER</u></b>				
Units:	Flow -> CNG		CNG-Kg/Hr Pressure->	Temperature-> °C
Level /Length->mm				
General	1.	Tag No.		
	2.	Line No.		
	3.	Service		
	4.			
Meter	5	Type		
	6	Function		
	7	Conn. Size: Size &Rating,		
		Facing & Finish		
	8	Body Material		
	9	Wetted Parts Material		
	10	Enclosure		
	11	Conduit connection		
	12	Range		
	13	Accuracy		
	14			
	15			
Convertor	16	Load Resistance – ohms.		
	17	Output		
	18	Power Supply		
	19	Area Classification		
	20	Intrinsically safe /Expl. Proof		
	21	Enclosure		
	22	Conduit connection		
	23	Mounting		
	24	Distance from control room		
	25			
	26			
Options	27	Filter/Mesh Wire		
	28	Mounting Brackets		
	29	Interconnecting		
	30	Special cabling		
	31	Cable glands		
	32	Accessories for hot tap		
	33			
	34			
	35			
Service Conditions	36	Fluid & state		
	37	Maximum Flow		

	38	Minimum Flow	
	39	Normal Flow	
	40	Pressure – Open. Max.	
	41	Temp. C – Open. Max.	
	42	Oper. S.G. Mol. Wt	
	43	Max. order Viscosity mpa . s(cp)	
	44	Max. Allowable Pr. Drop	
	45	Model No. Meter convertor	
	46	Specification Remarks	
	47	Specification Remarks	

Notes:

☐ DEVIATION

☐ NO DEVIATION

<b><u>CONTROL VALVES</u></b>					
Units:		Flow -> CNG	CNG-Kg/Hr Pressure->	Temperature-> oC	Level /Length- >mm
General	1	Tag No.			
	2	Inlet Line No.			
	3	Outlet Line No.			
	4	Service			
	5	Line Size    Schedule			
	6	Inlet Line I.D.          Outlet line ID			
Body	7	Type of Body			
	8	Body SizePort Size			
	9	Guiding    No. of Ports			
	10	End Conn: Flgd. Size & Rating			
	11	Facing & Finish			
	12	Body Material			
	13	Bonnet Type			
	14	Packing Material			
	15	Lubricator    Isol. Valve			
	16	Trim form			
	17	Trim Mat. Plug. /Disc/Ball & Seat			
	18	Other wetted parts			
	19	Soft seating Materials			
	20	ANSI Leakage Class			
Actuator.	21	Type			
	22	Close at Open at			
	23	Failure Position			
	24	Handwheel & Location			
Positioner	25	Air Supply Pressure			
	26	Input          Output			
	27	Bypass    Gauges			
Options	28	Solenoid Valve			
	29	I/P convertor			
	30	Filter with Gauge			
	31	Limit Switch			
	32				
	33				
Service Conditions	34	Fluid          State			
	35	Flow Liquid Min: Normal: Max			
	36	Flow vapor Min : Normal :			

		Max	
	37	Flow Water Min Normal Max	
	38	Inlet Pr. Nor. Min.	
	39	P @Flow rat Min :Normal : Max	
	40	Pressure Shut Off	
	41	Temp. Open. Max.	
	42	Open S.G. Mol. Wt.	
	43	Cp/Cv Compress Factor	
	44	Flash% visc. mPas (open)	
	45	Deg. Of Superheat % Solids	
	46	Vapor Pr. Critical Pr.	
	47		
Valve Data	48	CV Min. Cv Max.	
	49	CV Nor. Selected CV	
	50	Predicted Sound Level Db	
	51	Inlet Velocity m/s	
Model Nos.	52	Valve Actuator	
	53	Positioner Solenoid Valve	
	54	IBR Certification	

**SOLENOID**  
**VALVES**

Units:		Flow -> CNG	CNG-Kg/Hr Pressure->	Temperature- > oC	Level /Length- >mm
General	1	Tag No.			
	2	Line No.			
	3	Line Size & Sch.			
	4	Service			
Valve	5	No. of ways			
	6	Size – Body Port			
	7	End Connection			
	8	Material Body			
	9	Material Trim			
	10	Body Rating			
	11	Operating mode NC/NO/Univ.			
	12	Packing			
	13				
	14				
	15	Enclosure			
Electrical	16	Area Classification			
	17	Cable Entry			
	18	Ty. Of Energisation Dropout			
	19	Power Supply			
	20	Power Consumption VA/W			
	21	Inrush Current			
	22	Insulation Class			
	23	Voltage – Energising – Dropout			
	24				
Options	25	Manual reset			
	26	Latching on Energ./De- Energ.			
	27	Bug screen for vent port			
	28	Intrinsically safe			
	29				
	30				
Service Conditions	31	Fluid			
	32	Press. Open / Max.			
	33	Temperature C-Open/ Max			
	34	Maximum Flow			
	35	S.G. at open Temp. Mol.			

		Wt.	
	36	Viscosity mPa.s (cp)	
	37	Allowable Press Frop	
	38	Del. P Shut Off	
	39	Valve CV	
	40		
	41		
	42	Model No.	
	43	Specification Remarks	

**SELF ACTUATED PRESSURE  
CONTROL VALVES**

Units:		Flow -> CNG	CNG-Kg/Hr Pressure->	Temperature-> oC	Level /Length-> >mm
General	1	Tag. No			
	2	Line No.			
	3	Line Size & Sch.			
	4	Service			
	5				
Valve	6	Ty. Of Regulator: Std/pilot op			
	7	Size: Body Port			
	8	End Conn.: - Size & Rating			
	9	- Facing & Finish			
	10	Body Material			
	11	Trim Material			
	12	Set Point			
	13	Impulse Conn.: Int. / Ext.			
	14	Conn. Size & Type if external			
	15	Material of Diaphragm			
	16	Bonnet Type			
	17	Cv: Min. Max.			
	18	Cv: Normal			
	19	Selected Valve CV.			
	20	Predicted Sound Level (dBA)			
	21	Inlet Velocity			
	22	Packing of Seals			
	23	Lubricator ISO – Valve			
	24	Guiding No. of Ports			
	25				
Accessories	26	Pressure Indicator			
	27	Relief Valve			
	28	Line Stainer			
Service conditions	29	Fluid & State			
	30	Flow - Min. / Max.			
	31	Flow - Normal			
	32	Inlet Pr. - Max. / Min			
	33	Inlet Pr. - Normal			
	34	Del. Pr. – Max. Min			
	35	Del. Pr. - Shut Off			

36	Temperature °C - Oper. Max.		
37	Oper. S.G.	Mol Wt.	
38	Cp/ Cv compress factor		
39	Flash %	open visc. Mpa. S (cp)	
40	Deg. Of Superheat % solids		
41	Vapour Pr. / Critical Pr.		
42	Model No. Valve / Actuator		
43			
44	IBR certificate		
45	Specification Remarks		

<b><u>PRESSURE RELIEF</u></b>					
<b><u>VALVES</u></b>					
Units:            Flow -> CNG			CNG- Kg/Hr Pressure- >	Temperature-> oC	Level /Length- >mm
General	1	Tag No.			
	2	Line No.			
	3	Vessel Protected			
	4	Safety / Relief			
Valve	5	Type:			
	6	Full Nozzle Full Lift/ Mod Nozzle			
	7	Bonnet Type			
	8	Conv. / Bellows / Pilot Operated			
	9	Inlet Conn.: Size & Rating			
	10	Facing & Finish			
	11	Outlet Conn.: Size & Rating			
	12	Facing & Finish			
	13	Cap Over Adj. Bolt			
	14	Screwed/Bolted			
	15	Lifting Gear – Type			
	16	Test Gag			
	17				
Material	18	Body and bonnet			
	19	Nozzle and Disc			
	20	Spring			
	21	Bellows			
	22	Resilient Seat seal			
Options	23				
	24				
Basis	25	Code			
	26	Basis of selection			
	27				
Service condition s	28	Fluid and state			
	29	Corrosive constituent			
	30	Required flow capacity			
	31	Mol. Wt./ S.G. at Ref Temp.			
	32	Open Pressure			
	33	Open temp C / Ref Temp C			
	34	Valve discharge to			
	35	Back Press. / Const or variable			
	36	Set Pressure			
	37	Cold Bench Test pressure			
	38	% Over pressure/ % blow			

		down	
	39	Cp/cv [ compressibility Factor]	
	40	Viscosity At Ref. Temp. mPas(cp)	
	41	Vess.: Walltemp.C/ Surf Area-m <sup>2</sup>	
	42		
Orifice	43	Calculated Area cm <sup>2</sup>	
	44	Sel. Area cm <sup>2</sup> / Orifice Design	
	45	No. of valves Reqd. for capacity	
	46	Total Area - cm <sup>2</sup>	
	47	Actual Flow Capacity	
	48		
	49	Model No.	
	50		
	51	IBR Certification	

**PRESSURE**  
**TRANSMITTER**

Units: Flow -> CNG CNG-Kg/Hr Pressure-> Temperature-> °C Level  
/Length->mm

General				Measuring Unit				
<ol style="list-style-type: none"> <li>1. Function</li> <li>2. Type: -</li> <li>3. Case: -</li> <li>4. Mounting: -</li> <li>5. Electrical Area Classification</li> <li>6. Enclosure : Enclosure Class</li> <li>7. Intrinsically safe: -</li> <li>8. Air Supply</li> <li>9. Power Supply</li> <li>10. Cable Entry:</li> <li>11. Accuracy: -</li> <li>12. Repeability: -</li> </ol>				<ol style="list-style-type: none"> <li>24. Service: -</li> <li>25. Element : -</li> <li>26. Body Material: -</li> <li>27. Element Material</li> <li>28. Process conn.: - process conn. Location</li> <li>29. Diaphragm seal wetted parts materials: - other Material Process Conn.: Size &amp; Rating Facing &amp; Finish: - Capability Material:- Armour Flexible: - Armour Flexible Matl.: - Capillary length:- m m Flushing/filling conn. With Miscellaneous</li> <li>30. Over range protection</li> <li>31. Options: - (a) Intrinsically Safe Output meter (b) Air Filter Regulator (c) Mounting Accessories (d) 3-way manifold (e) -----</li> <li>32. Load Capability:-</li> </ol>				

TAG NO.	OPERATING PRESSURE	MAXIMUM PRESSURE	MAXIMUM TEMPERATURE	RANGE		CONTROL	SERVICE	OPTIONS
				Span	Set			

[illegible]

[illegible][illegible]


# **ANNEXURES**

**Annexure-1: Recommended Vendor List (Dispenser)**

<b>Item Code / Description</b>	<b>Coalescent Filter / Regulators</b>
Vendor Name	Remark
Asea Brown Boveri Ltd.	
Divya Control Elements Pvt. Ltd.	
Blue Star Ltd	
Parker	
Swagelok	
Vanaz Engineers Limited	
Filtration Technique	
Ultra Filter	
Placka Instruments & Controls Pvt. Ltd	
Shah Pneumatics	
Shavo Norgren (I) Pvt. Ltd	
V Automat & Instruments Pvt. Ltd.	
Veljan Hydrair Pvt. Ltd.	
<b>Item Code / Description</b>	<b>Field Instruments (P, Dp, F,L,T)</b>
Vendor Name	Remarks
Abb Automation Ltd.	
Brown Bovert Ltd.	
Fisher Rosemount India Limited	
Fisher Rosemount Singapore Pte Ltd.	
Fuji Electric Co. Ltd.	
Honeywell Inc.	
Ashcroft	
Murphy	
Ccs	
Tata Honeywell	
Yokogawa Electric Corporation	
Yokogawa Blue Star Ltd.	
Wika	
Druck	
Beko	
<b>Item Code / Description</b>	<b>Mass Flow Meters</b>
Vendor Name	Remark
	Coriolis Type,
Emerson Process Management	Model Cng 50-2700/Cng 50-1700
Compac , New Zealand	Model Kg 80
Endress & Hauser	Cng Mass
<b>Item Code / Description</b>	<b>Pressure Gauges</b>
Vendor Name	Remarks
An Instruments Pvt. Ltd.	

Badotherm Process Instruments B. V.	
Bourdon Haenni S.A	
British Rototherm Co. Ltd	
Budenberg Guage Co. Ltd.	
Dresser Inc.	
Nagano Keiki Seisakusho Ltd.	
General Instruments Consortium	
Waaree Instrumnets Consortium	
Baumer	
Manometer (India) Pvt. Ltd.	
Wika Alexander Wiegand & Co Gmbh	
Wika Instruments India Pvt. Ltd.	
Druck	

<b>Item Code / Description</b>	<b>Pressure Relief Valve</b>
Vendor Name	Remarks
Alsthom Fluids Sapag	
Anderson Greenwood Crosby	
Bhel (Trichy )	
Dresser Inc.	
Fukui Seisakusho Co. Ltd.	
Instrumentation Ltd. (Palghat)	
Nakakita Seisakusho Co Ltd.	
Nuovo Pignone Spa (Italy)	
Parcol Spa	
Safety Systems Ur Ltd.	
Sarasin Rsbd	
Sebin Valves India Pvt. Ltd.	
Tai Milano Spa	
Tyco Sanmar Ltd.	
Tyco Valves & Controls India Pvt. Ltd	
Farinosla	
Fainger Laser	
Mercer	
Fisher Rosemount (Emerson)	
Swagelok	
Parker	
<b>Item Code / Description</b>	<b>Self Actuated Pr. Control Valve</b>
Vendor Name	Remark
Daniel Industries Inc	
Dresser Produits Industries	
Esme Valves Ltd.	
Fisher Rosemount Singapore Pte Ltd.	
Fisher Exmox Sanmar Limited	
Gortor Controls B.V.	
Instromet International Nv	
Keye & Macdonald Inc	
Nuovo Pignone Spa (Italy)	
Pietro Fiorentini Spa	
Richards Industries (Formerly Treloar)	
Rmg Regel + Messtechnik Gmbh	
Compac Industries Ltd., Nzl.	
Vanaz	
Nirmal Industries Limited	
<b>Item Code / Description</b>	<b>Solenoid Valves</b>
Vendor Name	Remark
Alcon Alexander Controls Limited	
Jeffersons	

Asco (India) Limited	
Asco Joucomatic Ltd.	
Asco Joucomatic Sa	
Parker Hannifin, Usa	
Avcon Controls Pvt. Ltd.	
Barksdale Inc.	
Blue Star Ltd.	
Herion Werke	
Schrader Scovill Duncan Limited	
Seitz Ag	
Compac New Zealand	
Rotex Automation Limited	

<b>Item Code /Description</b>	<b>Special Control Valves</b>
Vendor Name	Remark
Fisher Rosemount Sigapore Pte. Ltd.	
Flowserve Pte. Ltd. (Formerly Duriron)	
Hopkinsons Limited	
Metso Automation Pte Ltd. (Formerly Neles)	
Nuovo Pignone Spa (Italy)	
Spx Valves & Controls (Formerly Dexurik )	
Compac Ind. Ltd. Nzl	
<b>Item Code /Description</b>	<b>Regulators</b>
Vendor Name	Remark
Compac Ind. Ltd.	
Fisher Rosemount Sigapore Pte. Ltd.	
Flowserve Pte. Ltd. (Formerly Duriron)	
Hopkinsons Limited	
Metso Automation Pte Ltd. (Formerly Neles)	
Nuovo Pignone Spa (Italy)	
Spx Valves & Controls (Formerly Dexurik )	
Swagelok	
Parker	
Rhps	
<b>Item Code /Description</b>	<b>Two Way / Three Way Valves</b>
Vendor Name	Remark
Swagelok, Parker, Compac	
<b>Item Code /Description</b>	<b>Ss Fittings</b>
Vendor Name	Remark
Swagelok, Parker, Hamlet	
<b>Item Code /Description</b>	<b>Ss Tubing</b>
Vendor Name	Remark
Sandvik, Fae	
Parker	
<b>Item Code /Description</b>	<b>Hoses</b>
Vendor Name	Remark
Parker	
Swagelok	
Eaton	
<b>Item Code /Description</b>	<b>Breakaway Coupling</b>
Vendor Name	Remark
Opw	

Staubli	
<b>Item Code /Description</b>	<b>Flameproof Glands</b>
Vendor Name	Remark
Comet	

## **ANNEXURE-2: VENDOR DATA REQUIREMENT (DISPENSER)**

### **1.0 DRAWING AND DATA REQUIREMENT**

**1.1** The following data and information marked “X” shall be furnished by the vendor for Car Dispenser:

<b>S. No.</b>	<b>Description</b>	<b>With Bid</b>	<b>After Job Award</b>		
			<b>For Review</b>	<b>For Information</b>	<b>Final in Book Form</b>
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>
1.0	GENERAL				
1.1	Filled in Material Requisition Compliance Schedule.	X			
1.2	Filled in Deviation Schedule.	X			
1.3	Duly filled up “Experience Record Schedule”. Vendor to note that information furnished by them shall be used to assess the provenances of offered Dispensers and Qualification of vendor, Accordingly vendor to furnish references of those cases which are matching with offered Dispensers.	X			
1.4	Installation manual			X	X
1.5	List of components of Dispenser with Make & Specification of components. Vendor shall also submit “Technical Catalogues” of components			X	
1.6	Start-up, operation & maintenance manual showing assembly details and critical tolerances. A copy of all certified drawings & documents to be enclosed.			X	X
1.7	Lubricant list with specification			X	X
1.8	Battery limit (interface) drawing/ information	X	X		
1.9	Drawing list and submission schedule		X		
1.10	Project implementation schedule, ordering and inspection schedule for long lead and major items		X		

1.11	Pre-commissioning & commissioning procedure		X		
1.12	Performance guarantee test procedure		X		
1.13	Weights & Measures Certificates from the country of origin for offered models of Car Dispensers unit model/mass flow meter model for dispensing specified mass flow rate at specified overall batch accuracy.	X	X		X
1.14	The “Test Certificate” for mass flow meter.		X		
1.15	Weights & Measures approval from Indian Authorities.		X		
1.16	Type approval for the offered dispenser from Petroleum & Explosive safety organization, Govt. of India		X		X

2.0	DESIGN				
2.1	Process flow diagrams (PFDs) and Piping & Instrumentation diagrams (P&IDs) of sub systems and complete system with write-up on operation		X		X
2.2	Data sheets of Car Dispensers duly filled up.	X	X		X
2.3	Basic design calculations for system design, equipment selection		X		X
2.4	Performance data, vendor literature for equipment selection, performance curves with duty point marked for individual equipment		X		X
2.5	Specification for piping material & valves.		X		X
2.6	Utility requirement		X		X
2.7	Detail of control wiring diagram, interlock/ shutdown/ control scheme with write up on operation. Sizing calculation for instrument items.		X		X
2.8	Dispenser communication port details and requirement information as per specification and list of signals		X		X
3.0	CONSTRUCTIONAL FEATURES				
3.1	G.A. drawing of Dispensers showing maintenance clearances required.	X	X		X
3.2	Cross section drawings of individual equipment/ skid, material & parts list.			X	X
3.3	Termination & Wiring Diagrams			X	X
4.0	SPARES				
4.1	List of spares for two years normal operation per Car Dispenser.		X		
5.0	Drawings, documents, data as asked under Electrical & Instrumentation specifications of this Material Requisition.		X		

## 1.2 **DOCUMENT DISTRIBUTION SCHEDULE**

- 1.2.1 Documents and drawings under column no. 3 shall be submitted with each copy of the bid.
- 1.2.2 Documents listed under column 4 are to be submitted in 2 copies
- 1.2.3 Documents listed under column 5 are to be submitted in 2 copies.
- 1.2.4 Documents listed in column 6 are to be submitted as hard bound indexed book containing the following details in Twelve (2) copies to be submitted within 2 weeks of release note/dispatch of materials/ equipment from vendor's works.

**1.3     DETAILS TO BE INCLUDED IN FINAL DOCUMENTS BOOKS**

- 1.3.1     Copy of P.O. and all amendments.
- 1.3.2     Copy of Purchase Requisition and all amendments.
- 1.3.3     Manufacturing Data Book containing all test certificates of components, raw materials, stage manufacturing tests and inspections, final tests & inspection documents including welders' qualification & welding procedure qualification, repairs & reworking carried out in shops. All raw material test certificates must be correlated to the P.O. Item No. & component to which they relate by clear stating on the certificates.
- 1.3.4     Spares details including assembly drawings, part numbers, delivery, prices and ordering information.
- 1.3.5     All design calculations carried out by the vendor.
- 1.3.6     Final Drawing Index and all as-built drawings reduced to A3/ A4 size and wherever reduction is not possible,

full size copies duly folded and placed in plastic pockets.

- 1.3.7 Catalogues/leaflets of sub-vendors/suppliers of various bought out components highlighting the components actually supplied correlated to P.O. Item Numbers.
- 1.3.8 Operating and maintenance instructions including lubrication schedules with details of suppliers for procurement by OWNER for subsequent needs.
- 1.3.9 Release Note and Packing List.
- 1.3.10 Any other documents asked for in the Purchase Requisition.
- 1.3.11 All final drawings shall also be given to purchaser in digitized form on CD-ROM compatible to AUTOCAD software.
- 1.4 SPECIAL INSTRUCTIONS FOR SUBMISSION OF DWGS./DOCUMENTS:**
  - 1.4.1 Fold all prints to 216 MM x 279 MM size & roll transparencies.
  - 1.4.2 Vendor to forward the drawings and documentation to GGPL (Attention vendor prints control department) clearly specifying purchasers Job no. & Req. No.
  - 1.4.3 The drawing/Document no. with Rev. No. is essential. The number may be upto a maximum of 28 characters in length.
  - 1.4.4 Each Drawing/Document submitted to GGPL must be checked and signed/stamped by vendor before it is submitted to GGPL.
  - 1.4.5 Revision number must change during subsequent submission of vendor document.
  - 1.4.6 Multi-sheet documents other than drawings must be submitted in their entirety in the event of a re-submission even if only a few sheets are revised.
  - 1.4.7 Final submission in bound volumes shall necessarily have a cover page giving project title, Item name, P.O. No. Particulars of owner & vendor and an index giving list of drawings & documents included (with revision no.).
  - 1.4.8 All vendor drawings to be provided with a blank space measuring 75 mm W x 38 mm H for marking of review codes etc. by GGPL.
  - 1.4.9 The review of the vendor drawings shall be done by GGPL, as applicable, under the following review codes:

Review Code 1/A	No comments.
Review Code 2/B	Proceed with manufacture/fabrication as per commented drawings. Revise drawings required
Review Code 3/C	Document does not conform to basic requirements.

- 1.4.10 Review of vendor drawings by GGPL would be only to check compatibility with basic designs & concepts & would in no way absolve the contractor/vendor of his responsibility to meet applicable codes, specifications & statutory rules/regulations.
- 1.4.11 Vendor shall submit within 10 days after placement of FOI, the complete list of drawings/ documents with submission dates against each. Critical drawings, only, the

list of which will be agreed during kick-off meeting shall be reviewed jointly at GGPL's office.

**ANNEXURE-3: VENDOR DATA REQUIREMENT (INSTRUMENTATION)**

S.No.	Description	Document Category		
		Inf.	Review	As built
1.	Drag and Document Schedule		*	*
2.	Piping and Instrument Diagram		*	*
3.	Instrument Index	*		*
4.	Sub- Vendor List for Instruments and Accessories		*	
5.	Instrument Sizing calculations		*	*
6.	Utility requirements	*		
7.	Level Sketches	*		
8.	Material requisition		*	
9.	Purchase Requisition	*		*
10.	Functional schematic	*		*
11.	Logic diagrams		*	*
12.	Instrument loop drawings	*		*
13.	Control room layout		*	*
14.	Panel front arrangement		*	*
15.	Power Supply Distribution		*	*
16.	Wiring diagram for panels	*		*
17.	Configuration diagram		*	*
18.	I/O assignment	*		*
19.	Details of OPC, configuration port, signals details etc		*	*
20.	Instrument Duct/Tray layout	*		*
21.	Instrument Cable schedule	*		*
22.	Instrument location plans	*		*
23.	Instrument installation drawings	*		*
24.	Bill of material for installation items	*		*
25.	Spare part list for			
	(a) 2 years operation			*
	(b) Start up and commissioning			*
	(C) Spare instruments (10%)		*	*
26.	Inspection and test procedures	*	*	
27.	Complete catalogues with part list for all vendor supplied instruments, controls etc	*		*

28	Installation, operation and maintenance manuals			*
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Note: This list indicates the minimum drawings and document requirements. However vendor shall submit a complete list of document and drawing schedule listing all drawings and documents to be submitted by them during the course of execution of the job. The schedule shall list all drawings and documents along with their number and expected date of submission.

# ANNEXURE - 4

## QUALITY ASSURANCE PLAN : DISPENSER

CODING STRUCTURE						Manufacturer
Codes for Extent of Inspection, Tests & Test Certificates				Codes for Documents		
Code	Description	Code	Description	Code	Description	
1	Visual	12	Power failure	D1	Approved GA Drawing	
2	Dimensional	13	Failure of metering	D2	Approved P&ID	
3	Fitment & Alignment	14	Failure of totaliser	D3	Approved data sheet	
4	Physical Test	15	Calibration	D4	Approved Bill of material	
5	Chemical Test	16	Pressure test	D5	Purchase requisition	
6	Running Test	17	Noise & vibration	D6	W&M Certificate from country of origin	
7	Leak Test	18	Enclosure protection test	D7	Calibration certificate of all measuring test / instruments and gauges	
8	Dispenser should automatically stop in case of failure of totaliser	19	Paint shade verification			
9	Check for single bank system	20	Test certificate for bought out components			Customer's Information Customer: M/s Godavari Gas Limited, Consultant : None LOA No.: GGPL/ / dated Item : CNG Car Dispensers
10	Check for manual shut	21	Flow capacity test			

	off					
11	Batch accuracy test					

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**DETAILED INSPECTION AND  
TEST PLAN**

<b>EQUIPMENT DETAILS</b>		<b>INSPECTION AND TESTS</b>				<b>SCOPE OF INSPECTION AND TESTS</b>		
<b>Sr . N o</b>	<b>Description</b>	<b>RAW MATERIAL AND Stage Inspection</b>		<b>FINAL INSPECTION</b>		<b>Documents for submission to GGPL/PMC/T PI</b>	<b>Acceptance Criteria</b>	<b>Activity by GGPL/PMC/TPI</b>
		<b>MFR</b>	<b>GGPL/ PMC/TP I</b>	<b>MFR</b>	<b>GGPL/PMC/ TPI</b>			
1	Dispenser Frame	1.2.3.4.5		1.2.3.	1.2.3	D1,D2,D3,D4	Tech. Specs in PO	Review of documents
2	Mass Flow Meter	1.2.3.4.5.15		1.2.3.15	1.2.3.15	D1,D2,D3,D4,D7	D7 & Tech Specs in PO	Review of documents
3	Actuator Valves	1.2.3.4.5.6.7		1.2.3.6.7	1.2.3.6.7	D1,D2,D3,D4,D7	D7 & Tech Specs in PO	Review of documents
4	Filling hose	1.2.3.4.5.16		1.2.3.16	1.2.3.16	D1,D2,D3,D4	Tech. Specs in PO	Review of documents
5	Totaliser	1.2.3.8		1.2.3.8	1.2.3.8	D1,D2,D3,D4,D7	D7 & Tech Specs in PO	Review of documents
6	Software	9		9	9	D3	Tech. Specs in PO	Witness
7	Pressure Gauge	1.2.3.4.5.15		1.2.3.15	1.2.3.15	D1,D2,D3,D4,D7	D7 & Tech Specs in PO	Review of documents
8	Pressure Transducer	1.2.3.4.5.15		1.2.3.15	1.2.3.15	D1,D2,D3,D4,D7	D7 & Tech Specs in PO	Review of documents
9	Shut off valves	1.2.3.4.5.10		1.2.3.10	1.2.3.10	D1,D2,D3,D4,D7	D7 & Tech Specs in PO	Review of

						7		documents
10	Performance Test (using CNG)	11.21		11.21	11.21	D3,D7	D6, D7 & Tech Specs in PO	Witness
11	Dispenser response	12.13.14.17.19.20		12.13.14.17.19.20	12.13.14.17.19.20	D3,D7	D7 & Tech Specs in PO	Witness
<p>Note:</p> <ol style="list-style-type: none"> <li>The Above Testing and acceptance criteria are minimum requirements, however, manufacturer shall ensure that the product shall also comply to the additional requirements as per Particular Technical specifications(PTS)</li> <li>Owner/Owner representative shall review/approve all the documents related to QAP/Quality manuals/Drawings etc. submitted by supplier.</li> <li>All reference Codes/ Standards, Documents, P.O. Copies shall be arranged by vendor / supplier for reference of TPIA/GGPL at the time of Inspection</li> <li>At the time of delivery of material in stores, vendor will submit copy of all related document of inspection along with release note &amp; MTC.</li> </ol>								

# **SECTION – VII**

## **SCHEDULE OF RATES**



<b>Ite m Sr. No.</b>	<b>Brief Description</b>	<b>Uni t</b>	<b>Qty</b>	<b>Basic unit rate including packing, forwarding &amp; inspection charges</b>	<b>GST @ ____% on column 2</b>	<b>Freight, Insurance &amp; unloading charges at GGPL stores East / West Godavari.</b>	<b>GST @ 18% on column 4</b>	<b>Unit FOT price Including all applicable taxes (2+3+4+5)</b>	<b>Total FOT price at GGPL stores - A.P. including all applicable taxes (1)x (6)</b>
			1	2	3	4	5	6	7
A	Supply :								
1.0	Design, Engineering, Manufacturing, Shop testing and supply of CNG Electric Motor driven integrated compressor package consisting of Compression, Storage & Dispensing unit with discharge flow capacity of 400 SCM/H at the specified condition (as per Technical Specification) complete with drive electric motor, Cooling system, Lubrication system, auxiliary Air Compressor system, Priority panel, Flame proof control panel (Local), and other accessories including erection and commissioning spares including acoustic enclosures.	nos	1						
	<b>Sub Total of Supply A</b>								

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<b>B Erection &amp; Commissioning</b>							
<b>B</b>	<b>Services</b>	<b>Unit</b>	<b>Qty</b>	<b>Unit Rate</b>	<b>GST @ ____% on column 2</b>	<b>Unit total charges inclusive of taxes (2) + (3)</b>	<b>Total charges inclusive of taxes (1) x (4)</b>
			<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
2.0	Erection & Commissioning						
2.1	Installation, Erection and Commissioning of the Compressor Packages	nos	1				
2.2	Performance Acceptance Test	nos	1				
	<b>Sub Total for Services B</b>						
<b>C Operation &amp; Comprehensive Maintenance</b>							
3.0	Lump sum annual operation & comprehensive maintenance of Compressor Package						
3.1	Lump sum annual operation & comprehensive maintenance charges for 1st year i.e during warranty period ( 01 package x 12 months )	Machine Months	12				
3.2	Lump sum annual operation & comprehensive maintenance charges for 2nd year i.e after warranty period ( 01 package x 12 months )	Machine Months	12				

**TENDER NO: GGPL/KKD/C&P/PR 2044/2019-20/11**

3.3	Lump sum annual operation & comprehensive maintenance charges for 3rd year i.e after completion of 2nd year ( 01 package x 12 months )	Machine Months	12				
	<b>Sub Total for Services C</b>						
	<b>GRAND TOTAL (A+B+C)</b>						