



**TECHNICAL DOCUMENTS FOR SUPPLY AND COMPREHENSIVE AMC FOR
BOOSTER CNG COMPRESSOR**



TECHNICAL SCOPE OF WORK FOR COMPREHENSIVE AMC OF CNG COMPRESSOR

1. SCOPE OF WORK

- 1.1. Operation and Maintenance of CNG compressors shall be considered under this service order.
- 1.2. CNG Compressor along with its accessories like Air compressor, Priority Panel other auxiliary equipments etc. are included in the scope of work of this contract.
- 1.3. The Service Provider/OEM shall carry out calibration of gas detectors and flame detectors every Year, in case the GD or FD is malfunctioning in routine operation; it will be rectified/replaced by OEM/SERVICE PROVIDER.
- 1.4. Also yearly calibration of all the instruments such as pressure gauges, Pressure transmitters, Pressure switches, Temperature Gauges, Temperature Transmitter, RTD, etc. shall be in the scope of the Service Provider.
- 1.5. The Service provider/OEM shall carry out thickness measurement of Pressure vessels in accordance with Factory Act & necessary Form 11 certified by competent person approved under the Factory Act shall be submitted to GGL.
- 1.6. Quarterly monitoring of Vibration & Noise level is in the scope of OEM/SERVICE PROVIDER.
- 1.7. All safety relief valves shall also be tested and calibrated every year including replacement with new one if required. Service Provider/OEM shall provide Calibration Certificate for SRV tested as per SMPV rules to be certified by competent authority certified under Factories act 1948.
- 1.8. The service provider/OEM must follow the OPERATION & MAINTENANCE requirement as stated below but not limited to and ensure trouble free services to the satisfaction of the OWNER.
- 1.9. Log-sheets and registers for maintenance work reporting shall be brought by Service Provider as per the format approved by GUJARAT GAS LTD.

The detailed scope of work shall be as per above referred Tender Documents or Latest Terms and Condition accepted by both Organizations.

2. SERVICE CONDITIONS:

Process for Permission to engage external vendors experienced in handling of CNG compressors:

- 2.1. Before engaging the services of external agencies, OEM/SERVICE PROVIDER has to submit the credentials of the party they wish to engage.
- 2.2. On getting approval from GUJARAT Gas, OEM/SERVICE PROVIDER to provide relevant technical and HSE training to the personnel engaged by issuing them individual identity card with a validity of one year. The identity cards will be renewed every year by the service provider based on the competency and performance of his person. .
- 2.3. OEM/SERVICE PROVIDER can utilize services of trained technicians of their authorized vendor as mention above for handling minor maintenance activities like monthly preventive maintenance and other maintenance activities that need not require opening of pressurized crank case, handling HT connections and other highly hazardous activities.
- 2.4. Training module with the details of the training that will be imparted, schedule for refresher training and continuous updation of the credential of the personnel engaged should be under the scope of the OEM/SERVICE PROVIDER.



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- 2.5. OEM/SERVICE PROVIDER should notify any change in manpower to concerned EIC of GUJARAT GAS Ltd with details like Name, address, photograph and details of training imparted. The change in manpower shall be allowed only after the approval of EIC-GGL
- 2.6. Other equipments supplied by OEM/SERVICE PROVIDER as a part of the package should be available for station operation. In case the breakdown of any one of the equipments like air compressor impacts the sale of the station then penalty will be applicable as per the clauses mentioned below. The above does not release the OEM/SERVICE PROVIDER from the responsibility of putting the equipment back in operation as agreed between OEM/SERVICE PROVIDER and EIC.
- 2.7. The service provider/OEM shall make his own arrangement for the accommodation of his personnel at respective locations and subsequent transportation for them from their work place of residence to work place or any other place as required. GUJARAT GAS LTD. shall have no obligation in this respect. GUJARAT GAS LTD. shall not be responsible for providing any medical assistance to the Service Provider personnel.
- 2.8. The service provider/OEM shall be responsible for the discipline, good behaviour of all his personnel & ensure that all his personnel deployed in services are well-dressed in uniform. In case any complaint is received against any of his employee, he shall arrange to replace such person/(s) within 24 hrs of notice issued by GGL Engineer in charge. The decision of the "EIC" shall be final & binding on the Vendor.
- 2.9. The Service Provider/OEM shall arrange to supply & renew identity cards to his workforce at his own cost if so required by the PURCHASER/OWNER (GUJARAT GAS LTD.) for security or any other reasons. Those Vendor's persons shall carry their I. D. cards while on duty & shall produce the same on demand.
- 2.10. Sub-letting of the contract shall not be allowed without prior permission of GUJARAT GAS LTD. (GGL) in writing. If the services are not provided as per required time (the services called for 365 days including Sundays, which is defined by GUJARAT GAS LTD., nothing contained herein shall restrict PURCHASER/OWNER to get services carried out through other agency at the risk & cost of Vendor.
- 2.11. It may be noted that the technicians and supervisor can be kept in consultation with GUJARAT GAS LTD as per distance/time between the allotted refuelling stations. However acceptance by GGL on the number of technicians/supervisor to be mobilised shall not leave OEM/Service Provider from his responsibility to ensure machinery BDT loss not to exceed defined limits and GUJARAT GAS LTD. shall recover the Penalty as per the penalty clause for major or minor breakdown.
- 2.12. Only sound & experienced persons shall be deployed for the works. The supervisor shall report daily to representative of GUJARAT GAS LTD for day to day working. The Gujarat Gas Ltd shall also review and approve preventive schedule (generally as per OEM/SERVICE PROVIDER recommendation) prepared for the package application.
- 2.13. The supervisor shall ensure the safety of all machines & men during the entire course of all operation & onsite repairs as well as offsite repairs & maintenance works.
- 2.14. All deployed persons of the Service Provider, shall arrange snacks/lunch/dinner for themselves. GUJARAT GAS LTD shall not have any obligation to provide the same. All the persons deployed, shall have minimum acceptable proficiency in written and speaking skills in Hindi and Gujarati, except for helper who can have required proficiency in Gujarati speaking.



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- 2.15. If any of the persons found not competent for his work after deployment, it shall be in the interest of contractor to replace him immediately on the instructions of EIC-GGL.
- 2.16. The rates shall be inclusive of supply of all "OEM/SERVICE PROVIDER" (Original Equipment Manufacturer) spares parts, special proprietary tools of the compressor package, general tools, other general hardware, pipe flanges, oil, lubricant, coolant, all gases etc., consumables consumed & inclusive of all taxes, duties, octroi including the total wages of his persons deployed.
- 2.17. Before attending to any Planned Maintenance, OEM/SERVICE PROVIDER shall ensure availability of all recommended spares (as per OEM/SERVICE PROVIDER Manual) to be replaced. Non availability of recommended spare and consequent postponement of scheduled maintenance will be liable for penalty as per penalty terms mentioned in this document.
- 2.18. The service provider shall observe the compliance of different labour laws act 1970, for PF/FP/minimum wage/ESIC/Insurance/weekly leave (rest)/daily working hours etc. & shall maintain proper attendance & payment records. Wages consideration should be either Central or State whichever is higher.
- 2.19. Employees employed by the Service Provider will not enjoy any legal rights of the Employee of Gujarat Gas Ltd & will not be considered as an Employee of Gujarat Gas Ltd at any point of time during/after the contract.

All other terms and conditions shall be as per referred order/ documents.

3. SPECIAL CONDITION OF CONTRACT:

- 3.1. Critical spares such as heat exchanger motor & main motor should be readily available with OEM/SERVICE PROVIDER to reduce the Breakdown time of Compressor. Also bidder will be penalised if not resolved/replaced within timeline.
- 3.2. During replacement of Motor, to & fro transportation of motor from store/workshop to site is in the scope of OEM/SERVICE PROVIDER, hiring of hydra/crane charges should be in the scope of OEM/SERVICE PROVIDER.
- 3.3. **Maintenance of CO2 flooding system as per IS 2190:**
 1. Frequency for CO2 flooding system should be maintained as Quarterly & Yearly and as per the IS standard-2190.
 2. Hydro testing of cylinders of CO2 flooding system should be maintained as once in five years.
 3. During Periodic testing, if GUJARAT Gas Ltd empties the CO2 cylinder then in those cases CO2 cylinders will be filled by GUJARAT Gas Ltd., however during routine operation/scheduled maintenance, if the CO2 cylinder gets emptied out then it shall be filled by OEM/SERVICE PROVIDER.
 4. If the failure is observed replacement of the component shall be in scope of OEM/SERVICE PROVIDER.

4. DOCUMENTATION & REPORTING

- 4.1. Service Provider shall Record / Maintain Reports



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- 4.1.1. Daily and Monthly Operational report
- 4.1.2. Maintenance reports
- 4.1.3. Maintenance Order Copy
- 4.1.4. Site service reports including consumption statement of spares
- 4.1.5. Root cause analysis reports
- 4.1.6. Gas / Spares reconciliation reports, etc.
- 4.1.7. Log books
- 4.1.8. Any other report required by OWNER on time to time basis.

4.2. Service Provider shall thoroughly check the Reports and ensure they are in accordance with the actual site parameters, values, conditions and then only send to Owner.

5. PENALTIES

5.1. Penalty for availability of compressor package:

Breakdown time (BDT) will be considered from the time breakdown was logged in the log book to the time machines was put back in operation as per the log book at the site / Herein after known as logging of complaint).

Classification of nature of breakdown into minor or major will be decided by EIC along with the OEM/SERVICE PROVIDER representative, based on the complexities of work involved and the efforts that are put in for attending the breakdown. For converting major to minor breakdown, due approval from Operation Head is needed.

Indicative list of minor / major breakdowns are given for guiding the site.

5.2. Minor breakdown:

- 5.2.1. Any minor maintenance activity should be attended with 8 hours from time the breakdown is logged, if the time of attending is more than 8 hours Gujarat Gas Ltd. debits Rs.5000 for every 4 hours.
- 5.2.2. Activities that can fall under minor breakdowns are:
 - 5.2.2.1. Replacing/repairing mechanical instruments related to faults and alarms like PT, TT, GD, FD, etc.
 - 5.2.2.2. Replacement of electrical instruments like timers, contactors, barriers, fuses, protective relays, SMPS, etc.
 - 5.2.2.3. Replacement of failed O rings/gaskets fitted on SRVs, repair of suction/discharge valves, PRV settings, filter clean up/element replacement, repair of Water pump coupler or belt, repair of Heat exchanger coupler or belt and replacement of main Motor belt or coupler, cleaning of heater coils, Air compressor break down, etc.

5.3. Major breakdown on a normal day :



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- 5.3.1. Any major breakdown should be resolved within 24 hours from the time the breakdown is logged. If the time for attending break down is more than 24 hrs, then Gujarat Gas Ltd. debits Rs.15000 for every day of the delay (beyond 24 hrs. of BDT).
- 5.3.2. The following will be exempted while calculating BDT of 24 hrs however, GGL decision will be final whether to consider the exclusion of down time or not:
- 5.3.2.1. In case if the services for attending major maintenance are to be provided by third party like fabrication work shop, Motor winding, etc., then Sundays/ Public Holidays / Intervening holidays will be excluded from arriving at B/D time.
 - 5.3.2.2. Time required for identifying the breakdown if the type of breakdown is not as per known logical sequence of operations.
 - 5.3.2.3. Breakdown has to be attended at OEM/SERVICE PROVIDER's designated workshop and cannot be attended at site. However, the total continuous downtime shall not be more than 36 hours.
 - 5.3.2.4. Attending to Breakdown needs activities like fabrication, casting, forging, motor rewinding or any other that takes time however, and the total continuous downtime shall not be more than 36.0 hours.
- 5.3.3. Activities that can fall under major breakdowns are:
- 5.3.3.1. Any work related to opening of the compressor like crank case, piston rod, packing rings etc.
 - 5.3.3.2. Breakdown involves winding of motor, replacement of water pump, repair of heat exchanger/ coils / fins etc.
 - 5.3.3.3. Electrical / instrument breakdown involving PLC replacement.

5.4. Total breakdown time over the Quarter

- 5.4.1. OEM/SERVICE PROVIDER has to ensure that the complete package is available for operation for a minimum of 98% of the working hours in a Quarter.
- 5.4.2. Penalty for Compressor package shall be applicable either for minor/major breakdown time or for availability of compressor package; whichever is higher.

$$\% \text{ Availability of the Machine} = (T-B)/T$$

Where

B = Total no. of breakdown hours recorded in log book.

T = Total number of hours in a Quarter to be calculated by considering 24 Hours of running of the machine per day.

If the equipment availability is less than 98% in a Quarter, then penalty shall be applicable as follows:



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Compressor Availability for Entire Quarter - 98 % to 100%

% of Penalty to be levied against invoice - 0 %

Compressor Availability for Entire Quarter - 96% to less than 98%

% of Penalty to be levied against invoice - 5%

Compressor Availability for Entire Quarter - 91% to less than 96%

% of Penalty to be levied against invoice - 10%

Compressor Availability for Entire Quarter - 85% to less than 91%

% of Penalty to be levied against invoice - 20%

Compressor Availability for Entire Quarter - 81% to less than 85%

% of Penalty to be levied against invoice - 30%

Compressor Availability for Entire Quarter - 75% to less than 81%

% of Penalty to be levied against invoice - 40%

Compressor Availability for Entire Quarter - 0% to less than 75%

% of Penalty to be levied against invoice - 50%

- 5.4.3. Penalty for Availability arising due to Minor or Major Breakdown penalty will be monitored and calculated on Quarterly Basis. Penalty will be levied on the invoice value of 3rd month of the Quarter.

5.5. On Schedule Maintenance Day:

- 5.5.1. OEM/SERVICE PROVIDER shall carry out recommended schedule/preventive maintenance of equipments. OEM/SERVICE PROVIDER has to submit time required for each type of scheduled maintenance as per O&M manual and get one time approval from EIC-Gujarat Gas Ltd.
- 5.5.2. If the package is down beyond the time indicated in the agreed scheduled maintenance period, then OEM/SERVICE PROVIDER will be penalized as per penalty terms proposed above for minor/major break down.

NOTE:



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OEM/SERVICE PROVIDER can get approval for waiver of penalty from Operations Head by giving proper justification for the delay in attending the breakdown or on categorization of type of breakdown (Minor / Major) if it is not covered in list given above.

5.6. Penalty for Gas Loss:

The Compressor package shall consist 2 nos of Mass Flow meters which shall measure

1. Gas flowing through the inlet of Compressor (Suction Mass Flow Meter),
2. Gas flowing through the outlet of Compressor (Discharge Mass Flow Meter),

5.6.1. Penalty for Other Gas Loss:-

The limit for Gas loss of compressor is specified as 1%, this limit is arrived after considering the accuracy of the meters.

Penalty for Other Gas Loss is calculated based on the following formula:

A = Consumption of Gas measured through the Suction Flow Meter

B = Consumption of Gas measured through the Discharge Flow Meter

C = Penalty for Other Gas Loss beyond the limit of 1%

$C = A - B$

- 5.6.2. Gas loss monitoring is within the scope of OEM/SERVICE PROVIDER and systems should be in place by OEM/SERVICE PROVIDER for taking necessary action immediately on observing gas loss beyond the limit specified below for the month.

EIC may Penalize OEM/SERVICE PROVIDER by considering monthly average loss of 1% as the specified limit. OEM/SERVICE PROVIDER can get approval for waiver of penalty from Operation Head by giving proper justification for gas loss beyond the specified limit.

- 5.6.3. Gas Loss shall be calculated on monthly basis. Gas Loss Penalty will not be applicable for those compressors where suction flowmeter is not installed in the compressor inlet.

- 5.6.4. Amount to be penalized should be arrived at by reducing Excise duty, VAT and dealer commission from the applicable "Retail Selling Price" (RSP):

Dealer commissioning considered as a part of pricing = A

Gas price in Rs. without dealer commission (B) = $RSP - A$

Applicable VAT in Rs. (C) = $B - (B / (1 + VAT/100))$

(Where VAT is Value Added Tax in %)

Gas price in Rs. without VAT (D) = $B - C$

Applicable Excise Duty in Rs. (E) = $D - (D / (1 + ED/100))$

(Where ED is Excise Duty in %)

Gas price in Rs. without ED (F) = $D - E$

So net Gas price to be considered for debiting towards gas loss (between suction and discharge MFMs) is "F" given above.

5.7. Penalty for Power Consumption:

The Monthly penalty for power per package shall be the calculated as follows:



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$$PY \text{ (in Rs)} = (P_T - P_G) \times C_P$$

Where,

PY = Penalty Cost

Actual Power Consumption (KWH) for the month (P_T) :-

Total Unit Consumed by the compressor should be calculated by subtracting the Opening Power Meter Reading from Closing Power Meter reading

Guaranteed power KWH for month (P_G):-

Value quoted by the Bidder in the N-procure portal x Actual Running hours of Compressor during the month

C_P = Actual per Unit cost charged by the Electricity Supplier Company

5.8. Other penalties:

- 5.8.1 If the operator is not available for any of the working shift, the service provider/OEM/SERVICE PROVIDER will be penalized Rs.500 per instance. However, levying of penalty does not relieve service provider/OEM/SERVICE PROVIDER from ensuring that the absence of manpower does not affect the operation of the machine.
- 5.8.2 If the operator is not in uniform or not using PPE then Rs.500 per instance will be levied as penalty.
- 5.8.3 Rs.1000/- per instance to be levied for Noncompliance to Gujarat Gas Ltd Limited Life savers. Instance will be restricted to one per day for the same Service Provider for same site.
- 5.8.4 Timeline for preventive maintenance & corrective maintenance to be decided between EIC & OEM/SERVICE PROVIDER in a document (either through Mail or MOM). Penalty of Rs. 1000 per week will be applicable in case there is delay in the SLA for execution of Maintenance.

5.8.5 Penalty for Spillage of Oil:

- i. No penalty for 1st Oil Spillage/Leakage/seepage for Awareness Creation to Operators/ Maintenance team.
- ii. Rs. 500/- per instance for 2nd Oil Spillage / Leakage/seepage.
- iii. Rs. 1000/- per instance From 3rd Oil Spillage /Leakage/seepage onwards.

5.8.6 Penalty for Documentation:

- i. Rs.1000/- per instance if the service provider fails to submit Monthly Report by mutually agreed date of Subsequent month.
- ii. If the service provider fails to submit RCA Report for Major Failure within 1 Month, Penalty of Rs. 1000 per week will be applicable.

- 5.9 In any case, the maximum penalty imposed in a month for any of the above reasons except for penalty imposed against Gas loss and Penalty for Power Consumption shall be limited to or equivalent of 50% of the basic value of the invoice (excluding taxes) specified per month per package under the Operations & Maintenance contract.



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- 5.10 Penalty amount rose for a particular package due to any reasons excluding penalty levied against Gas loss and Power Consumption should not be carried forward to other months or to the other packages being handled by OEM/SERVICE PROVIDER.
- 5.11 All other terms and conditions as per referred order, amendments as well as referred documents.

6. SPARES MANAGEMENT :

- 6.1. 1st preference for utilisation of spares shall be given to the spares available with client. The invoice value for spares utilised will be debited from the monthly invoice of OEM/SERVICE PROVIDER.
- 6.2. Supply and installation of All (Electrical, Mechanical, Instrumentation, hoses, etc.) Spares and Consumables required for Routine, non-routine, breakdown & Emergency Operations of all CNG Compressors along with related Accessories.
- 6.3. Service Provider has to submit the list of spares which they are consuming for each scheduled Routine Operation (Both for Running hours based maintenance and time based maintenance) and service provider shall follow the schedule replacements irrespective of the condition of equipment.
- 6.4. Inventory: service provider has to submit the list of Inventory which they have been maintaining with in the location to maintain the machines as per Service Level Agreement uptime.
- 6.5. Service provider shall change all the identified spares, Replacement of spares will be performed as per the OEM/SERVICE PROVIDER manual at the frequency mentioned in the OEM/SERVICE PROVIDER manual.
- 6.6. Supply of all consumables like Compressor lube oil, Crankcase oil, Grease etc.
- 6.7. Service provider shall carry all the required preventive, proactive and breakdown maintenances including supply of spares, repair kits, etc.
- 6.8. Service provider need to define the replacement frequency of Spares as per OEM/SERVICE PROVIDER recommendation specified in O&M Manual in coordination with Gujarat Gas Ltd and service provider need to continue to follow the replacement/maintenance frequency irrespective of the condition,
- 6.9. Identify and maintain the Inventory required operating the station Round the clock i.e. 24x7. The Service Provider shall be solely responsible for procuring and maintaining consumables spares for routine and preventive maintenance viz. Lube oil, gas/ oil filters, grease, O-rings for filters etc. to be available on round the clock basis at site.
- 6.10. Keep proper records for the spare parts, lube oil and other consumables utilized during the O&M activities on daily/monthly /yearly basis.
- 6.11. The Service Provider shall advise Owner promptly if any correspondence/ warranty claim may be taken up with the supplier of any of the equipment installed in the package or a claim may be made under any warranty claim.
- 6.12. During the execution of the contract service provider must allow Gujarat Gas Ltd. to verify the availability of Spares required for Planned & Breakdown Job.

7. CONTRACT PERIOD:

The tenure of the contract will be specified in the SOR of this tender.

8. TERMS AND MODE OF PAYMENT:



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100% of the undisputed payment shall be released within thirty days from date of submission of invoice duly certified by Engineer-in-Charge, to the Service Provider on submission of following in addition to the document specified in section.

- 8.1. Invoice in triplicate (Service Provider to raise monthly invoice only).
- 8.2. Certificate from Engineer-in-Charge (EIC) for carrying out scope of work / activities in accordance with contract conditions. Verification report / Certificate from EIC confirming renewal / valid certificates required as per statutory requirement.
- 8.3. NOC from the respective civic agencies (if applicable).
- 8.4. Challan / receipt of payment made to Regional Provident Fund Commission (RPFC) for the preceding month.
- 8.5. All manuals and test certificates (if applicable) of the materials supplied to OWNER.
- 8.6. All payments under this contract shall be subject to income tax deduction i.e. Tax Deducted at sources (TDS) as may be applicable under the prevailing statute at the time of payment or its being due to the 'Service Provider'.
- 8.7. Service Providers shall in addition to other construction taxes also be responsible for payment of Cess under the Building & Other Construction Workers Welfare Cess Act, 1966 and same will be deposited with relevant authorities with intimation to the company.
- 8.8. Vendor shall submit the bill (Invoices) within 30 days from the date of supply/completion of services, filing which Company shall exercise the right of deducting 33% of Invoice value on account of "TAX LOSS" to Company.
- 8.9. Documents specified in Clause - 4