



Bhagyanagar Gas Ltd.

**BHAGYANAGAR GAS
LIMITED**

**Procurement of 15 No's of CNG Car Dispensers for
BGL Hyderabad, Vijayawada and Kakinada on Annual
Rate Contract Basis**

**Volume
II of II**

Bid Document No. BGL/426/2018-19



Bhagyanagar Gas Ltd.

**BHAGYANAGAR GAS LIMITED
(A JOINT VENTURE OF HPCL & GAIL)**

BID DOCUMENT FOR

**PROCUREMENT OF 15 No's OF CNG CAR
DISPENSERS FOR BGL HYDERABAD, VIJAYAWADA
AND KAKINADA ON ANNUAL RATE CONTRACT BASIS**

**UNDER LIMITED DOMESTIC
COMPETITIVE BIDDING**

Bid Document No.: BGL/426/2018-19

VOLUME-II of II



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SECTION – 7

SPECIAL CONDITIONS OF CONTRACT (SCC)



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1.0 GENERAL

The following article shall supplement the General conditions of Contract. Where any portion of the General Conditions of Contract and Instruction to Bidders is repugnant to or at variance with any provisions of the Special conditions of contract, then unless a different intention appears, the provision (s) of the Special Conditions of Contract shall be deemed to override the provision (s) of General Conditions of Contract to bidders, only to the extent that such repugnancies of variations in the Special Conditions of Contract as are not possible reconciled with the provisions of General Condition of Contract to Bidders.

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

- i. Letter of Award/ Purchase Order
- ii. Letter of Acceptance/ FOI along with Statement of Agreed Variations.
- iii. Schedule of Rates as enclosures to Letter of Award/ Purchase Order
- iv. Special Conditions of Contract
- v. Drawings
- vi. Technical/ Material Specifications
- vii. Instruction to Bidder
- viii. General Conditions of Contract (Goods) for supply part of the contract and GCC (for procurement of works) for other than supply part of the contract.
- ix. Applicable standards as specified.
- x. Applicable standards not specified.

1.1 This enquiry envisages total responsibility for complete work from design, engineering, manufacture, supply upto the designated Project Sites, all taxes, duties, levies, fees, encumbrances, octroi, etc. as applicable and payable by the bidders under the Contract, all insurance handling of goods at all stages, storage, associated works including materials, tools/ tackles etc., for such civil works obtaining statutory approvals if any from the local authorities prior to start of work at sites till the time of handing over, installation, testing, pre commissioning, performance test, Site Acceptance Test, Trial Run, system commissioning 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.

1.2 Owner shall be issuing concessional forms like Form-C or any other such forms, for availing concessional taxes/ duties by the bidder, if available. As such bidder shall include full rates of all taxes/ duties as applicable and percentages of the same shall be filled in at Agreed Terms and Conditions- Section-V of this tender document.

1.3 Deleted

1.4 At the designated site the Owner shall make available to the Bidder requisite space for the purpose of storage.



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- 1.5 Payments shall be made as per 'Terms of Payment' Clause no. 18 of SCC enclosed herewith.
- 1.6 All Bidders are requested to indicate positively the division of work To be directly undertaken by the Bidder Envisaged to be undertaken by Bidder's Sub-contractor under Bidder's Overall responsibility. A copy of MOU (Memorandum of Understanding) shall be furnished along with the offer.
- 1.7 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 turnkey philosophy of the Owner within the quoted lump sum 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 lump sum price and no extra charges are payable by the Owner.

1.8 CONTRACT AGREEMENT

- 1.8.1 Contract Documents for agreement shall be prepared, after award of works to the successful tenderer by Fax/Detailed letter of Intent in line with format F-5 to GCC. Until the final Contract documents are prepared and executed this tender document together with the annexed documents, modifications, deletions agreed upon by the OWNER and Tenderer's acceptance there of shall constitute a binding contract between the successful tenderer and the OWNER based on terms contained in the aforesaid documents and the finally submitted and accepted prices.
- 1.8.2 The Contract document shall consist of the following :-
- Original tender documents issued with its enclosures.
 - Addendum/Corrigendum to tender documents issued if any.
 - Fax of Intent.
 - The detailed letter of Intent/Acceptance along with statement of Agreed Variation (if any) and enclosures attached there with.
1. 8.3 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 Telegram/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.

1.9 Preliminary Examination:

- 1.9.1 The OWNER will examine the Bids to determine whether they are complete, whether any computational errors have been made, whether required sureties have been furnished, whether the documents have been properly signed, and whether the bids are generally in order.
1. 9.2 Arithmetical errors will be rectified on the following basis. If there is a discrepancy between the unit price and the total price that is obtained by multiplying the unit price and quantity, the unit price shall prevail and the total price shall be corrected. If the



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Bidder does not accept the correction of the errors, its Bid will be rejected. If there is a discrepancy between words and figures, the amount in words will prevail.

1.9.3 Prior to the detailed evaluation, the OWNER will determine the substantial responsiveness of each Bid with reference to the Bidding Documents. For this purpose a substantially responsive Bid is one which confirms to all other terms and Conditions of the Bidding documents without material deviations. The OWNER'S determination of a Bids responsiveness is to be based on the contents of the Bid itself without recourse to extrinsic evidence.

1.9.4 A bid determined as not substantially responsive will be rejected by the OWNER and may not subsequently be made responsive by the Bidder by correction of the non-conformity.

1.9.5 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.

1.10 Complete Scope of Work

The scope of work is mentioned in Tender Document. Offers of those Bidders who take total Responsibility for complete scope of work for the SOR item in case evaluation is item wise basis otherwise for all the items. as mentioned in Tender Document shall be considered for detailed evaluation.

1.11 Clarification of Bids

After opening of the Bids to assist in the examination, evaluation and comparison of Bids, the OWNER may, at its discretion, ask the Bidder for a clarification of its Bid. The request for such clarification and the response shall be in writing and no change in the price or substance of Bids shall be sought, offered or permitted.

1.12 Registration Under Sales Tax Act (Wherever applicable)

Attested copy of certificate for registration under State Government Sales Tax Act in the proforma prescribed by State Govt. should accompany the tender. The registration should be in the name of the Firm / Individual quoting for the work. In absence of the above registration, tenderer may not be awarded the work tendered for, in the light of State Govt. directive /instruction.

1.13 Labour Licence

Before starting of work, contractor shall obtain a license from concerned authorities under the Contract Labour (Abolition and Regulation) Act 1970, and furnish copy of the same of Owner.

1.14 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 Telegram/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.



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1.15 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.

1.16 Deduction at source

1.16.1 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.

1.17 TESTS AND INSPECTION

The contractor shall carry out the various tests as enumerated in the technical specifications of this tender document and the technical documents that will be furnished to him during the performance of the work and no separate payment shall be made unless otherwise specified in schedule of rates.

1.18 GENERAL DEFINITIONS

1.1. In addition to meaning ascribed to certain capitalized terms in Section -- "GCC - 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", 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 & site acceptance test of **CNG DISPENSERS FOR CNG FILLING STATIONS** 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.



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- 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
 - ii) Fax of Acceptance
 - iii) Schedule of Rates as enclosures to Fax of Acceptance
 - 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) Indian Standards
 - xi) Other 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 II of II & Material Rquisition & addendum / corrigendum (if any) document.

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 CONTRACT PERIOD.: RATE CONTRACT

The ARC shall be valid for a period of 1 YEAR years from the date of issuance of Fax of Intent (FOI)/PO.

DELIVERY SCHEDULE/COMPLETION SCHEDULE:

The completion period Supply, Installation, Commissioning & Performance Testing and overall completion as defined in the Tender Document shall be as per following:-



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Design, Engineering, Testing, Supply (on FOT site basis) complete in all respect.	8 weeks from date of written intimation.
Installation, Commissioning & Performance Testing complete in all respect.	Within 01 weeks from date of written intimation.

Note:Purchaser reserves the right to change the destination i.e. Purchaser's Store during execution of Contract.

Dispensers may be required to be delivered and installed at various locations in Hyderabad, Vijayawada and Kakinada.

Location of delivery & installation shall be confirmed in written intimation(s) along with placement of order / Letter of Intimation.

5. COMPLIANCE WITH LAWS.

5.1 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 principal 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 as to any manner, claim, and cause of action or thing whatsoever arising 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.



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8.0 CONTRACT PERFORMANCE GUARANTEE

8.1 Bidder shall submit Contract Performance Guarantee as in the form of irrevocable Bank Guarantee/ Demand Draft /Banker's Cheque.

8.2 Vendor shall submit SD/CPBG @ 10% of Order/ Contract Value excl. of taxes & duties within 30 days of FOA/ notification of award.

OR

The Contract Performance Security shall be with Initial Security Deposit (ISD) @ 2.5% of basic contract value and deduction @ 7.5% of the RA bill subsequently from RA bills till the total amount of security deposit (including ISD and deducted amount) reaches 10% of annualized basic contract value (without GST therein) towards faithful performance of the contractual obligations.

Pursuant to Cl. No. 24 of GCC –Works/ Services and Cl. No .12, GCC- Goods, bidder will provide performance guarantee within 30 days of the receipt of notification of award i.e., Fax of Acceptance (FOA) / Purchase Order (PO) of appropriate value in accordance with the proforma provided in bid document.

Bidder will submit two separate CPBG / Performance security i.e., one for supply, installation, commissioning & handing over of compressor package valid till the expiry of Defect Liability Period (DLP) / Guarantee / Warranty Period plus 90 days as defined in bid document and one for Annual Operation & Maintenance activities during warranty & post warranty period valid for 90 days beyond the expiry of AMC period & shall be submitted before start of AMC.

The Security deposit shall be submitted in the form of an unconditional irrevocable Bank Guarantee for Warranty from any Indian Nationalized Bank/ Scheduled bank/ reputed foreign bank having office in India and registered with Reserve Bank of India other than co-operative banks acceptable to BGL in the name of M/s Bhagyanagar Gas Limited, Hyderabad.

Alternatively the bidder can also submit the security deposit in the form of crossed Demand Draft in favor of M/s Bhagyanagar gas Limited, Hyderabad. Performance Guarantee shall be valid beyond 3 months from Guarantee/ Warrantee Period.

9.0 SUBSEQUENT-LEGISLATION

9.1 All duties, taxes (including sales tax on works contract/ trade tax / turnover tax/ service tax as applicable), 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 BGL's account but such Taxes / duties imposed beyond Contractual Completion date shall be to the Contractors account.



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10.0 TAXES, DUTIES AND LEVIES IN INDIA

10.1 The Contractor agrees to and does hereby accept full and exclusive liability for the payment of any and all taxes, duties, including excise duty, service tax, custom duty CVD, additional CVD, Octroi etc. now in force and hereafter increased, imposed or modified from time to time in respect of works and materials and all contributions and taxes for unemployment compensation, insurance and old age pensions or annuities now or hereafter imposed by any Central or State Government authorities which are imposed with respect to or covered by wages, salaries or other compensations paid to the persons, employed by the Contractor and the Contractor shall be responsible for the compliance, with all obligations and restrictions imposed by the Labour Law or any other law affecting employer-employee relationship and the Contractor further agrees to comply, and to secure the compliance of all sub-contractors with all applicable Central, State, Municipal and local law and regulation, and requirement of any central, State or Local Government agency or authority. Contractor further agrees to defend, indemnify and hold Owner/Consultant harmless from any liability or penalty which may be imposed by the Central, State or Local authorities by reason of any violation by Contractor Subcontractor of such laws, regulations or requirements and also from all claims, suits proceedings that may be brought against the Owner/Consultant arising under, growing out of, or by reason of the work provided for by this Contract, by third parties, or by Central or State Government authority or any administrative sub-division thereof. The prices shall also be inclusive of Sales Tax / Works Contract Tax / VAT/ Trade tax / GST/Turnover tax as applicable.

10.2 Owner/Consultant shall make from Contractors bills such tax deductions as are required as per rules and regulations in force from time to time.

10.3 If excise duty is applicable during site fabrication, the same must be assessed and deemed to be included by the bidder in the quoted prices. The bidder in this regard shall arrange all required formalities.

10.4 REGISTRATION UNDER SALES TAX ACT (Wherever applicable) Attested copy of certificate for registration under State Government Sales Tax Act in the proforma prescribed by State Govt. should accompany the tender. The registration should be in the name of the Firm / individual quoting for the work. In absence of the above registration, tenderer may not be awarded the work tendered for, in the light of State Govt. directive / instruction.

11. TAXES, DUTIES AND LEVIES IN FOREIGN COUNTRIES

11.1 The Contractor agrees to and does hereby accept full and exclusive liability at is own cost for the payment of any and all taxes, duties and levies etc as are payable to any government, local or statutory authority in any country other than India, as are now in force or as hereafter imposed, increased or modified, and as are payable by Contractor, his agents, sub-contractor and their employees etc. for performance of work under this contract. The Contractor shall be deemed to have been fully informed with respect to all such liabilities and considered the same in his bid, and the contract shall, not be varied in any way on this account.



12. STATUTORY VARIATION IN TAXES & DUTIES

12.1 Pursuant to Clause number 10, Clause 100.1 of GCC is modified to the following extent.

12.2 The statutory variation in Custom Duty, CVD, Excise duty, Sales Tax, VAT, Service Tax etc. except WCT within the contractual delivery period shall be to Owner's account, against submission of the documentary evidence. However, any increase in the rate of Custom Duty, CVD, Excise duty, Sales Tax, VAT, GST etc. beyond the contractual delivery period shall be to contractors account whereas any decrease in the rate of Custom Duty, CVD, Excise duty, Sales Tax, VAT, GST etc. shall be passed on to the Owner.

12.3 The base date for the purpose of applying statutory variation shall the due date of submission of last price bid.

12.4 Regarding Service Tax and Excise Duty, Contractor shall submit Cenvatable bills giving break-up of tax amount, so that Owner can avail the Cenvat benefit as per rule. The Cenvatable invoice to be raised on Engineer –In charges ,BGL Limited ,HYD.

13. INCOME TAX & CORPORATE TAX:

13.1 Income Tax deductions shall be made from all payments made to the Contractor as per the rules and regulations in force in accordance with the Income Tax Act prevailing from time to time.

13.2 Corporate Tax liability, if any, shall be to the contractors account.

13.3 Works Contract tax / VAT etc as may be applicable shall be deducted as per the trade tax act.

14. WITHHOLDING, ACCOUNTING AND TAX REQUIREMENTS

14.1 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.

15. Deleted

16.0 FIRM PRICE

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



17. PROVIDENT FUND ACT

- 17.1 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.
- 17.2 The bidder shall submit the EPF code number along with the bid document.
- 17.3 The Contractor shall strictly comply with the provisions of Employees Provident Fund Act and register themselves with RPFC before commencing work. The Contractor shall deposit Employees and Employers contributions to the RPFC every month. The contractor shall furnish along with each running bill, the Challan/receipt for the payment made to the RPFC for the preceding months.
- 17.4 In case the RPFC's Challan/receipt, as above, is not furnished, Owner shall deduct 16 % (Sixteen percent) of the payable amount from contractor's running bill and retain the same as a deposit. Such retaining amounts shall be refunded to Contractor on production of RPFC Challan/receipt for the period covered by the related running bill.
- 17.5 LABOUR LICENCE: Before starting of work, contractor shall obtain a license from concerned authorities under the Contract Labour (Abolition and Regulation) Act 1970, and furnish copy of the same of Owner.

18. PAYMENT TERMS AND MODE OF PAYMENT

- 18.1 The terms and mode of payment is detailed as follows.

FOR SUPPLIES (SOR Item 1.a & 1.b)

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.

- **85 % of supply value** as applicable will be paid progressively by Owner within 15 days against receipt of material/ equipment at site & submission of the following documents:-
- i) Invoice in triplicate (Invoice shall enable owner to claim GST as applicable. Invoice also to indicate all taxes and duties separately.)
 - ii) Inspection Certificate cum Release note issued by inspection agency appointed by Owner / Owner or as per Scope of Work / Services.
 - iii) GR/ LR
 - iv) Packing List
 - v) Insurance cover note covering transit insurance
 - vi) A certificate from manufacturer that the all items/ equipment under supply including its component or raw material used with manufacturing are new and conform to the tender requirement. In case manufacturer is not the contractor this certificate will duly be endorsed by the contractor owning overall responsibility.
 - vii) A copy of legal Indemnity bond for the value of delivered items. (Which will be valid till equipment is installed & commissioned and taken over by Owner at site).



- viii) Copy of Performance Bank Guarantee(s) of appropriate value (as per order) as already submitted by supplier.
- ix) Document related to GST credit to be claimed by Owner, if applicable.
- x) 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

- **5% payment:** Progressively on completion of Installation, erection & commissioning of each Dispenser unit and against submission of invoice along with CAR policy (Contractor's all risk policy) valid till commissioning, completion of Calibration/ PG tests and final acceptance by owner. However, if, erection is not started within 90 days after supply due to non availability of site/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 90 days; ie; 15 months from the date of FOT site (actual) & shall be extended further, if required.
- **10% payment:** Progressively on Testing and completion of Calibration / PG test of each Dispenser 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
 - Sales tax assessment certificate, If applicable
 - No claim certificate

In case of delay in erection and commissioning, the invoice value shall be reduced to take care of PRS clause.

FOR ANNUAL MAINTENANCE SERVICE CHARGES (SOR Item. 2)

1. Monthly payment on pro-rata basis as certified by Engineer-in-charge shall be made against the invoices raised.
2. The date of successful performance test at site (which shall be conducted within 90 days from the date of successful commissioning or from the date of commercial operation) 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 from the date of commercial operation upto the date of performance test **as part payment against O&M** till 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.

General Notes

- i) Invoice shall be raised on the basis of not less than one fortnight interval.
- ii) All efforts shall be made to release the payment within 15 days after receipt of relevant documents complete in all respects.
- iii) All bank charges incurred in connection with payments shall be to vendor's accounts.
- iv) The contractor shall be responsible, on completion of contract, or wherever required, to undertake customs reconciliation work with Indian customs



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authorities and finalize the customs assessment by furnishing the necessary technical information etc. to the said authorities.

- v) Unless otherwise specifically stated in bid document, all payments shall be made in the currency quoted.
- vi) No interest charges for delay in payments, if any, shall be payable by Owner.
- vii) 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.

18.2 MODE OF PAYMENT

1. Payment will be released through Cheque in ITB clause.
2. The quoted Rates shall be inclusive of all Taxes & Duties applicable during the Contract period Except for GST. GST & Cess thereon shall be paid extra, if applicable, on submission of documentary evidence / invoice(S).

The Bidder shall indicate in the bid the GST Registration Number and in case the GST registration number is not available, the bidder will give confirmation for obtaining registration with a copy of application for registration.

The contractor liable to pay Goods Service tax for the work / services rendered to BGL, shall specifically mention the service tax registration number in their invoices. Further, the amount and rate of service tax shall be separately and distinctly specified in the invoice.

For payment of Goods Service tax, serially numbered invoice / bill shall be issued by service provider and should also specify the following:

- (I) The Name, Address and Registration number of the service
- (II) The Name and Address of the Recipient of the Taxable
- (III) Description, Classification & Value of Taxable service provided and;
- (IV) The GST payable on such services

The above details are required to enable BGL to avail Cenvat Credit for the GST payments.

Please note that responsibility of payment of GST lies with service provider only.

- i. Bidders are required to submit copy of the GST Registration Certificate while submitting the bids wherever GST (CGST & SGST/UTGST or IGST) is applicable.
- ii. 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 /



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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, BGL may seek copies of challan and certificate from Chartered Accountant for deposit of GST (CGST & SGST/UTGST or IGST) collected from Owner.

iii. In case CBEC (Central Board of Excise and Customs)/ any equivalent Central Government agency/ State Government agency brings to the notice of BGL that the Supplier of Goods / Services (Service Provider) has not remitted the amount towards GST (CGST & SGST/UTGST or IGST) collected from BGL to the government exchequer, then, that Supplier of Goods / Services (Service Provider) shall be put under Holiday list of BGL for period of six months as mentioned in Procedure for Evaluation of Performance of Vendors/ Suppliers/ Contractors/ Consultants.

iv. 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 BGL 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 BGL 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 BGL'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.

v. Where the BGL is entitled to avail the input tax credit of GST (CGST & SGST/UTGST or IGST):-

Owner/BGL 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/BGL 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.

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.

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

Owner/BGL 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



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& 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.

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

- vii. BGL 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 (if applicable as per Govt. Act/ Law in vogue). Where BGL 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.
- viii. In case BGL 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 BGL has the obligation to discharge GST (CGST & SGST/UTGST or IGST) liability under reverse charge mechanism and BGL 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 BGL or ITC with respect to such payments is not available to BGL for any reason which is not attributable to BGL, then BGL shall be entitled to deduct/ setoff / recover such amounts against any amounts paid or payable by BGL to Contractor / Supplier.

- ix. 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 BGL 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 BGL for any reason which is not attributable to BGL, then BGL 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) there upon together with all penalties and interest if any, against any amounts paid or payable by BGL to Supplier of Goods / Services.

18.3 DEDUCTION AT SOURCE:

1. Purchaser will release the payment to the Seller after effecting deductions as per applicable law in force.
2. Purchaser will release payments to the Contractor after offsetting all dues to the Purchaser payable by the Contractor under the Contract.

18.4 PAYING AUTHORITY:

In-charge (Finance), Bhagyanagar Gas Ltd, Hyderabad.



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Cenvatable invoice(s)/ Bill(s) shall be raised in the name of Engineer-in-charge, Bhagyanagar Gas Ltd, Hyderabad.

19. 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.

20. 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 Site Acceptance test (SAT) & 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.

21. STATUTORY APPROVALS

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

22. TESTS AND INSPECTION

22.1 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 SOR.



23. PRICE REDUCTION SCHEDULE (PRS)

Pursuant to cl. no. 27.1 of GCC – Work & Cl. No. 23 of GCC-Goods, the Price reduction schedule shall be modified to the following extent:-

23.1 Price Reduction Schedule shall be separately applicable for lots/ individual Dispenser, as required to be delivered/ commissioned as per order/ intimation given by BGL. 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

23.2 Price reduction schedule for supply shall be applicable on the value of undelivered/ incomplete delivered Dispenser package unit(s) as per complete week of delay or part thereof.

Note: Dispenser package shall be considered delivered only after receipt of Dispenser unit on FOT site, complete in all respect with all required parts & accessories.

23.3 Similarly, Price Reduction Schedule for Installation, Testing & Commissioning shall be applicable on Installation, Testing & Commissioning etc. value of incomplete Dispenser package unit(s), as per complete week of delay or part thereof.

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

23.5 Price reduction schedule to be applicable against individual release order with specific delivery/ completion period and not on the total ARC value. Delivery/ completion period will be counted from date of release of written intimation (Letter of Intimation).

24. BONUS FOR EARLY COMPLETION

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

25. LIEN

25.1 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. Bidder shall be required to submit Indemnity Bond as per format F-13 after award of work.

26. GOVERNING LAW

26.1 Laws of India will govern the Contract and Hyderabad courts will have exclusive jurisdiction or all matters related to Contract.

27. DEFECT LIABILITY PERIOD

Clause no. 20 of GCC-Goods (Guarantee) shall stand modified to the following extent:

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



27.2 The CONTRACTOR/ 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. 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 CONTRACTOR 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 CONTRACTOR or from his Contract Performance Security, or the proceeds of sale thereof or a sufficient part on thereof.

(): Defect liability period to be applicable separately against individual release order with specific delivery/ completion period. Hence, completion of work for supplies/work under different letter of intimation shall be different & accordingly, Defect liability period for supplies/ work done under different letter of intimation(s) shall be different & shall be counted from date of completion of work under corresponding letter of intimation.*

28. INSPECTION OF SUPPLY ITEMS

- 28.1 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.
- 28.2 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.
- 28.3 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.

29. SITE CLEANING

- 29.1 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.

30. COORDINATION WITH OTHER AGENCIES

- 30.1 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.



31.0 EXTENDED STAY COMPENSATION

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

32. INSURANCE

32.1 **Insurance for free issue material** All supplies at FOT site for Indian bidder shall be considered free issue material to contractor. Contractor 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. Contractor's quoted price shall be inclusive of all costs on account of insurance liabilities covered under the Contract. Contractor 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.

32.1 Insurance in India

32.2.1 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.

32.2.2 Any loss or damage to the equipment during 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.

32.2.3 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.

32.2.4 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.

- 32.2.5 Contractor will be required to submit documentary proof for the transit insurance before dispatch. **Insurance related clause stated elsewhere in the tender document shall stand modified to the extent stated at clause no. 40 above.**

33. PERFORMANCE EVALUATION

Contractors Performance will be evaluated from receipt of bid until completion of Works as per Bid document.

- 34.0 TRAINING OF PURCHASER'S PERSONNEL** Contractors shall train Purchase's Engineers as per the scope define in the Job specifications. 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.

35.0 QUALITY ASSURANCE / QUALITY CONTROL PROGRAMME

- 35.1 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.
- 35.2 The Vendor shall establish document and maintain an effective quality assurance system as outlines in recognized codes.
- 35.3 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 despatch of materials.
- 35.4 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.

36.0 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 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.

37.0 EVALUATION BASIS

Evaluation shall be done as per ITB clause no. 17 and as follows:.

The evaluation for award shall be made on total package wise (over all) basis.

Bidders to quote for full quantity against each item of SOR. The OWNER / CONSULTANT will evaluate and compare bids on complete package basis the bids as mentioned below:

The prices shall be compared on turnkey basis inclusive of all material supply and services with taxes/duties, cess including marine freight, marine insurance, and payment of custom duty, port clearance, inland transportation to site, all kind of insurance including transit insurance and complete site work as per bid document. The evaluated prices on over all basis shall be calculated as under

The evaluated price of domestic bidders shall include the following:

- i. Ex-works price quoted by the bidders for supply of equipment & mandatory spares (including packing, forwarding, taxes and duties, custom duties if any on components and raw materials but excluding inland transportation upto purchaser's site).
- ii. Excise duty on the finished goods.
- iii. CST / VAT on the finished goods (with/without concessional form 'C')
- iv. Freight / transportation charges upto project site
- v. Charges for Erection, Testing, commissioning & calibration, Performance test etc.
- vi. Charges for Annual Maintenance charges and/ or operation & maintenance (O&M) as per bid document
- vii. Loading on account of any technical parameters if specifically stipulated as a loading criteria in the bid document / material requisition.

Note:

- a. The evaluation shall be on total landing prices at project site basis as per above clause.
- b. Optional items(if any) will not be considered for evaluation.

Note:

37.1 Evaluation shall be done considering applicable rate of GST..

37.2 The lowest evaluated bid shall be considered for award for complete scope of work. However, the price quoted for 2 years Operational Spares shall not be considered for the purpose of arriving at the total price.

37.3 Bids not conforming to technical specifications / requirements shall be rejected.

38.0 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.



39.0 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.

39.1 ALONGWITH BID a) Time Schedule : The Completion Time Schedule for the work (including mobilization period) as per SCC, Vol I of II of Tender in all respect, from the date of issue of telex/telegram/letter/Fax of Intent. The Bidder is required to submit a Project Time Schedule in Bar Chart Form, alongwith 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 over all 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.

39.2 AFTER THE AWARD OF CONTRACT

- a) Overall Project Schedule The Contractor shall submit within 1 week of Fax of Intent/WO, a sufficiently detailed over all 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 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.

40.0 COMPLETION OF THE FACILITIES

40.1 Purchaser will take over the Work on its Completion.

41.0 STORAGE AND PRESERVATION

41.1 Supplier shall be fully responsible for safe custody, storage and preservation of all the supplies and materials/ equipments required for carrying out the work until handing over of the complete facility to the Purchaser at site at no extra cost. If required, materials / equipments shall be stored in Purchaser's designated store till further handing over the supplies, materials / equipments to supplier for installation, testing, erection of the equipments. After taking over the equipments/ materials from purchaser, supplier shall be fully responsible for safe custody, storage, insurance and preservation of all the supplies and materials/ equipments required for carrying out the work until handing over of the complete facility to the Purchaser. Further, activities like loading/



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unloading at store as well as at site, transportation of material, equipments, tools & tackels etc. until handing over of the complete facility to the Purchaser shall be arranged by supplier at no extra cost to purchaser.

42.0 HEALTH, SAFETY AND ENVIRONMENT (HSE)

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

43.0 INSTRUCTION TO BIDDER

43.1 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/ tackels 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 AMC and/ or Operation and Maintenance Work (as the case be) as specified in technical parts for the items stated in Price Schedule and in Technical Part.

43.2 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 rout is properly taken in to consideration. Supplier shall follow the packing, marketing and shipping instructions as per tender.

43.3 The quoted price shall be deemed to be inclusive of all applicable taxes & duties including GST, works contract tax, sales tax, local taxes, import duty, excise duty, octroi and other levies etc. 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.

44.0 LOCAL CONDITION

44.1 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.

44.2 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.

- 44.3 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.
- 44.4 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.
- 44.0 Other terms and condition will be applicable as specified else where in **General Condition of Contract and Instruction to bidder.**

45.0 ARBITRATION

- 45.1 Clause No.107.1 of GCC pertaining to Arbitration shall be replaced by the following.
- 45.1.1 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.
- 45.1.2 The Owner/ Consultant 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 anyone among them to act as the sole Arbitrator.
- 45.1.3 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 Owner/Consultant shall have discretion to proceed with the appointment of the sole Arbitrator. The decision of the Owner/Consultant on the appointment of Sole Arbitrator shall be final and binding on the parties.
- 45.1.4 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 proceeding shall be shared equally by the Parties. The arbitration proceeding shall be in English language and the venue shall be at **Hyderabad, India.**
- 45.1.5 Subject to the above, the provisions of (Indian) Arbitration & Conciliation Act, 1996 as amended time to time and the rules framed there under shall be applicable.
- 45.1.6 All matters relating to this contract are subject to the exclusive jurisdiction of the Courts situated in the State of Telanagana (India).



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45.1.7 Bidders /Suppliers /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 centres of International Commercial Arbitration. The United Nations General Assembly vide resolution 31/98 adopted the UNCITRAL Arbitration rules on 15 December 1976.

45.1.8 5th para of cl. No.107.1 of GCC , shall be modified as per the following:- “provisions of (Indian)Arbitration & Conciliation Act, 1996” shall be replaced by “provisions of (Indian)Arbitration & Conciliation Act, 1996 as amended time to time”

46.0 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 .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. Indemnity Bond to be executed by the supplier latest by the time of despatch of supply as per format F-13 to General Conditions of Contract.

47.0 RULES, REGULATIONS AND PROCEDURES

47.1 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.

47.2 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.

48.0 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.

49.0 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.

50.0 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.

51.0 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.

52.0 DOCUMENTATION

52.1 "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.

52.2 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.



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- 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.

53.3 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 alongwith 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 Sales tax authorities of state concerned.

54.0 DELIVERY BASIS

Date of Delivery: FOT site basis Date of RR / LR

55.0 POST ORDER CORRESPONDENCE: All post-order correspondence shall be addressed to: EIC, BGL, HYD

55.1 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 the afore said rules.

56.0 ANNUAL RATE CONTRACT CONDITIONS:

- i) BGL shall award the contract as per Schedule of Rates (SOR) in bid document as & when required during the validity of Rate Contract which will be **one year (01)** years from the date of Fax of Intent /WO on successful bidder. Item wise required quantities and completion period shall be informed to Seller by BGL by a firm 'Letter of Intimation' against subject Rate Contract during its validity.
- ii) Separate order (s) by firm 'Fax/ Letter of Intimation' will be placed for required quantities during the validity of Rate Contract. Price Reduction Schedule for delay in completion, Defect liability period and contract value for Limitation of Liability will be applicable for each order separately. Delivery period will be counted from date of release of Fax/ Letter of Intimation.
- iii) Employer envisages that there can be more than one projects at a time, accordingly contractor shall be required to work with all the project(s) simultaneously and each project shall be dealt with separately so that project (s) schedule can be adhered to and completed on or before the date of completion.

57.0 GUARANTY / WARRATEE:

If any trouble or defect, originating with the design, material, workmanship or operating characteristics of any materials, arises at any time prior to expiry of twelve(12) months from the date of commissioning of the equipment or prior to expiry of twenty four (24) months from the date of last shipment (against an individual intimation), whichever is earlier, first expire, and the SELLER is notified



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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 fulfill the foregoing guarantees.

58.0 REPEAT ORDER:

Repeat order upto 50% of contact value within 6(six) months from the date of basic order as per terms of bid document.

59.0 INLAND TRANSIT INSURANCE FOR PROCUREMENT OF GOODS:

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

60.0 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.



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SECTION – 8

MATERIAL REQUISITION



DESCRIPTION OF GOODS AND/OR SERVICES

Item	Quantity Unit	Description
1	15 Nos.	CNG Dispenser Packages – Supply, Erection & Commissioning.
		Design, detail engineering, manufacturing, assembly, factory testing, supply of dispenser including packaging, handling transportation of Dispenser, loading/ unloading at BGL sites, documentation etc. and providing all related services including installation, integration, site acceptance testing, trial run and drawings, documents and licensed software & hardware, converters, cables etc. confirming to BGL and providing Comprehensive AMC during Warranty period of 01 year as mentioned in specification enclosed with tender as per Rate Contract Terms and conditions.
		Erection, Testing, commissioning & calibration, guaranteed performance test of each supplied CNG CAR DISPENSERS at BGL locations inclusive of all required manpower, tools, tackles, spares if necessary etc., and as per directions of EIC.
		CNG Dispenser Packages – Comprehensive Annual Maintenance Contract.
		Lump-sum Comprehensive Maintenance charges of each supplied CNG CAR DISPENSER for 02 years after Post-Warranty inclusive of supply of all consumable, all spares & Manpower etc., and as per directions of EIC.

B. REMARKS / COMMENTS

1. General notes

VENDOR's compliance

Vendor shall submit his bid in full compliance with the requirements of this MR and attachments.

Vendor must include the following statement in his bid :

We certify that our bid is fully complying with your enquiry dated.....,and referenced.....

Compliance with this material requisition in any instance shall not relieve the Vendor to meet the specified performance.

2. Compliance with specification of his responsibility

The VENDOR shall be completely responsible for the design, materials, fabrication, testing, inspection, preparation for shipment and transport of the item strictly in accordance with the Material Requisition and all attachments thereto.

3. VENDOR's scope

In Vendor's scope of work is included the items with all internals and accessories shown on the data sheets, specifications and all unmentioned parts necessary for a



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satisfactory operation and testing except those which are indicated to be out of the Vendor's supply.

4. Inspection

Vendor shall appoint anyone of the following TPIA for inspection purpose after approval by consultant / purchaser:

- a) Lloyd Register of Industrial Services
- b) Technische UlierwachungsVerein (TUV) SUD South Asia
- c) International Certification Service Pvt. Ltd
- d) TQ Services
- e) Moody International (India) Pvt. Ltd
- f) Bureau Veritas (India) Pvt. Ltd
- g) SGS
- h) Quality Services and Solutions Pvt. Ltd.
- i) Velosi Certification Services
- j) Certification Engineers International Ltd

Apart from inspection by TPIA, inspection shall also be performed by BGL delegate, as set out and specified in the codes and particular documents forming this MR. No separate payment shall be made to vendor to TPAI charges. TPIA shall be borne by vendor and the shall include in the quoted rates.

5. Applicable documents

General prescriptions, requirements and information are listed in Material Requisition. Vendor shall supply the documentation as listed under Technical specification.

6. Applicable documents

Vendor shall supply the documentation as listed under point 12 of SCC.

All documents shall be supplied in English language.



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SECTION – 9

TECHNICAL SPECIFICATION



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SPECIFICATION FOR CNG CAR DISPENSERS

SECTION: A: GENERAL SPECIFICATION

1. SCOPE

- 1.1. Designing, Engineering, Manufacturing, Inspection & Testing at Works, Painting, Packaging & forwarding, Supply to Sites/Stores, Installation & Commissioning along with accessories and Performance Testing including on-site training to BGL personnel for max. 2 days at Sites of 15 nos. of CNG Car Dispensers complete with all auxiliaries & features required for efficient & safe operation, in accordance with this specification, data sheets & other enclosures of this Material Requisition.
- 1.2. Annual comprehensive maintenance services after successful completion of testing at site, commissioning & commencement of commercial operation of the dispenser for a period of 1 year during the warranty period, including manpower, all spares and consumables items.
- 1.3. Annual Maintenance service for a period of 2(Two) years after the warranty period including manpower, all spares and consumables items.
- 1.4. The Car Dispensers shall be complete including all required auxiliary equipment for efficient & safe operation as a whole. Vendor shall be responsible for furnishing all electrical, instrumentation, inter connecting Piping & Safety Items as required to make the Dispensers complete.
- 1.5. It is not the intent of Purchaser to specify every piece of equipment/item but nevertheless any item not specifically mentioned but required as per Good Engineering Practice and for the safe & trouble free operation of the dispensers deemed to have been specified & shall be in the scope of Vendor without any implication in the price or schedule.

2. INSTRUCTIONS TO VENDOR

- 2.1. The specification states the scope of supply and services as 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 scope of vendor.
- 2.2. Vendor may contact and obtain clarifications from BGL, if required, at any stage, before submission of offer.



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- 2.3. The offered dispenser units' model shall have certification for specified flow and accuracy from the Weights & Measurement Department. In case it is not available for dispenser unit than offered mass flow meter model shall have certification for specified flow and accuracy from the Weights & Measurement Department. Bids received without copy of such certificate(s) shall be liable to be rejected.
- 2.4. The offered dispensers for dispensing CNG shall be type approved by the Chief Controller of Explosives, Govt. of India as per latest Gas Cylinder Rules, 2016, its latest versions and its amendments if applicable
- 2.5. The offered dispensers for dispensing CNG shall be type approved by the Weights & Measurement Department
- 2.6. Vendor shall carry out Third Party inspection by Prior approval by BGL (as per attached List in Inspection under Material requisition-B.4) prior to despatch of Dispensers. TPAI charges shall be borne by Vendor.
- 2.7. The Vendor shall carry out modification required by the statutory bodies either during the approval or during inspection of the installation. All expenses shall be done and borne by the vendor. Unless the above formalities are cleared, supply part would be deemed incomplete.
- 2.8. The Vendor shall provide civil foundation/ dispenser frame drawings within two weeks of placement of order. Dispenser Frame shall supply along with the dispensers.
- 2.9. Any work, which is considered to be unsatisfactory and of poor workmanship shall be rectified by the vendor without any extra cost and time implications.
- 2.10. The approval from concerned Govt. Bodies in respect of complete installation of a CNG Dispensing Station shall be obtained by the BGL. Necessary Information/Data as may be required by Govt. Bodies shall be furnished by vendor to facilitate BGL in obtaining approval.

3. SCOPE OF SUPPLY FOR CAR DISPENSERS

Supply of double arm type Dispenser having flow capacity of > 15 kg/min for a single arm under discharge to atmospheric condition. Natural Gas shall not be used for pneumatic controls of Dispenser and Instrument air / Exe proof electronically controlled solenoid shall be used for such purpose. Instruments Air if required for pneumatic operation of Solenoid Valve suitable of Dispensers has to be provided by the Client at Dispenser end at a pressure of 7 to 9 kg/cm²g. The end connection for instruments air line will be ¼” Further tubing with necessary pressure reduction (if required), one pressure gauge with isolation valve for inlet pressure of instruments air line shall be provided by the bidder.

- 3.1. Each Dispenser shall have following as a minimum:-
 - 3.1.1. Two CNG flexible electrically conductive twin (fill & vent) hoses, with each one hoses fitted with NGV-I fill nozzle for filling of vehicles. However, both the two



hoses shall be suitable to be attached with either NGV or NZS-5425 nozzles by providing suitable approved SS fittings like hex nipple of required sizes etc. 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 4m long. Vendor shall demonstrate the function of breakaway coupling during performance test.

- 3.1.2. Two numbers of Coriolis true mass flow metering system with data recording system
- 3.1.3. Three rows liquid crystal backlit display for night viewing (Explosion proof backlighting / LED) showing total sale in Rupees (0000.00), quantity of gas sold in kg (000.00), unit price of CNG in Rs/kg (000.00) for each hose on both sides of the dispenser (total two sets of three rows for each Dispenser). There shall be a provision for shifting the decimal point through software. Display shall be IP 55 and shall show proper error code during shutdown.
- 3.1.4. Non-resettable and non-volatile totalizer up to 999999.99 for total CNG sold in Kg with an independent battery backup. Since these dispensers are used for custody transfer purpose, the totalisers should not reset in any eventuality not even in case of electronic failure. Reset to zero of totaliser shall be performed by the dispenser electronics automatically when the maximum value reached. Further details refer **Section B: Instrumentation & Control specification**.
- 3.1.5. One number of three banks electronic software and controller including hardware.
- 3.1.6. The dispensers would be fitted with "Preset Auto Cut off" arrangement. This arrangement would enable customers to preselect the fill total (in Rs.) before beginning filling process, allowing accurate shut off of the fill at pre-selected value. This would help in avoiding dealing in small change while taking the payments.
- 3.1.7. Two number 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.
- 3.1.8. Emergency stop switch on either side of dispenser and shall be easily accessible.ESD provision shall be made available for connecting to main interlock/ESD/ROV trip interlock.
- 3.1.9. Two nos. Of liquid filled 4" dia (0-400 Kg/cm²g) pressure gauges showing the vehicle filling pressure for each filling arm.
- 3.1.10. Two Nos. Bubble tight manual shut-off valve for fill hose.
- 3.1.11. One Stainless Steel body of cabinet thickness 1.6 mm with door/panel.



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- 3.1.12. Front/side mounted fill nozzle shall be supplied with lockable holder and safety lever / latch to firmly hold the fill nozzle when it is not in use.
- 3.1.13. Vendor has an option to supply the dispensers either with pneumatic or with Electrical operated solenoid operated full-bore bubble tight ball 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 BGL and during detail engineering. BGL has an option to choose the type of valve for supply of Dispensers. Vendor to ensure 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 unmeasured gas supply through dispenser in case of malfunctioning of ball valves.

In case of pneumatic operated Ball valve, the actuator and Ball valve assembly shall be fatigue free and retain tight shut off characteristics at least for 8000 operation hours. These actuators would be air fail to close spring-loaded type. Linkage with ball valve would be tamper proof by providing a sealed sleeve so that ball valve stem is not accessible from outside easily. Also, the actuator cannot be mechanically rotated from outside even though position indicator would be provided on its body. Venting of air would be passaged in such a way that venting of air cannot be obstructed either in the solenoid or in the actuator. The combination of SOV, pneumatic actuator and Ball valve would constitute power fail safe type. The whole system to be very fast acting and response time to be fraction of second so that if the flow is terminated at any point of dispensing, the slippage would be always within the accuracy limit.

The gas tubing inside the dispensers shall be seamless SS 316 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. The tubing shall be of Sandvik / FAE make. Valves shall be of Swagelok / Parker/Hylok makes. The fittings shall be of Swagelok / Parker/ Hylok/Dk-lok make.

In case of pneumatic operated full bore ball valve, the size of the air tubing inside the dispenser shall be 1/4" OD and shall be of SS 316 material.

- 3.1.14. Coalescent and particulate filter 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 < 5 ppm and particulate size is < 2 Micron and Moisture separator before Actuators so as to avoid failure/passing. Filter elements made of paper shall not be accepted. Vendor to provide appropriately plugged drain valve outside the dispenser housing with suitable tubing /arrangement to collect the drained oil. Filter size shall be in accordance with max flow through the dispenser. Vendor to provide & installed one liquid filled differential pressure gauge across the filter.



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- 3.1.15. 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 ball valves. Any unmetered gas passing shall be recorded in the dispenser is retrievable as and when required.
- 3.1.16. Any other item required for safe and accurate operation of Dispenser.
- 3.1.17. Any spare(s) required during commissioning shall be in the scope of vendor.
- 3.1.18. All tools & tackles required for Dispenser installation, commissioning & performance testing at sites.
- 3.1.19. Supply of complete O&M manual (along with instruments datasheet & schedule, bill of materials, instrument hook-up diagram, electrical wiring diagram, control logic algorithm & flowchart and certificates & user guide of bought out items) for each dispenser for easy operation & trouble shooting.
- 3.1.20. Supply of application program, ladder logic, list of error codes with description for programming the dispenser parameter.
- 3.1.21. If dedicated programming unit is required for programming/ parameter change. The same shall be included in the supply.
- 3.1.22. Supply of drawings & documents.
- 3.1.23. Instrumentation & Electrical items specified in section B & C of the Job Specification. All electrical equipments shall be supplied with double compression type of cable glands tested & certified to be used in hazardous area classified as Zone-I.
- 3.1.24. On-Site Training to BGL personnel (Max. 02 days).

4. SCOPE OF SERVICES

- 4.1. Design & engineering
- 4.2. Manufacturing & Assembling
- 4.3. Procurement from Sub-vendors.
- 4.4. Inspection & Testing at Works.
- 4.5. Documentation and obtaining statutory approvals from the country of origin.
- 4.6. Packing, Forwarding and Transportation up to Job Sites/BGL's stores.
- 4.7. Testing and commissioning, after site installation, of each Dispenser, individually.



- 4.8. Apply post-order and do necessary follow-up for obtaining weight & measure certificate for offered dispenser unit's model.
- 4.9. Submit/ apply for obtaining type approval for the offered dispensers from Chief Controller of Explosives, Govt of India as per the provisions of Gas Cylinder Rules, Latest.

5. EXCLUSION

- 5.1. Civil Foundation
- 5.2. Trenches for pipes

6. Experience Record Schedule for Dispensers

Sr. No.	Parameter	Information on offered Model
1.	Number of Units	
2.	Fluid handled	CNG
3.	Gas molecular weight range	
4.	Site min/max temp.	1.7/47.5 °C
5.	Dispenser rated flow	
6.	Dispenser overall Cv	
7.	Dispenser batch accuracy %	≤ ± 1.0%
8.	Dispenser with temperature Compensation	Yes
9.	Number of Hoses	Double arm
10.	Mass flow meter make/model.	
11.	Where dispenser is located: Address and fax/telephone number of contact person.	
12.	Any other information on Installation	
13.	Date of commissioning of Dispenser	
14.	Number of hours completed as on bid due date.	
15.	Major problems encountered, if any	
16.	Mass Meter Accuracy	± 0.5%



7. DESIGN BASIS

7.1. Area Classification

For details refer Electrical Specification at section-C attached with this Job Specification.

7.2. 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 Job Specification/M.R. or which are required to be complied with as per the prevailing Government of India regulations shall also be followed.

7.3. ***Precedence***

In case of any conflict between Job Specification & other documents, the following order of precedence shall apply:

- Data sheets.
- Job Specifications.
- Indian Standards/Codes as applicable, International Standards/Codes as applicable.

7.4. ***Gas Compositions to Be Handled by Dispensers:***

GAS COMPOSITION		
	Normal Gas Composition	Design Gas Composition
C1	84.5 – 98.77	89.0
C2	0.069 – 9.00	5.0
C3	0.03 – 4.00	1.5
C4	0.00 – 2.00	0.5
C5	0.00 – 0.35	0.35
C6	0.00 – 0.15	0.15
C7	0.00 – 0.00	0.00
CO2	0.00 – 4.5	3.0
N2	0.05 – 1.25	0.5
Total	100	100
Average C.V. (kcal/SCM)		

NOTE:

Oxygen – Max. 0.5% b y mole.

Total Non- hydrocarbon – Max. 2.0%

Total Sulphur including H2S max – 10ppm by weight.

Water Content range: 112 to 144 Kg/ MMSCM

7.5. ***Safety***

7.5.1. All Electrical devices shall meet the requirement for the area classification specified under Cl. 7.1 above.

7.5.2. Tubing & other devices shall be so arranged that there is proper access for operation & maintenance.

7.6. ***Location***

All the Dispensers shall be suitable for Outdoor installation without roof/shed.



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8. TECHNICAL SPECIFICATIONS for dispenser

- 8.1. 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 BGL's review and approval.
- 8.2. The specifications of FLOW METER are described under Instrumentation & Control Specification Section-B attached with this Job Specification/Material Requisition.
- 8.3. The Car dispensers shall be designed to handle flow rate of ≥ 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.
- 8.4. 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.
- 8.5. The normal operating pressure of CNG at dispenser inlet shall be 250Kg/cm² (g). However, supply from dispenser to the Car shall get positively cut off at outlet pressure of 200 Kg/ cm² (g) to ensure the safety of the vehicle.
- 8.6. 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.
- 8.7. The normal operating temperature of wetted parts of dispenser shall be (-) 10 °C to 60°C.
- 8.8. The Dispenser shall automatically and immediately shut-off CNG supply to fill hose individually in case of:
- Power failure or excursion beyond permissible limit.
 - Loss of display
 - Power failure of mass meter
 - Failure for metering
 - Flow beyond high and low limits
 - Failure of totalizer
 - Overfill by quantity and/or pressure
 - Failure of pressure sensing transmitter
 - Passing of Pneumatic ball valve / electro valve



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- Repeated operation of reset or start/ stop switch.
- Removal of any electrical wire connected to controller.
- Program step is in hold due to any error.

8.9. Cabinet

8.9.1. Complete cabinet shall be of Stainless Steel (SS-304) with door/ panel and shall have tamper proof locking arrangement. Cabinet wall thickness shall not be less than 1.6 mm. Cabinet shall be sized to accommodate all electrical, electronic and mechanical components for metering and display within the cabinet. Cabinet shall be designed to protect all tubing, pressure gauges, valves, fittings, electrical & electronics item from tampering, rain, dust, vermin etc. Dispenser cabinet shall be provided with adequate size bottom opening for the entry of gas supply line/lines and power supply connections. Adequate ventilation shall be provided so that there is natural convection current and cooling takes place inside. Cabinet shall be structurally robust and should not resonate at the frequencies emanated during normal flow or during choked flow through the nozzles, breakaway coupling or valves etc.

8.9.2. 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 to all parts and maintenance becomes easy.

8.9.3. BGL's Logo and name to be displayed on both sides of dispensers, in BGL approved colour scheme. BGL'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 BGL'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.

8.9.4. The dispensers shall be shipped in fully wired and assembled condition. Only gas, air supply and power supply connection shall be made at Site.

8.10. Hi-Mast shall be of appropriate height and shall allow free movement of flexible hose, prevent strain on the fill hose connection and avoid touching of ground.

8.11. Fill Hose & Fill Nozzle

8.12. 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.

8.12.1. One fill hose shall be fitted with NGV-I nozzle along adaptor and second hose fitted with NZS-5425 fill nozzle for filling of vehicles. However, both the two hoses shall be suitable to be attached with either NGV or NZS-5425 nozzles by providing suitable approved SS fittings like hex nipple of required sizes etc. The nozzle shall meet the requirements of NGV-1 Type-2, Class A nozzle. Vendor



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shall include the supply of 3-way valve with each hose for Filling & venting of gas. Vendor shall also include supply of Breakaway Couplings both for Fill and Vent hoses, suitable for NGV Industry, in the hose. Hose shall be 3/8" ID 5000 psig, at least 4m long. Vendor shall demonstrate the function of breakaway coupling during performance test.

Vendor shall provide the test certificates of fill hose assembly.

8.12.2. 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.

8.13. Dispensers should be ergonomically designed.

9. DATA SHEETS

Vendor shall fill up data the as per enclosed Data Sheet, attached with this job specification and submit along with bid.

10. CLIMATIC CONDITIONS

- The climatic conditions to be considered for selection, design and derating of equipment shall be as indicated below:
- Amb. Temp min/max⁰C : 7⁰C / 47.5⁰C
- Design wet bulb temp (WBT), ⁰C : 27⁰C
- Design relative humidity % : 90
- Altitude above MSL, M : 12
- Wind velocities km/hr (max) : 160

11. UTILITY SPECIFICATION

11.1. *Electric Power Supply*

Single phase, AC, 230 Volts \pm 10%, 50Hz \pm 3% will be provided by BGL. 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 24 VDC 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 and indicate the maximum and minimum tolerable values of voltage for accurate metering and safe operation of dispenser. Vendor to include suitable voltage conditioning unit in their scope, if required.



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For further details refer Electrical Specification, Section-C, attached with this job specification.

11.2. ***Instrument air (if required)***

Instrument air pressure range: 5-15 Kg/cm²g. Necessary air regulator shall be in the scope of the vendor.

12. INSPECTION AND TESTING

12.1. ***At Vendor's Works***

Vendor shall appoint anyone of the TPIA which are listed in M.R. for inspection purpose after approval by BGL. No separate Payment shall be made for TPAI by BGL. Vendor has to consider the applicable TPAI charges during quoting the tender itself.

Apart from inspection by TPIA, inspection shall also be witnessed by BGL delegate if required, as set out and specified in the codes and Technical specifications.

12.1.1. 'The following activities shall be covered under inspection:

- 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 CCOE, 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.

12.1.2. Functional Test

All the dispensers shall be tested to demonstrate the functioning of all the components and controls.



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12.1.3. Performance Test

All the dispensers shall be performance tested for flow capacity, measuring accuracy and dispenser functioning with CNG. CNG shall be arranged by vendor.

12.1.3.1. 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.

12.1.3.2. During the shop testing if the dispenser batch accuracy is found beyond $\pm 1.5\%$ dispenser shall stand rejected.

12.2. At BGL Sites

All the dispensers shall be tested by vendor for their function & performance in presence of BGL authorised representative. Any part or components, which are not functioning to the satisfaction of BGL, shall be repaired or replaced by the vendor without cost & time implication to purchaser and performance test again carried out.

12.3. Performance Guarantee

12.3.1. The vendor shall guarantee the satisfactory performance of each dispenser as per the operating parameters indicated in data sheets. The dispensers shall be performance tested after installation at site by vendor. Vendor shall carry out tests as required by Govt. Statutory Agencies.

12.3.2. Guaranteed Performance for the Dispensers shall be as follows:

- Flow Rate (≥ 15 kg/min for Car Dispenser).
- Batch Accuracy of $\leq \pm 1.5\%$

In case above guaranteed parameters are not achieved at site, vendor shall carryout necessary rectification/modification to achieve the guaranteed parameters, without cost & time implication to the purchaser.

13. VENDOR DATA REQUIREMENT

Vendor data requirement shall be as per attached specification Annexure-2.

14. PACKAGING

The dispensers shall be packaged to withstand rough handling during in-land journey. It shall be vendor's responsibility to make good any deterioration that occurs during shipment. Sling points shall be clearly indicated on crates.

15. COMMISSIONING OF DISPENSERS

Vendor shall carry out commissioning of Dispensers within 3 days of receipt of intimation from BGL.



16. SCOPE OF WORK FOR COMPREHENSIVE MAINTENANCE OF DISPENSERS

GENERAL

All spare parts required for replacement/rectification of faulty parts, consumables etc. required for smooth operation and carrying out preventive / any type of maintenance shall be in the scope of supplier.

All tools, tackles and fixtures required for carrying out the maintenance of the dispenser shall be in scope of the bidder. The scope will also include handling equipments required during the any maintenances activity. At the end of AMC contract Bidder will handover all tools and tackles required for smooth operation and maintenance to the owner.

The Bidder 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 company shall have no obligation in this respect. The Owner shall not be responsible for providing any medical assistance to the contractor personnel.

The Bidder shall be responsible for the discipline and good behavior of all his personnel deployed in the services.

The contract shall arrange to supply/renew identity card to his workforce at his own cost, Those Bidder's personnel shall be required to carry their respective identity cards while on duty and produce on demand.

The Bidder shall deploy adequate number of technicians / supervisors/ Engineers / helpers as well as tools and equipment for smooth and proper operation and maintenance of the dispensers supplied in terms of the contract. In case required to meet operational requirements, the Bidder shall augment the same as per direction of Engineer-in -Charge.

The Bidder 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 and around the clock.

The Bidder 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. Bidder 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 Bidder for maintenance services at CNG installation shall be of sound relevant technical professional expertise, which is otherwise also essential from the safety point of view of the personnel of the Bidder as well as for the installation.

Bidder has to ensure the safety of man and machine all the times. Damages of



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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 Bidder shall make his own arrangements to provide all facilities like boarding and transport etc. to his workmen.

All personnel of the Bidder entering on work premises shall be properly and neatly dressed and shall wear uniform, badges and personnel protection equipments (PPE) like helmets, ear plugs etc. while working on premises of the company including work sites. The colour and design of uniform shall be approved by BGL.

Bidder shall maintain proper record of his working employee's attendance and payment made to them.

The Bidder will strictly adhere to all the safety rules and regulations prevailing and applicable from time to time at the installations as directed by BGL.

All arrangements for communication from control room to the contract person working on job under the services shall be the responsibility of the Bidder viz. pagers / mobiles / walky-talky.

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 hours station wise with analysis shall be submitted to CNG control room on a fortnightly basis both in hard and soft form as per BGL format.

**COMPREHENSIVE ANNUAL MAINTENANCE OF DISPENSER
PACKAGES**

Any correspondence required to be made with the principal company or OEM or various offices shall be made by the bidder or bidders agent. All arrangements like phone, fax, computer, Internet etc required for above correspondences shall be arranged by the bidder at his own cost.

The periodic maintenance required to be done as per OEM recommendation shall be taken up promptly. The bidder shall provide the detailed preventative maintenance schedule along with

- a) Estimated down time required for each type of maintenance schedule.
- b) List of spares and their quantities required for each type of maintenance schedule per Dispenser.
- c) Type and number of man days required for each type of maintenance schedule per Dispenser.



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The bidder shall plan such maintenances during non-peak hours and in consultancy with the Engineer In Charge (EIC) of BGL. 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 BGL representative during maintenance. In case, the schedule maintenance of the OEM manual recommends to check and replace parts like filter, valve repair kit, display, reset switches etc. after certain time interval, same shall be replaced or used further only on approval from the BGL representative. However any untoward consequences for non-replacement of such parts shall be the responsibility of the bidder and spares, repair required to put back the unit into operation will be to bidder's account.

All routine and periodic checks / inspections required to be done as per OEM recommendation shall be done by the bidder. Instruments required for above inspection like vernier caliper, micrometer screw gauge, fill gauges, bore gauge etc shall be in scope of the bidder and these instruments shall be calibrated every year.

The 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 BGL representative and submitted immediately after carrying out the maintenance. Service report format shall be approved by BGL.

The EIC will be final authority to take decision with regards to maintenance or replacement of parts or any disagreement between the bidder and BGL, during the execution of the contract.

The bidder shall carry out 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.

**17.0 COMPENSATION FOR NON-FULFILLMENT OF OBLIGATION UNDER
ANNUAL MAINTENANCE CONTRACT & PENALTY**

17.1 During the one-year warranty period and 2-year post warranty period the Contractor must ensure that the dispenser is performing required services as defined in the contract documents well round the 24 hours a day & 365 days. During AMC services if dispensers break down any time then Client have right to impose penalty as defined in Contract

17.2 Penalty: If the Contractor fails to provide the required services any time more than 6 hours & upto 12 hours, the contractor would be penalised Rs. 1000/ per day and for more than 12 hours for any day, compensation shall be imposed, which will be



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@Rs.100/- per hour per arm per dispenser. In any case the dispenser has to rectify within 24 hrs with all possible effort.

The day start will be considered from 0000 hrs for the calculation purpose. Contractor shall be allowed 24 hours downtime of the each arm of dispenser per month to carry out the periodic /scheduled / breakdown maintenance/ routine checking of dispenser package. This can be adjusted considering the penalty clause as define above only once in a month. In case Contractor has utilized less down time of the dispenser package than that allowed, the Contractor could carry forward only max unutilized 12 hours downtime to immediately next month.

In any case, the maximum penalty imposed in a month for non- performance of the equipment would be limited to 70 % of the amount of Maintenance charges to be paid to the contractor per month per dispenser. A logbook for time record shall be maintained in the Central control room wherein the records shall be made for the time Dispenser develops trouble and the time at which the Contractor rectifies the same and Dispenser put back to service.

17.3 The penalty clause and maintenance charges will come into force immediately after successful performance test as defined in the tender.

17.4 In case of any complaint regarding non-fulfilment of any obligation under the contract, Client reserves the right to withhold payment to the Contractor and out of such amount and the security deposit which may held, Client can make such payment as it may consider necessary for smooth and unhindered working of the contract.



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SECTION: B: INSTRUMENTATION & CONTROL SPECIFICATION

SCOPE

The purpose of this specification is to define the minimum general requirements and philosophy of instrumentation & control for the dispenser package of BGL.

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 BGL 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 as a part of 1.4 a) above.

In case of further clarifications, bidder shall obtain clarification/confirmation from BGL before proceeding.

All instruments must be procured from BGL approved vendor as per Annexure-1. However for those instrument/equipment, which are not covered in the list, the sub vendors shall be approved by BGL.



BID PROPOSAL

The bid proposal shall be accompanied by the following as minimum for technical evaluation of offer.

- a) Filled in data sheet of all instrument.
- b) Deviation list.
- c) Write up on control philosophy.
- d) Power supply consumption for each item & type of power supply whether earthed/ floating.
- e) Utility requirement & consumption.
- f) Weights & Measure (W&M) Certificate for Mass Flow meter
- g) CcoE approval for explosion proof enclosure for all electrical & electronic instruments.
- h) Type approval certificate from Chief Controller of Explosives, Govt. Of India.
- i) type approval of dispenser from legal Meteorology

DESIGN PHILOSOPHY

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.

Mass flow meter shall be Coriolis type and shall conform to AGA 11 draft standard.

Each and every mass flow meter 'zeroing' shall be done before delivery from vendor's works.

Mass flow meter design considerations, piping, meter, zero verification and proving facility shall be as per AGA 11 draft standard.

For offered Mass flow meters, vendor shall apply post-order and do necessary follow-up for obtaining Weight & Measure (W&M) certificate from statutory authority of India.

All tube fittings & pipefitting shall be leak proof & shall be Swagelok/Parker make and suitable for pressure ratings. The tubing shall be of Sandvik / FAE make and suitable for pressure rating.

Control valve, actuator and solenoid valves shall be of conventional type design, no integral design is acceptable.



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Control valve body and trim materials selection shall be done by the bidder to ensure that there is no erosion, cavitations and flashing. Trim & seat shall be fully stellite.

SPECIAL INSTRUCTION TO VENDOR

Supply of Car dispenser with two arm of flow rate > 15 kg/min under differential pressure of 200 kg/cm² g.

Each dispenser arm shall have Coriolis type mass 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.

Three rows liquid crystal backlit displays for night viewing (Explosion proof backlighting / LED) showing total sale in Rupees of (000000.00), quantity of gas sold in Kg.(000.00), unit price of CNG in Rs/Kg (000.00) for each hose of the dispenser (total two sets and three rows for each dispenser). Each Side must have displays of Three rows liquid crystal backlit display to display both the arms readings. There shall be a provision for shifting the decimal point through software. Display shall be IP 55 and shall show proper error code during shutdown.

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 and shall not be with the Mother board or power supply board. 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.

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 in any eventuality not even in the case of electronic failure. Dispenser electronics shall be common for both totalizers.

Totalizer figure would be displayed only when it is recalled through keypad or some device integral to dispenser. The totalizer value would cover up to the last transaction details at the time of recall. These 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 keys can be used even when the filling is on without affecting up-counting/real time data.

A programming, tuning, adjusting of the controller would be through dedicated software residing to a PC with the Windows OS. For this purpose a dedicated RS485 port to be made available to the dispenser. 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. For this purpose vendor shall supply a licensed multi-user software and OS in English. All necessary software shall be provided for calibration of transmitter from control room. Vendor to provide Manuals & troubleshooting guides of OS & software and a hard copy of application program.

Dispenser shall be capable of communicating with outside system using the open system architecture/protocol. It should be possible to transfer the data through twisted pair wires,



transaction data as also flow meter data (both process and diagnostic) to RTU of SCADA. RTU and inter connecting cable shall be provided by BGL. Detailed requirement of SCADA is as follows:

Parameters required for SCADA

We want to monitor / control following parameters through SCADA system.

- a. Mass Totaliser from Dispenser Motherboard
- b. Mass Flow per Filling
- c. To Read Gas Selling Price from Dispenser
- d. To download the gas selling price into the dispenser from SCADA system
- e. Mass Flow Meter Status
- f. Tripping Status Dispenser
- g. Reset Switch Operation Status
- h. Dispenser Power Supply Status
1. Hardware Details: Connector Type, Communication Standard, Communication port Pin details,
2. Communication Port Configuration: Baud Rate, data bits, stop bit, parity
3. Polling Constraints: Minimum time period between two consecutive poll cycles.
4. Protocol Details: Protocol name and message structure for different read / write functions.
5. Function codes for reading digital and Analog inputs
6. Function code for writing analog values in the IED registers
7. List of parameters available in the IED which can be accessed from the IED through serial port.
8. Register address of each parameter in the IED.

A Sample of the details is given below for understanding:



PROTOCOL DETAILS:

Sr.No.	Description	Content/Details
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
7	Port Configuration	Speed - 19,200 bps Data Bits – 8 Bits Stop Bit - 1 Bit Parity - None
8	Min. Time period between consecutive Query	2 Sec.

- PORT PIN Details:

- Example: RS232 Pin Details:

IED : SCADA
 RJ45
 1.GND : GND
 2.DTR :
 3.RTS :
 4 TX : RX
 5 RX : TX
 6 CTS :
 7 DCR :
 8 DCD :

- Function Code & Message Structure:

Function Code : 3 – Read Output Register
Poll Format
 Address : 1 Byte
 Function : 1 Byte
 Start Item : 2 Byte



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NO. ITEM2 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. ITEM2 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:

1 Digital Parameters:

Sr. No.	Description	Address
1	Flow computer malfunction Alarm	8247
2	Mass Flow Low alarm	8245
3	Mass Flow High alarm	8246



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Parameter	Register details			
	Engineering Range and Unit	GC Register	Register Format	
Density	Kg/m ³ (500-600)	8655-56	Float	
Pressure		8657-58	Float	
Temperature		8659-60	Float	
Mass Flow Rate		8661-62	Float	
Totalized mass flow		8663-64	Float	
Yesterday's Total Mass flow		8665-66	Float	
Today's Total Mass Flow		8667-68	Float	
Corrected volumetric Flow rate		8669-70	Float	
Yesterday's Total corrected Volumetric Flow		8671-72	Float	
Totalized Mass Flow at 6 AM(Snapshot of cumulative)		8673-74	Float	

One number of three bank electronic software and controller including hardware. Vendor shall include either with pneumatic or electrical operated solenoid operated full-bore bubble tight ball valve made of ANSI 316 SS for dispensing of gas. In case of pneumatic operated ball valve, actuator would be air fail to close the valve. However, in both the cases, vendor to ensure 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 ball valves. The actuator and ball valve assembly shall be fatigue free and tight shut off characteristics at least for 8000 operation hours. Bidder to include necessary serial port for printing the sale data.

Two number of liquid filled 4 dia. (0-400 kg/cm²g) 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.

Temperature compensator to limit fill pressure to an adjustable value (with normal value 200 Kg/cm²g) equivalent at 15 degree C. A temperature compensation facility button shall be provided to enable or disable the temperature compensator.

To limit fill pressure to 200 Kg/ cm² g, Vendor to provide the following options per hose / arm of the dispenser:



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- 1 One number of pressure limiter (electronics transducer) (with adjustable value up to 250 Kg/cm² 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/cm²g differential pressure.

Back-up Power supply for displays so that display remains at least for 15 minutes after power failure. Vendor shall provide battery backup of 72 hours to the RAM of dispenser controller. Hardware such as Prover for measuring the Accuracy of Dispensed quantity for W&M certification shall be supplied to BGL.

All parameter setting shall be password protected. Facility of change of password also to be provided to enhance the security of password.

FLOW METER

Principle of mass metering:	Coriolis
Approval	ATEX/CSA/FM/CENELEC/SEV
W& M	Statutory authority of Country of Origin and from Ministry of Consumer Affairs, Govt. Of India.
Output to dispenser	RS 485/ Frequency
Output to be available programmed	RS 485/ Frequency / Analog duly
Max. Flow rate:	≥ 15 kg/min
Mass Flow accuracy for gas meter:	+ 0.5% (inclusive of linearity, hysteresis & repeatability errors.)
Mass flow meter (indicating type): type	with totalizer of non-resettable
Calibration traceability:	NIST
Repeatability:	+ 0.25%
Enclosure	Certified W.P. to IP 66, NEMA 4 & EX.PROOF (Display boards fitted on dispenser with IP 66 level of protection)
Pressure rating of wetted Parts:	5365.605 (5200psig) AT 25°C as per ASME/ ANSI BV 31.3
Process Temperature effect:	Nil



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Surge and frequency Transient effect: Shall be in compliance with ANSI/EEE (EFT) c 6241 (1991)

EMI effect on sensor and Transmitter: To the requirement of EMC directive 89/336/EEC, EN 50081-1(JAN.'94).

Vibration effect: As per SAMA PMC 31.1 – 1980, Condition 2.

Mass Flow Meter shall have diagnostic facility to check live zero, configurable parameter, constants etc. Through Laptop.

Each flowmeter should be provided with a liquid crystal display (LCD) for ongoing flow monitoring and totaliser. Flow meter signal shall be considered as the highest level of interruption. It shall not be possible to fill any vehicle cylinders by repeated operations of reset switches.

Provision for sealing/locking of Mass Flow Meter / Transmitter shall be provided to avoid possibility of tempering during use of Dispenser.

Vendor should include one set necessary system and application software with hardware including communication cable / converter etc. With licensed required for calibration and faultfinding diagnostics of Mass Flow meter Electronics through Client's Laptop.

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.

The batch accuracy of dispensed gas shall be within $\pm 1.5\%$ or better.

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.

Normal operating inlet pressure of dispenser shall be 220-250 Kg/cm²g. The dispenser supply to the vehicle shall be positively cut off at outlet pressure of 200 Kg/cm²g.

Normal operating temperature of wetted parts of dispenser shall be -10 to 60 deg.C.

Dispenser shall automatically and immediately shut-off CNG supply to fill hose individually in case of:

Power failure or excursion beyond permissible limit.

Loss of display.

Power failure of mass meter.

Failure of metering.



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Flow beyond high and low limits

Failure of totalizer

Overfill by quantity and / or pressure.

Failure of pressure sensing transmitter.

Passing of Pneumatic ball valve / electro valve.

Repeated operation of reset or start / stop switch.

Removal of any electrical wire connected to controller.

Program step is in hold due to any error

Vendor shall confirm that any momentarily flow of gas shall be registered in mass flow meter totalizer and simultaneously in dispenser totalizer. Vendor shall envisaged a temper proof design. Dispenser shall generate error signal in case of passing valve with date and time and display on the dispenser LCD.

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.

Complete control loop would be so fast that if the filling is terminated at any point of filling, the flow would stop immediately.

Reset switch assembly should be suitable for failure free operation and the same shall be supported with proper PTR for CNG duty.

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.

In case the power supply is beyond acceptable limit the dispenser shall not start at all. The controller shall provide an operational alarm and it shall be displayed on LCD display.

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.

A Provision shall be available in dispenser unit, which shall be suitable for programmable/changeable filling pressure from 180kg/cm²g to 220kg/cm²g in vehicle. Original filling shall be same as defined elsewhere in data sheet.

Emergency stop switch shall also be provided on either side of dispenser and shall be easily accessible.



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DATA RECORDER:

The dispenser should have an inbuilt Automatic Refueling Data Recorder unit for the each independent refueling line. The dispenser system should be capable of storing up to 1,250 refueling transactions data with date & time stamping and such data should be downloaded frequently into another portable computer with compatible Microsoft software (software in CD to be provided by Supplier together with the license) to store the transactions data. This information can either be down loaded as a report from a POS system of client through RS 485 communication. Vendor shall provide battery backup of 72 hrs to the RAM of dispenser electronics independent refueling line.

The dispenser electronics software should be capable to print all alphanumeric refueling data (as stated below) of each fill point of the dispenser as a receipt for the respective vehicle through the point of sale (POS) Computer / printer (both of client) and shall generate the cash receipt for each refueling operation. The Communication port for the interconnection of dispenser to POS shall be available in the dispenser and shall be intrinsically safe. Following information required on the receipt for each refueling:

- Vehicle Identification Number.
- Quantities of gas dispensed in kg (4 digits in 2 decimal points i.e., 00.00).
- Unit cost of gas dispensed in Rupees, Rs/kg (4 digits in 2 decimal points i.e., 00.00).
- Complete transaction value in Rs (6 digits in 2 decimal points i.e., 0000.00).

One number Non-resettable and non-volatile inbuilt totaliser up to 999999.99 (8 digit and a decimal) for total CNG sold in KGs (Total refueling transaction) with an independent battery backup shall be provided for each dispenser. The display should have facility to read previous batch reading even after power off/ failure. The dispenser electronics totaliser shall get updated continuously with each batch filling and must retain the transaction value even after power supply off/failure any time during online filling cycle.

The dispenser parameter setting shall be password protected. Facility of change of password also to be provided to enhance the security of password

OVERFILL PROTECTION

Overfill protection shall be through electronically programmed hose to terminate the fill after 200 Kg/cm²g. Vendor shall include either 2 nos. Transducers per hose or 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 220kg/cm²g with resetting at 215kg/cm²g. Relief valve setting to be adjustable from 205kg/cm²g to 240kg/cm²g with resetting at 200 to 235 kg/cm²g respectively. Calibration certificate shall be provided.

ELECTRONICS

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



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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.

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.

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.

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.

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

Vendor shall provide a common processor and RS 485 port for RTU SCADA for Car dispenser. 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.

TUBING

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. The tubing shall be of Sandvik / FAE make. Valves shall be Parker/ Swagelok/ Compac make & fittings shall be of Parker/Swagelok make.

CERTIFICATION:

- a) Equipment/instrument/systems shall be certified for use by statutory authorities for their use in area of their application.
- b) For all intrinsically safe/flame proof equipment/instruments/systems, certification by any approving authority like BASEEF A, FM, UL, PTB, LCIE, Chief Controller of Explosives (CCOE), India is mandatory.

For offered mass flowmeters, separate dedicated transmitter with display type totalizer (of the same make as mass flow meter) shall be provided by vendor. Mass flow transmitter signal shall be wired to the motherboard used in the dispenser. Mass flow meter signal directly to the motherboard without transmitter is not acceptable".



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Bidder to provide two nos. of non-resettable and non-volatile totalizers per hose of dispenser i.e. one integral digital totalizer with display along with mass flow meter transmitter. Second totalizer of liquid crystal backlit display in kg (999999.99) on front panel of dispenser.

The configuration data for the offered mass flow meter should be stored in a nonvolatile memory or in a dedicated battery backed RAM such that this remain unchanged because of power fluctuations or power off conditions. In case mass flow meter vendor standard instrument has battery backed RAM, vendor must indicate the protection time and battery life in their offer.

Make of Mass Flow Meters

Emerson Process Management (Micromotion) – CNG 050 with transmitter

COMPAC KG 80

REJECTION CRITERIA.

During the shop test of dispenser, in case the dispenser flow capacity from inlet to 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. "Separately, the Mass flow meter accuracy shall be $+ 0.5\%$ (inclusive of linearity, hysteresis & repeatability error) and the repeatability will be $+ 0.3\%$ or better.

The bids received without the certification from the Weights and Measurement department of the Country of origin for offered mass flow meter (Coriolis type) as well as of dispenser model as per specifications shall be rejected. In case country of origin of mass flow meter does not issue weights and measure certificate then the same shall be provided from approved agency for weights and measure from other country.

EXCLUSION

Vendor's offer shall exclude following:

- a) Instrument air

VENDOR DATA REQUIREMENTS

Vendor data requirement shall be strictly as per Annexure – 2 & 3 this job specification.

INSPECTION AND TESTING

Functional and simulation test for the following shall be carried out at vendor's works and shall be witnessed by BGL/Third party.

Control panels along with all instruments mounted in it.



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Following tests shall be carried out by bidder at his works or his sub-vendor's works and test certificates shall be furnished.

Calibration/test certificates for all instruments, control valves & safety valves.

Seat leakage test for control valve and safety valve.

Test certificates for safety valve set pressure and reset pressure.

RT certificates required if valves are made of welded assembly and Hydrostatic certificates are acceptable for the control/safety valves for forged made for control valve and safety valve used for ANSI 600 lbs and above rating.

Material test certificates for all line mounted instruments.

Sub-vendors conformity certificates.

ENVIRONMENTAL AND SITE CONDITIONS ARE AS FOLLOWS

Temperature:	Minimum:	7°C
	Maximum:	47.5°C
	Maximum Shed:	47.5
	Relative humidity:	90% Non condensing

LIST OF ATTACHMENTS

Instrument Job specifications for Dispenser

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
- Pressure Transmitter
- PTR format for Mass Flow meter



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- 2.0 CODES AND STANDARDS
- 3.0 AREA CLASSIFICATION AND EQUIPMENT SELECTION
- 4.0 EQUIPMENT SPECIFICATIONS



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 Chief Controller of Explosives.
- 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:

Statutory Regulations.

ii) Codes and Standards.

Owner's concurrence shall, however, be sought before taking a decision in the matter.



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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.
- 3.3 Electrical equipment for hazardous areas shall be certified by CMRI and approved by CcoE (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.



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- 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 BGL 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 BGL. 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. 47.5 °C & Min. 1.7 °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.

Name of the manufacturer, type of enclosure protection and certificate no. With name of testing/Certifying agency shall be furnished with bids / for approval



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DATA SHEETS



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SR. NO.	PARAMETER	SPECIFICATION	OFFERED
1.0	Dispenser	Car	
1.1	Make		
1.2	Model		
1.3	Normal Inlet Pressure Kg/cm ² g	250	
1.4	Maximum Fill Pressure Kg/cm ² 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	-	
1.12.3	Pressure Rating Kg/cm ² g	250 Kg/cm ² g	
1.13	Flexible fill & vent hose	Double	
1.13.1	Type		
1.13.2	Make		
1.13.3	Pressure Rating Kg/cm ² g		
1.14	Sequential filling	Three bank	
1.15	Mass Flow Meter		
1.15.1	No. of metering lines	One 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	
1.18	Data Recorder	YES	

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.



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MASS FLOW METERS (CORIOLIS TYPE) for car dispenser				
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		
Convertor	15	Load Resistance – ohms.		
	16	Output		
	17	Power Supply		
	18	Area Classification		
	19	Intrinsically safe /Expl. Proof		
	20	Enclosure		
	21	Conduit connection		
	22	Mounting		
Options	23	Distance from control room		
	24	Filter/Mesh Wire		
	25	Mounting Brackets		
	26	Interconnecting		
	27	Special cabling		
	28	Cable glands		
	29	Accessories for hot tap		
Service Conditions	30	Fluid & state		
	31	Maximum Flow		
	32	Minimum Flow		
	33	Normal Flow		
	34	Pressure – Open. Max.		
	35	Temp. C – Open. Max.		
	36	Oper. S.G. Mol. Wt		
	37	Max. order Viscosity mpa . s(cp)		
	38	Max. Allowable Pr. Drop		
	39	Model No. Meter convertor		
	40	Specification Remarks		
	41	Specification Remarks		

Notes:

DEVIATION

NO DEVIATION



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Units:		Flow -> CNG	CNG-Kg/Hr Pressure->	Temperature-> °C	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 Size Port 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			
Act.	21	Type			
Uat or.	22	Close at Open at			
	23	Failure Position			
	24	Handwheel & Location			
Position	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			
Service Conditions	32	Fluid State			
	33	Flow Liquid Min: Normal: Max			
	34	Flow vapour Min : Normal : Max			
	35	Flow Water Min Normal Max			
	36	Inlet Pr. Nor. Min.			
	37	P @Flow rat Min :Normal : Max			
	38	Pressure Shut Off			
	39	Temp. Open. Max.			
	40	Open S.G. Mol. Wt.			
	41	Cp/Cv Compress Factor			
	42	Flash% visc.mPas (open)			
	43	Deg. Of Superheat % Solids			
	44	Vapour Pr. Critical Pr.			
	Valve Data	45	CV Min. Cv Max.		
46		CV Nor. Selected CV			
47		Predicted Sound Level Dba			
48		Inlet Velocity m/s			
Model Nos.	49	Valve Actuator			
	50	Positioner Solenoid Valve			
	51	IBR Certification			



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Solenoid Valves					
Units:		Flow -> CNG	CNG-Kg/Hr Pressure->	Temperature-> °C	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	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			
Service Conditions	29	Fluid			
	30	Press. Open / Max.			
	31	Temperature C-Open/ Max			
	32	Maximum Flow			
	33	S.G. at open Temp. Mol. Wt.			
	34	Viscosity mPa.s (cp)			
	35	Allowable Press Frop			
	36	Del. P Shut Off			
	37	Valve CV			
	38	Model No.			
	39	Specification Remarks			



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SELF ACTUATED PRESSURE CONTROL VALVES				
Units:	Flow -> CNG	CNG-Kg/Hr Pressure->	Temperature-> °C	Level /Length->mm
General	1	Tag. No		
	2	Line No.		
	3	Line Size & Sch.		
	4	Service		
Valve	5	Ty. Of Regulator: Std/pilot op		
	6	Size: Body Port		
	7	End Conn.: - Size & Rating		
	8	- Facing & Finish		
	9	Body Material		
	10	Trim Material		
	11	Set Point		
	12	Impulse Conn.: Int. / Ext.		
	13	Conn. Size & Type if external		
	14	Material of Diaphragm		
	15	Bonnet Type		
	16	Cv: Min. Max.		
	17	Cv: Normal		
	18	Selected Valve CV.		
	19	Predicted Sound Level (dBA)		
	20	Inlet Velocity		
	21	Packing of Seals		
	22	Lubricator ISO - Valve		
	23	Guiding No. of Ports		
Accessories	24	Pressure Indicator		
	25	Relief Valve		
	26	Line Stainer		
Service conditions	27	Fluid & State		
	28	Flow - Min. / Max.		
	29	Flow - Normal		
	30	Inlet Pr. - Max. / Min		
	31	Inlet Pr. - Normal		
	32	Del. Pr. - Max. Min		
	33	Del. Pr. - Shut Off		
	34	Temperature °C - Oper. Max.		
	35	Oper. S.G. Mol Wt.		
	36	Cp/ Cv compress factor		
	37	Flash% open visc. Mpa. S (cp)		
	38	Deg. Of Superheat % solids		
	39	Vapour Pr. / Critical Pr.		
	40	Model No. Valve / Actuator		
	41	IBR certificate		
	42	Specification Remarks		
PRESSURE RELIEF VALVES				
Units:	Flow -> CNG	CNG-Kg/Hr Pressure->	Temperature-> °C	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		



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	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			
Material	17	Body and bonnet			
	18	Nozzle and Disc			
	19	Spring			
	20	Bellows			
	21	Resilient Seat seal			
Options	22				
Basis	23	Code			
	24	Basis of selection			
Service conditions	25	Fluid and state			
	26	Corrosive constituent			
	27	Required flow capacity			
	28	Mol. Wt./ S.G. at Ref Temp.			
	29	Open Pressure			
	30	Open temp C / Ref Temp C			
	31	Valve discharge to			
	32	Back Press. / Const or variable			
	33	Set Pressure			
	34	Cold Bench Test pressure			
	35	% Over pressure/ % blow down			
Orifice	36	Cp/cv [compressibility Factor]			
	37	Viscosity At Ref. Temp. mPa s(cp)			
	38	Vess.: Walltemp.C/ Surf Area-m ²			
	39	Calculated Area cm ²			
	40	Sel. Area cm ² / Orifice Design			
	41	No. of valves Reqd. for capacity			
	42	Total Area - cm ²			
	43	Actual Flow Capacity			
	44	Model No.			
	45	IBR Certification			



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PRESSURE INSTRUMENTS

**Units: Flow -> CNG CNG-Kg/Hr Pressure-> Temperature-> °C Level
/Length->mm**

<p>General</p> <ol style="list-style-type: none"> 1. Function 2. Type: - 3. Case: - 4. Mounting: - 5. Electrical Area Classification 6. Enclosure : Enclosure Class 7. Intrinsically safe: - 8. Air Supply 9. Power Supply 10. Cable Entry: 11. Accuracy: - 12. Repeability: - <p align="center">TRANSMITTER</p> <ol style="list-style-type: none"> 13. Output 14. Trans. Power Supply Controller 15. Output:- 16. A/M switch:- No. of positions:- 17. Set point adjustment 18. Manual Regulator 19. Mode 20. Chart 21. Chart Driver 22. Moving parts matl.; - 23. Chart Speed: - 	<p>Measuring Unit</p> <ol style="list-style-type: none"> 24. Service: - 25. Element : - 26. Body Material: - 27. Element Material 28. Process conn.: - process conn. Location 29. Diaphragm seal wetted parts materials: - other Material Process Conn.: Size & Rating Facing & Finish: - Capability Material:- Armour Flexible: - Armour Flexible Matl.: - Capillary length:- mm Flushing/filling conn. With Miscellaneous 30. Over range protection 31. Options: - (a) Intrinsically Safe Output meter (b) Air Filter Regulator (c) Mounting Accessories (d) 3-way manifold (e) ----- 32. Load Capability:-
--	---

TAG NO.	OPERATING PRESSURE	MAXIMUM PRESSURE	MAXIMUM TEMPERATURE	RANGE		CONTROL	SERVICE	OPTIONS
				Span	Set			



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PRESSURE GAUGES

Units: Flow -> CNG CNG-Kg/Hr Pressure-> Temperature-> °C Level /Length->mm

- | | |
|---|---|
| <ul style="list-style-type: none"> 1. Type: - 2. Mounting: - 3. Dial Size: -
Colour: - 4. Case Matl. :- 5. Bezel Ring :- 6. Window Matl.:- 7. Enclosure :- 8. Pressure Element :- 9. Element Matl.:- 10. Socket Material 11. Accuracy 12. Zero adjustment | <ul style="list-style-type: none"> 13 Connection
connection location: - 14 Movement: - 15 Diaphragm Seal:-
Type
wetted parts material – Element Matl.
Lower Boy Matl.
Non-wetted parts materials :
Process connection: size & Rating
Facing & Finish
Capability Material
Armour – Flexible – Matl. capability Length
Flushing / filling connection 16 Over Range Protection:- 17 Blow out Protection:- 18 Options: (a) Snubber
(b) Syphon
(c) Gauge Saver
(d) Liquid filled casing
(e)----- |
|---|---|

TAG No.	Range	Operating Pressure	Maximum Service Pressure	Maximum Service Tempe.	Fluid	Service	Options



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**ANNEXURES
To Technical Specifications**



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Annexure-1: Approved Vendor List

AIR FILTER / REGULATORS	Remark
ASEA BROWN BOVERI LTD.	
BLUE STAR LTD	
DIVYA CONTROL ELECMENTS PVT. LTD.	
JANATICS INDIA PVT. LTD.	
P.RAI AND COMPANY	
PLACKA INSTRUMENTS & CONTROLS PVT. LTD	
SHAH PNEUMATICS	
SHAVO NORGREN (I) PVT. LTD	
V AUTOMAT & INSTRUMENTS PVT. LTD.	
VELJAN HYDRAIR PVT. LTD.	
FIELD INSTRUMENTS (P, DP, F,L,T)	
VENDOR NAME	
ABB AUTOMATION LTD.	
BROWN BOVERT LTD.	
FISHER ROSEMOUNT INDIA LIMITED	
FISHER ROSEMOUNT SINGAPORE PTE LTD.	
FUJI ELECTRIC CO. LTD.	
HONEYWELL INC.	
ASHCROFT	
MURPHY	
CCS	
WAREE	
TATA HONEYWELL	
YOKOGAWA ELECTRIC CORPORATION	
YOKOGAWA BLUE STAR LTD.	
WIKA	
MSI	
MASS FLOW METERS	
EMERSON PROCESS MANAGEMENT(CORIOLIS TYPE)	
COMPAC KG-80(CORIOLIS TYPE)	
PRESSURE GAUGES	
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	
WALCHANDNAGER INDUSTRIES LTD.	
WIKA ALEXANDER WIEGAND & CO GMBH	
WIKA INSTRUMENTS INDIA PVT. LTD.	
DRUCK	
PRESSURE RELIEF VALVE	



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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	
DK-LOK	
TAI MILANO SPA	
TYCO SANMAR LTD.	
TYCO VALVES & CONTROLS INDIA PVT. LTD	
COMPAC	
SELF ACTUATED PR. CONTROL VALVE	
DANIEL INDUSTRIES INC	
DRESSER PRODUITS INDUSTRIES	
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	
COMPAC INDUSTRIES LTD., NZL.	
SOLENOID VALVES	
ALCON ALEXANDER CONTROLS LIMITED	
JEFFERSONS	
ASCO (INDIA) LIMITED	
ASCO JOUCOMATIC LTD.	
ASCO JOUCOMATIC SA	
PARKER HANNIFIN, USA	
AVCON CONTROLS PVT. LTD.	
BARKSDALE INC.	
Rotex	
HERION WERKE	
SCHRADER SCOVILL DUNCAN LIMITED	
SEITZ-AG(SWITZERLAND)	
SPECIAL CONTROL VALVES	
FISHER ROSEMOUNT SIGAPORE PTE. LTD.	
FLOWERVE PTE. LTD. (FORMERLY DURIRON)	
HOPKINSONS LIMITED	
METSO AUTOMATION PTE LTD.	



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(FORMERLY NELES)	
NUOVO PIGNONE SPA (ITALY)	
SPX VALVES & CONTROLS (FORMERLY DEXURIK)	
COMPAC IND. LTD. NZL	
REGULATORS	
COMPAC IND. LTD.	
TWO WAY / THREE WAY VALVES / FITTINGS/TUBE/NEEDLE VALVE/ SWAGELOK, PARKER, COMPAC, HYLOK	
BREAKAWAY COUPLING	
VENDOR NAME	
STABULI, PARKER, OPW, WEH	
NOZZLE CAR	
STABULI, OPW	
HOSE	
VENDOR NAME	
SYNFLEX	

Notes:

- 1) Successful bidders shall take prior approval of the Makes / Items not covered above for which complete technical credentials (must be for CNG applications) of the proposed vendors shall be required to submit for evaluation by Purchaser/Consultant.
- 2) The some Items indicate only Indian Makes. Successful Foreign bidders may take prior approval of any other makes also for which complete technical credentials (must be for CNG applications) of the proposed vendors shall be required to be submitted for evaluation by Purchaser/Consultant. The Dispenser Manufacturer having / develop the specific products for the use with their own brand name are also accepted subjected to submission of proven track record and the acceptance/ testing /certification. Decision of the client / consultant will be final.
- 3) for acceptance of additional vendor with submission of following minimum documents suggested:
 - 1) Submit PTR with clients PO copy and satisfactory certification from client
 - 2) BOM indicating the make & item proposed for approval
 - 3) Such dispenser must have completed the running 8000 hour operational. If proposed vendor is not acceptable then bidder has to consider the make as per vendor list suggested in tender.



Annexure-2: VENDOR DATA REQUIREMENT

1.0 DRAWING AND DATA REQUIREMENT

1.1 The following data and information marked "X" shall be furnished by the vendor for Car Dispenser:

S. No.	Description	With Bid	After Job Award		
			For Review	For Information	Final in Book Form
1	2	3	4	5	6
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 provenness 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 as well as 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		



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1.15	Weights & Measures approval from Indian Authorities.		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		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	Test certificates for Hose assembly		X		X
2.5	Performance data, vendor literature for equipment selection, performance curves with duty point marked for individual equipment		X		X
2.6	Specification for piping material & valves.		X		X
2.7	Utility requirement	X	X		X
2.8	Detail of control wiring diagram, interlock/ shutdown/ control scheme with write up on operation. Sizing calculation for instrument items.	X	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.				
3.3	Termination & Wiring Diagrams			X	X
4.0	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 3 copies
- 1.2.3 Documents listed under column 5 are to be submitted in 3 copies.
- 1.2.4 Final technical file shall be supplied in hard copy as indicated in column 06, and in electronic format (.pdf Acrobat files) on Six (6) CD-ROMs / pen drive.

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 All design calculations carried out by the vendor.



- 1.3.5 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.
- 1.3.6 Catalogues/leaflets of sub-vendors/suppliers of various bought out components highlighting the components actually supplied correlated to P.O. Item Numbers.
- 1.3.7 Operating and maintenance instructions including lubrication schedules with details of suppliers for procurement by OWNER for subsequent needs.
- 1.3.8 Release Note and Packing List.
- 1.3.9 Any other documents asked for in the Purchase Requisition.
- 1.3.10 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.
- 1.4.2 Contractor to forward the drawings and documentation to BGL (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 BGL must be checked and signed/stamped by contractor before it is submitted to BGL.
- 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 BGL.
- 1.4.9 The review of the vendor drawings shall be done by BGL, as applicable, under the following review codes:

Review Code A	No comments.
Review Code B	Proceed with manufacture/fabrication as per commented drawings. Revise drawings required
Review Code C	Document does not conform to basic requirements.

- 1.4.10 Review of vendor drawings by BGL 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 BGL'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	*		*
17.	Configuration diagram		*	*
18.	I/O assignment if applicable	*		*
19.	Instrument Duct/Tray layout			
20.	Instrument Cable schedule			
21.	Instrument location plans			
22.	Installation drawings			
23.	Bill of material for installation items	*		*
25.	Inspection and test procedures	*	*	
26.	Complete catalogues with part list for all vendor supplied instruments, controls etc	*		*
27.	Installation, operation and maintenance manuals			*

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

Coding Structure						Manufacturer
Codes for Extent of Inspection, Tests & Test Certificates				Codes for Documents		MFR – Manufacturer BGL – Owner TPIA – Third party appointed by Vendor PMC - TEPL Customer's Information Customer: M/s BGL Item : As listed in M.R.
Code	Description	Co de	Description	Co de	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 tantalizer	19	Paint shade verification			
9	Check for single bank system	20	Test certificate for bought out components			
10	Check for manual shut off	21	Flow capacity test			
11	Batch accuracy test					

INSPECTION AND TEST PLAN

EQUIPMENT DETAILS			INSPECTION AND TESTS				SCOPE OF INSPECTION AND TESTS		
Sr. No	Description	Qty.	RAW MATERIAL AND Stage Inspection		FINAL INSPECTION		Documents for submission to BGL/PMC/TP I	Acceptance Criteria	Activity by BGL/PMC/TPI
			MFR	BGL/PMC/TPI	MFR	BGL/PMC/TPI			
1	Dispenser Frame	Each	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	Each	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	Each	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	Each	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	Each	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	1	9		9	9	D3	Tech. Specs in PO	Witness
7	Pressure Gauge	Each	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	Each	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	Each	1,2,3,4,		1,2,3,10	1,2,3,10	D1,D2,D3,D4,	D7 & Tech Specs	Review of documents

	valves		5,10				D7	in PO	
10	Performance Test (using CNG)	Each	11,21		11,21	11,21	D3,D7	D6, D7 & Tech Specs in PO	Witness
11	Dispenser response	Each	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

Note:

1. 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).
2. The supplier shall submit their own detailed QAP prepared on the basis of the above for approval of Owner/Owner's representative and TPIA.
3. 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.
4. All bought out items will be procured with 3.2 Certificates.
5. Vendor 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.
6. Owner/Owner representative shall review/approve all the documents related to QAP/Quality manuals/Drawings etc. submitted by supplier.
7. All reference Codes/ Standards, Documents, P.O. Copies shall be arranged by vendor / supplier for reference of TPIA/BGL at the time of Inspection
8. At the time of delivery of material in stores, vendor will submit copy of all related document of inspection along with release note & MTC.



Bhagyanagar Gas Ltd.

**BHAGYANAGAR GAS
LIMITED**

**Procurement of 15 No's of CNG Car Dispensers for
BGL Hyderabad, Vijayawada and Kakinada on Annual
Rate Contract Basis**

**Volume
II of II**

Bid Document No. BGL/426/2018-19

SECTION – 10

SCHEDULE OF RATES



BHAGYANAGAR GAS LIMITED

Procurement of 15 No's of CNG Car Dispensers for BGL Hyderabad, Vijayawada and Kakinada on Annual Rate Contract Basis

Volume II of II

Bid Document No. BGL/426/2018-19

S.No	Description of item	Unit	Qty	Unit rate (Rs)	Total Rate (Rs.)
	Design, detail engineering, manufacturing, assembly, factory testing, supply of dispenser including packaging, handling transportation of Dispenser, loading/ unloading at BGL sites, documentation etc. and providing all related services including installation, integration, site acceptance testing, trial run and drawings, documents and licensed software & hardware, converters, cables etc. confirming to BGL and providing Comprehensive AMC during Warranty period of 01 year as mentioned in specification enclosed with tender.				
	Supply				
1.a	Design, Engineering, Manufacturing and supply of CNG CAR DISPENSER as per scope of work defined in the tender document.	No's	15		
	Freight & Transit Insurance charges				
	GST @.....%				
	Sub-Total Amount inclusive of GST & all other applicable taxes and duties towards supply (Rs.)				
	Installation and commissioning:				
1.b	Erection, Testing, commissioning & calibration, guaranteed performance test of each supplied CNG CAR DISPENSERS at BGL locations inclusive of all required manpower, tools, tackles, spares if necessary etc., and as per directions of EIC.	No's	15		
	GST @.....%				
	Sub-Total amount inclusive of GST & all other applicable taxes and duties towards Installation and commissioning (Rs.)				
2	Comprehensive AMC				
	Lump-sum Comprehensive Maintenance charges of each supplied CNG CAR DISPENSER for 02 years after Post-Warranty inclusive of supply of all consumable, all spares & Manpower etc., and as per directions of EIC.	No's	15		
	GST @.....%				
	Sub-Total amount inclusive of all GST & all other applicable taxes and duties towards Comprehensive AMC for 02 years				
	Grand Total Amount for supply, installation, commissioning and comprehensive AMC for 02 years in Rs.(1.a+1.b+2)				