

**Subject: Scope of Work-Hiring Consultancy EPMC - LNG & CNG-R0**

**Ref. Documents:**

No Attachment



**GUJARAT ENERGY**

**TECHNICAL SCOPE OF WORK**  
**HIRING CONSULTANT FOR ENGINEERING AND PROJECT**  
**MANAGEMENT SERVICES FOR CNG/ LNG/LCNG STATIONS**

**Document No: GEL/TS/CNG/CONSULTANCY/EPMC FOR CNG-LNG/SOW**

## 1. INTRODUCTION

GUJARAT ENERGY LIMITED (GEL) (erstwhile Gujarat Gas Ltd. - State Government undertaking) having City Gas Distribution Networks for Distributing Natural Gas to Industrial/Commercial and Domestic Customers and CNG Stations across 41 districts in the state of Gujarat, Rajasthan, Madhya Pradesh, Haryana, Punjab, Maharashtra and Union Territory of Dadra & Nagar Haveli. GEL is committed to develop eco-friendly infrastructure and transportation fuel for public services in its operating areas as awarded by PNGRB from time to time

Gujarat Energy Limited (GEL) intend to engage an agency to provide Engineering & Project Management Consultancy (EPMC) services to ensure the safe delivery of CNG, LNG & LCNG stations in close coordination with various stake holders (Franchises, OMC, GEL, Vendors, Suppliers, Contractors, Consultant, third party agencies) in stipulated timeline as per the procedures/ system of GEL.

Scope of the work includes verification of drawing/document submitted for GEL approval post award of contract, inspection, witness testing at vendor's plant/site, dispatch of material, project management, planning, scheduling, execution, monitoring, supervision, inspection, liaison, QHSE management, QA/ QC of materials/ equipment related to Civil, Electrical and Mechanical and all other services related to CNG/LNG/LCNG station. EPMC will be responsible for coordination with various stakeholders for all type of work from the date of award of contract to bidders offering material and service for commercial operations of the said system.

The appointed EPMC agency shall be responsible and accountable for delivery of GEL business plan in and around state of Gujarat, Maharashtra, Punjab, Madhya Pradesh, Rajasthan, Haryana and UT of Dadra Nagar Haveli.

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 a different intention appears, the provisions of the Special Conditions of Contract shall be deemed to over-ride the provisions of the General Condition of Contract and shall to the extent of such repugnancy, or variations, prevail.

The tender for procurement of material, equipment and services will be done by GEL. The CONSULTANT should have expertise for providing Engineering & Project Management Consultancy services in all areas of project management as per the scope of the services given in the tender. This document summarizes the scope for Engineering & Project Management Consultant (EPMC) for executing the project from verification and approval of engineering design documents, Planning, construction to Commissioning and Project close out on overall & single point responsibility basis.

It will be CONSULTANT's responsibility to bring to the notice of GEL/Engineer-in-charge for any irreconcilable conflict in the contract documents before starting the work(s) or making the supply with reference which the conflict exists.

## 2. DEFINITIONS Definitions of the terms used in this document (unless the context otherwise requires) shall have the same meaning as respectively assigned hereunder:

- 2.1 **Client/ Owner/Buyer** shall mean GUJARAT ENERGY LIMITED (GEL), who has invited quote for the job to execute the project.
- 2.2 **Bidder** designates the individual or legal entity which has made a proposal, a tender or a bid with the aim of concluding a Contract with the Owner (GEL).
- 2.3 **Consultant** shall mean the person or firm or body corporate appointed by GEL for the purpose of providing services as determined by him in connection with this project.

- 2.4 **Contractor/ Vendor/ Supplier** shall mean the person or persons, firm or company, agency engaged by GEL for supply of materials, equipment and construction of Civil, Mechanical and Electrical job.
- 2.5 **Contract/ Work Order/ Purchase Order/ Service Order** shall mean the agreement and all other documents between the GEL and the Vendor/Contractors/Suppliers for supplying materials, equipment and providing the services.
- 2.6 **Drawing** shall mean and include Engineering drawings, sketches showing plans, sections and elevations in relation to the Contract together with modifications and/or revisions thereto.
- 2.7 **GEL representative/ Engineer-in-Charge (EIC)** shall mean the person designated from time to time from GEL and shall include those who are expressly authorized by him to act for and on his behalf for operation of this contract.
- 2.8 **Goods** shall mean articles, materials, equipment, design and drawings, data and other property to be supplied by Vendor to complete the contract.
- 2.9 **Site Engineer (SE)** shall mean the person deployed at site for supervision & quality control of the work, as per the Scope of work mentioned and to receive instructions from Engineer-in-Charge appointed by GEL or his representative or consultant.
- 2.10 **THIRD PARTY INSPECTION AGENCY (TPIA)** shall mean any person or outside inspection Agency nominated by OWNER to inspect equipment, stage wise as well as final, before dispatch, at CONTRACTOR's works and on receipt at SITE as per terms of the PO/ CONTRACT.
- 2.11 **PERFORMANCE AND GUARANTEE TESTS** shall mean all operational checks and tests required to Determine and demonstrate capacity, efficiency and operating characteristics as specified in the Contract Documents
- 2.12 **SITE** shall mean the Project or designated area/ location or destination for which the Contract has been issued and where the equipment/ materials shall be erected.
- 2.13 **SPECIFICATIONS** shall mean and include schedules, details, description, statement of technical data, performance characteristics, standards (Indian as well as International) as applicable and specified in the Contract.
- 2.14 **SUB-CONTRACT** shall mean order placed by the CONTRACTOR, for any portion of the contracted work, after necessary consent and approval of OWNER.
- 2.15 **SUB-CONTRACTOR** shall mean the person named in the CONTRACT for any part of the work or any person to whom any part of the CONTRACT has been sub-let by the SELLER with the consent in writing of the OWNER and will include the legal representatives, successors, and permitted assigns of such person.
- 2.16 **TESTS** shall mean such process or processes to be carried out by the CONTRACTOR as are prescribed in the Contract or considered necessary by Owner or his representative in order to ascertain quality, workmanship, performance and efficiency of equipment or part thereof. **TESTS ON COMPLETION** shall mean such tests as prescribed in the Contract to be performed by the CONTRACTOR before the Works are taken over by the Owner.
- 2.17 **CONSULTANT** shall mean outside agency other than OWNER as authorized by the OWNER hereby referred as Engineering & Project Management Consultancy (EPMC). The term includes successors, assigns of CONSULTANT.
- 2.18 **GEL's REPRESENTATIVE** shall mean the person designated as such by the Gujarat Energy Limited and shall include his authorized nominee or agent, provided however that GEL's representative to be so designated by GEL may be one person for certain aspects of this agreement and another person for other aspects of work covered by this Bid/ Contract.
- 2.19 **STORES** shall mean the GEL stores located across its operating areas.
- 2.20 **WORKING DAY** means any day, which is not declared to be holiday or rest day by Owner.

- 2.21 **APPROVED** shall mean approved in writing including subsequent written confirmation of previous verbal approval and 'Approval' means approved in writing including as aforesaid.
- 2.22 **COMMISSIONING** shall mean placing into service of the system including the plant(s), equipment(s), vessel(s), pipeline, machinery(ies), or any other section or sub-section of installation(s) pertaining to the work of the CONTRACTOR after successful testing and trial runs of the same.
- 2.23 **HSE** means Health, Safety & Environment.
- 2.24 **KICK-OFF MEETING** means the first meeting between OEM, Contractor, EPMC consultant and GEL before starting of the project, where sharing of legal and contractual requirement, reporting structure and project team by GEL and sharing of detailed project plan as per the completion timeline define in this tender document/ contract including mobilization of all required resources, sharing of consultant's organization chart, site office and, reporting structure etc.
- 2.25 **LNG Station** shall mean LNG/LCNG refueling station consist of all the applicable equipment starting from Unloading pump Skid (for unloading / transfer of LNG from transport tanker to Storage tank/s), LNG storage tank/s, regasification facilities (High/Medium/Low Pressure Vaporizers), Odorant system, high/Medium/Low Pressure cryogenic pumps (Cryogenic Pumps to increase the LNG Pressure before regassification / Vaporizers), Heating Skid, Meters, Priority Panel and equipment related to LNG Dispensing and all associated facilities like valves, hoses, gauges, piping, fittings & instruments.
- 2.26 **CNG STATION** shall mean CNG refueling facility at COCO/OMC/Franchisee location consist of all the applicable equipment starting from above/underground pipeline, inlet pressure reducing skid, compressor (Online/Booster/VIP) , CNG decanting and CNG Loading facility, CNG cylinder cascade, CNG dispenser, mobile cascade vehicle, electrical panels, meters, priority panel, air compressor, air inflator and associated facilities like valves, hoses, gauges, piping, fittings & instruments etc.

### 3. GENERAL SCOPE OF WORK

The Engineering & Project Management Consultancy (EPMC) Services to be performed by consultant shall include but not limited to the following tasks at various CNG/LNG/LCNG projects located in state of Gujarat, Maharashtra, Punjab, Madhya Pradesh, Rajasthan, Haryana and UT of Dadra Nagar Haveli.

### 4. DESIGN & ENGINEERING CONSULTANCY

#### 4.1 LNG/LCNG Stations:

LNG system/station includes Unloading pump Skid (for unloading / transfer of LNG from transport tanker to Storage tank), LNG storage tank/s, regasification facilities (High/Medium/Low Pressure Vaporizers), Odorant system, High/Medium/Low Pressure cryogenic pumps (Cryogenic Pumps to increase the LNG Pressure before regassification / Vaporizers), Heating Skid, Meters, Priority Panel and equipment related to LNG & CNG Dispensing. Scope includes

- 4.1.1 Review and approval of engineering design drawings and documents
- 4.1.2 Quality assurance verification for equipment/s or material at Vendor premise
- 4.1.3 Review and approval of final documents after inspection at Vendor works

The entire LNG storage and re-gasification system design should be checked as per compliance requirement of latest applicable National & international standards, regulations, code of practice

- NFPA 52 (Vehicular Alternative Fuel Systems)
- ISO 16924 (Natural gas fuelling stations - LNG stations for fuelling vehicles)

- Indian SMPV rules (Static and Mobile Pressure Vessels)
- Gas cylinder rules 2016 of Petroleum & Explosives Safety Organization
- PNGRB T4S for Retail Outlet
- Other applicable codes and standards

#### **4.2 CNG Stations:**

CNG station includes Booster compressors, Motor/engine driven online compressors, variable inlet Pressure compressors, CNG dispensers, CNG Cylinder cascade, priority panel, interconnecting high pressure tubing, CNG unloading / loading points, mobile CNG cascades, MCVs and HCVs for transportation of CNG from Mother stations to Daughter and Daughter Booster stations, transformer, air compressor, air inflator, UPS, DG set, HT switchgears, electrical distribution panels, lighting and earthing and other protective system. Scope includes

- 4.2.1 Review and approval of engineering design drawings and documents
- 4.2.2 Quality assurance verification for equipment/s or material at Vendor premise
- 4.2.3 Review and approval of final documents after inspection at Vendor works
- 4.2.4 Performance test and site acceptance post commissioning at GEL location

The entire CNG compression and dispensing system design should be checked as per compliance requirement of latest applicable National & international standards, regulations, code of practice

- Gas cylinder rules 2016 of Petroleum & Explosives Safety Organization
- NFPA 52 (Vehicular Alternative Fuel Systems)
- Indian SMPV rules (Static and Mobile Pressure Vessels)
- PNGRB T4S for Retail Outlet
- Other applicable codes and standards

#### **4.3 Details for design engineering LNG/LCNG System:**

- a) Review and approval of Process flow diagram, GAD, facilitation plan, Typical Layout / Isometric/P&IDs, submitted by the vendor.
- b) Review and approval of design & specifications of all equipment as per the requirement of GEL Technical scope, ASME Section VIII, EN13530 and requirements of latest versions of ISO 20421, NFPA 59A / ISO 16924 / Indian SMPV rules, Gas cylinder rules of PESO, PNGRB T4S for retail outlet and as per applicable standards
- c) List of documents for LNG/LCNG system not limited to listed below. These are the minimum documents that will be submitted by vendor and shall be reviewed approved by consultant. consultant shall also recommend the final list of the documents required Quality assurance. Consultant shall review and give observation/approve with required recommendation engineering documents within 7 working days post receipt of the same.

- a) LNG Unloading pump with sump and skid
- b) HP Pump and LP Pump & its accessories
- c) LNG Storage Tank
- d) High pressure and Low-pressure Vaporizer (Ambient Air Heated)
- e) Mass Flow meters
- f) Heating Skid
- g) SLD, GA drawing, protections, wiring diagram for Control Panels (electrical power supply, power back-up, instrumentation/SCADA, etc.), PLC Panels (For Automatic operation and manual operation), Instruments and control system for monitoring field parameters (vibration, temperature, pressure, flow, level and alarm system etc.)
- h) Electrical and earthing, lightning protection system, cable schedule

- i) Flame Detection, Low Temperature detection and Gas Detection Devices and alarm system, Cause and effect diagram with Alarms & Trips in systems as per regulation
- j) All Safety valves/ Relief valve, Isolation Valves, Control Valves/ TSV / PSV and emergency system
- k) Station Piping / Fittings /Tubing
- l) Gas Odorizing System
- m) Priority Panel for distribution of CNG to Cascade, Dispensers & MCV Fill Post
- n) Fire & Safety Systems including Fire hydrant system, water storage tank and Water pump, Safety interlocks as per regulations (e.g. temperature cut off, Pressure cut off, ESD, High tank level warning and cut off, Low tank level warning etc.)
- o) Quality assurance plan
- p) Equipment setting layout, cable, LNG piping & HP tubing route layout
- q) Technical specifications and credentials of all major equipment submitted by vendor
- r) Review of Type approval issued by PESO for equipment/material
- s) Fire extinguishers & sand buckets as per latest Gas cylinder rules and SMPV Rules
- t) SCADA system with remote monitoring and control facility
- u) Operation & Maintenance manuals for critical equipment
- v) Original Equipment / instrument catalogues for all equipment & instruments
- w) Procedures for FAT / SAT & Commissioning, Mandatory and consumable spares.

#### **4.4 Details for design engineering CNG System/CNG Station:**

- a) Review and approval of Process flow diagram, General arrangement drawings, P&IDs, Bill of material for CNG equipment (e.g. Compressor, dispenser, CNG Cylinder Cascade, UPS, Air compressor etc.) submitted by the vendor
- b) Review and approval of design & specifications of all equipment as per the requirement of GEL Technical scope, Gas cylinder rules of PESO, PNGRB T4S for retail outlet and as per applicable standards mentioned in tender documents for respective equipment/services.
- c) List of documents for CNG system/station/equipment/accessories not limited to listed below. These are the minimum documents that will be submitted by vendor and shall be reviewed and approved by consultant. consultant shall also recommend the final list of the documents required Quality assurance. Consultant shall review and give observation/approve with required recommendation engineering documents within 7 working days post receipt of the same.
  - a) General arrangement drawings for Online compressors (Engine / motor driven), Booster compressors, Variable inlet compressors, CNG Cylinder cascades (Type-1/ Type-3/ Type-4), CNG dispensers (Car/Bus/Car cum Bus), DG set, UPS and accessories etc.
  - b) P & ID for Online compressors (Engine / motor driven), Booster compressors, Variable inlet compressors, CNG Cylinder cascades (Type-1/ Type-3/ Type-4), CNG dispensers (Car/Bus/Car cum Bus), CO2 flooding system, CNG filling /decanting post etc.
  - c) Cause and effect diagrams for CNG equipment
  - d) Alarm and trip list with set points for compressor, dispenser, DG set
  - e) Mass Flow meters
  - f) Electrical and earthing, lightning protection system, cable schedule
  - g) Flame Detection, Low Temperature detection and Gas Detection Devices and alarm system as per regulations
  - h) All Safety valves/ Relief valve, Isolation Valves, Control Valves/ TSV / PSV and emergency system



- i) Station Piping / Fittings /Tubing
- j) Gas Odorizing System
- k) Priority Panel for distribution of CNG to Cascade, Dispensers & MCV Fill Post
- l) Quality assurance plan
- m) Equipment setting layout, cable route, HP tubing route layout, station lighting layout
- n) Technical specifications and credentials of all major equipment submitted by vendor
- o) Review of Type approval issued by PESO for equipment/material
- p) Fire extinguishers & sand buckets and CO2 flooding system as per latest Gas cylinder rules, PESO guidelines and PNGRB guidelines.
- q) SCADA system with remote monitoring and control facility
- r) Operation & Maintenance manuals for Original Equipment / instrument catalogues for all equipment & instruments
- s) Procedures for FAT / SAT & Commissioning, Mandatory and consumable spares.
- t) Maintenance plan for equipment
- u) Equipment layout for PESO application/approval

## **5. INSPECTION AT VENDOR PREMISES**

- 5.1. Consultant duly accredited by the National Accreditation Board for Certification Bodies (NABCB) as Type "A" Inspection Body, throughout the contract duration. In case any of the scope sector accreditation is not available, Consultant shall apply for the same and submit evidence of application duly submitted to/acknowledged by NABCB for the required scope sector codes and ensure accreditation at the earliest.
- 5.2. Consultant shall submit copy of certificate of empanelment by PNGRB and accreditation by NABCB along with all applicable IAF scope to GEL EIC immediately after receipt of LOA/ Award of contract.
- 5.3. If at any instance during contract duration, PNGRB empanelment or NABCB accreditation period is over and same is not renewed, Consultant shall inform EIC immediately and cease all material inspection activities. In such scenario, Consultant will ensure inspection is carried out through other duly accredited/empanelled agency at no extra cost to GEL (which fulfils tendered requirements for Consultant and subject to prior approval of GEL EIC).
- 5.4. Inspection of equipment/s or Materials shall be carried out at the Vendor Premises as directed by GEL. Consultant shall mobilize and reach the Vendor premises within 7 days after the intimation from GEL. All the equipment/s or materials shall be inspected as per GEL specifications, QAP, Inspection and test plan, FAT procedure and documents approved by GEL.
- 5.5. Before starting of work at vendor's premise, consultant shall himself familiarize for the work and have obtained approval/clearance from Owner
- 5.6. Consultant shall send the qualification & experience of the inspectors and get it authorized by GEL EIC. The authorized inspectors by GEL only are allowed to visit the Vendor's premises for inspection. Consultant should not deploy any other inspectors or freelancers.
- 5.7. Scope of inspection shall be as below but not limited to
  - Document / Design verification
  - Review of documents, drawings, test certificates, manual, calibration certificate etc.
  - Visual and dimensional check
  - Supervision of construction / fabrication / repair vis-a-vis specification / drawing
  - Stage wise inspection if required and called for
  - Performance test / material testing / if called for
  - Final inspection for quality / quantity as per approved drawing

- Independent testing of material
  - Any other activities related to materials checking and inspection
- 5.8. The Manpower deployed for the inspection shall be qualified, experienced as mentioned in below table and the number of people shall be sufficient to carry out the activities without any delay.

Sr	Services	Qualification	Experience
1	CNG/LNG/LCNG related materials like: Online compressors, booster compressors, CNG Cylinder Cascades, CNG dispensers, Odorization System, DCS etc.	Diploma or Degree in Engineering (Mechanical)	Minimum 8 Years (For Diploma Holder) & 4 years' experience (for degree holders) for inspection of CNG equipment like CNG Compressor, Dispensers, Cascade, DCS etc.

Note : In case of requirement of Quality Inspector in any other specific category (e.g. Electrical, Civil, instrumentation etc.), TPIA shall arrange the same within 15 days from the date of written communication from respective GEL representative.

- 5.9. GEL will not be responsible or liable to provide / reimburse any transportation, accommodation, food, communication mode or any other facilities or expense incurred for inspection.
- 5.10. The Bidder shall provide proper means of transportation and communication systems (Mobile and e-mail facilities etc.) to all of their engineers for smooth functioning and reporting at his own
- 5.11. The bidder is expected to achieve the tasks within the stipulated time as mentioned or decided prior to start of project, and unless and until there are valid reasons for the delay and the same are submitted in writing to the GEL engineer In-Charge
- 5.12. GEL expects to carry out the inspection activities in multiple vendor premise's simultaneously at any time. Accordingly, the consultant is expected to arrange required inspectors accordingly.
- 5.13. The bidder shall submit details of its organization structure along with bio data of inspectors mentioning minimum eligibility and qualification criteria as per the tender document or specified by PNGRB authorized accreditation agency. The qualification criterion for inspectors if any released by PNGRB authorized accreditation agency overrules the GEL qualification criterion.
- 5.14. The consultant has to provide unique identity cards to all the inspectors. The Consultant will provide all required PPE's i.e. crash helmet in-case of two-wheeler, safety helmet, safety shoes, etc. and uniform to all the inspectors working at vendor's premise.
- 5.15. All engineers deployed at vendor's premise shall have proper communication system (cell phone) and their own conveyance for mobility between different vendor's premise allotted to them
- 5.16. Consultant to submit daily progress report during inspection and comprehensive visit report along with compliance report as per the requirement of GEL



## **6. PROJECT PLANNING AND SCHEDULING**

- 6.1 Collection of annual plan and list of CNG/LNG/LCNG stations from GEL to be delivered for the Financial Year.
- 6.2 Preparation of an overall project schedule in consultation with GEL.
- 6.3 Meeting with Franchises/ Oil Marketing Companies (OMC) & Dealer, Consultant for preparing layout plan and further assistance for application to PESO office, statutory authority (DM/ PC NoC, Power supply company, NH, NA, construction etc.), W&M stamping authority for securing necessary permissions/ consent.
- 6.4 Ensuring coordination with Franchises/ OMC & Dealer, PESO office/ statutory authority/ Consultant for securing approval/ permission/ clearance in time to meet the project schedule.
- 6.5 Review, scheduling and monitoring of Civil, Mechanical, Electrical Contractor's manpower, machinery, tools tackles, equipment and other resources in line with GEL terms and conditions as well as in line with project requirement.
- 6.6 Providing technical/ commercial assistance and required documents to get approval/ permission/ clearance in time.
- 6.7 Close coordination with local agencies/ third party/ authorities, Franchises/ OMC, Dealer and others for obtaining clearances/ work permits for work execution.
- 6.8 Liaison with the Franchises/ OMC/ Dealers contractors, suppliers, vendors and other stake holders to execute/ commissioning of CNG station as per Project Plan.
- 6.9 Project Cost Control, Management & Monitoring
- 6.10 Conduct HSE/ AI Risk Assessment and preparation of mitigation plan of Project work/ Activity/ Task prior to execution.
- 6.11 Issuance of work authorisation/ permit to work to vendors/ Contractors.
- 6.12 Submission of Daily Progress Report (DPR) and proposed Work Schedule for next working day to GEL representatives.
- 6.13 Present and Submit Project Progress Reports & Delay/ Deviation Analysis every fortnight or as and when required by GEL. Prepare Sign-off and submission of MoM to GEL.
- 6.14 Issuance of materials/ equipment for CNG/LNG/LCNG project sites. And management of issue material at Site/Stores/ Warehouse provided by GEL.
- 6.15 Material reconciliations with GEL Contractors after commissioning of each CNG station and/or end of the Financial Year.
- 6.16 Submission of project information for highlighting slippage and hold ups for actions from GEL/ Franchises/ OMC/ Dealers, Contractors, Suppliers, Vendors.
- 6.17 Review and expedite project progress and forwarding advance recommendations for time extension/quantity amendment/deviations if required with proper justification for respective purchase order/contract.
- 6.18 Resolving of disputes/ disagreement on scope of work among Franchises/ OMC/ Dealers, Contractors, Suppliers, Vendors and escalate to GEL for information and further action if any.
- 6.19 Submission of project completion reports including highlighting of lessons, issues and concerns are encountered and solutions provided during the execution.
- 6.20 Ensuring all legal/salutory compliance of GEL contractors' viz. minimum wages Act, Workers Compensation Act, PF & ESI Acts, Safety Acts, Accident/Insurance Acts, Labour license & Acts, Child Labour laws, Insurance policy etc.

## **7. EXECUTION/ CONSTRUCTION/ ERECTION/ SUPERVISION/ INSPECTION & COMMISSIONING**

- 7.1 Physical verification of Plot/ Land of Franchises/ OMC/ Dealer in which CNG installation work is to be executed against layout/drawings issued for construction and to confirm fitment of facilities to be constructed and their distances against the issued drawing and details at site.
- 7.2 Liaison & close coordination among GEL, Contractors, Venders, Suppliers, Franchises/ OMC/ Dealer and follow-up for completion of the project on time.
- 7.3 Review of detailed engineering drawings issued for construction along with contractors to check feasibility at site, if any discrepancy/ miss match found in drawings shall bring to the notice of GEL consultant and/or GEL EIC.
- 7.4 Ensure marking for gas tubing trench/ cable trench/ gas piping as per equipment plan at site, modify the layout accordingly and inform to GEL consultant and/or GEL EIC, Franchises/ OMC/ Dealer.
- 7.5 Supervision, monitoring and inspection of civil/ mechanical/ electrical construction activities, as per the GEL approved drawings/documents, guidelines, applicable standards and best engineering practices.
- 7.6 Coordination with all stakeholders for expediting work activities at project sites to meet the targeted deadline.
- 7.7 Project progress monitoring and project management documentations are to be maintained and also should be kept under safe custody along with relevant photographs showing daily progress for sharing to GEL representatives and management.
- 7.8 Timely intervention and intimation to be given to Franchises/OMC/Dealer and GEL contractors to start and complete their respective work area, without affecting or delaying work of others depended agencies/stake holders.
- 7.9 Close coordination and follow-up with GEL representative to get solution on technical query/issues raised by contractors, if any; against drawings issued for constructions/specifications. Tracking and maintain record of the provided solution and timeline of the same.
- 7.10 Arrange project review meeting with Contractors/Suppliers/Vendors/Service providers/stake holders on weekly basis or as per mutually agreed intervals and submit progress report, concerns & issues in writing to GEL representative/consultant for their knowledge and intervention and resolution if any.
- 7.11 Verification and certification of materials and equipment at GEL stores/sites as per the GEL approved specifications and QA/QC plan during pre-dispatch inspection, receipt at site and during execution.
- 7.12 Monitoring and ensuring of statutory & HSE compliances followed by the contractors/other stake holders at project sites.
- 7.13 Ensure safe unloading, installation, connectivity and hook up activity for all the equipment and services.
- 7.14 Physical verification of all CNG assets for FIT FOR PURPOSE.
- 7.15 Coordination with utility company, vendor, OMC dealer, OMC representative, franchisee and other stake holders for release of electric power supply for project site.
- 7.16 Ensure pre commissioning checks including testing (Hydro test, Pneumatic leak test with N<sub>2</sub>, flushing etc. ) as per GEL stand operating procedures, guidelines and check lists, OEM procedures, statutory procedures.

- 7.17 Commissioning of all equipment as per planned schedule, post securing applicable approvals from statutory bodies/authorities in due consultation and coordination with GEL EIC/consultant/Franchises/OMC/Dealer.
- 7.18 Participate in OEM/ civil/mechanical/electrical Contractor's performance review meeting as per the GEL requirement.
- 7.19 Coordination with GEL representative and local authorities/dealer/OMC/franchisee for stamping from W&M authority for CNG/LNG dispensers.
- 7.20 Ensure commercialisation of CNG station after securing all the required approvals and completion of all the balance activities in any regard.
- 7.21 Coordination with all the stakeholders for completion of HOTO process and closeout of punch points if any.
- 7.22 Submission of all project closeout documents like as built drawings, material test certificates, testing reports of CNG assets and associated facilities, approved deviation reports, project execution reports, material consumption report, warranty/guaranty cards, undertaking, amendment reports, work completion certificates etc as generated during project execution to GEL representative/consultant. Documents should be submitted in the form of Hard and Soft copies as per GEL checklist.
- 7.23 Assist **GEL** in arbitration cases filed by any contractor and provide necessary documentary evidence as when by the **GEL**.
- 7.24 Assist GEL EIC for LD calculation, Payment & liability details, asset capitalization details, work in progress details.
- 7.25 Review and approval of "As-built documents and drawings" prepared and submitted by OEM/contractor.
- 7.26 Project close out and HSE close out and furnishing completion / inspection certificates to **GEL**.
- 7.27 CONSULTANT shall suggest measures to cut-down cost and time over run without compromising the quality of work required in implementing the project.

## **8. MEASUREMENT, CERTIFICATION AND BILL PROCESSING:**

- 8.1 Verification and certification of Contractor's/Supplier's running/final bills as per the T&C of the contract.
- 8.2 Providing relevant support to owner representative for processing of all certified bills for payment along with verified measurement sheet, supporting documents, project reports, testing reports, compliance reports/documents, as built drawings, photographs to GEL representative/Consultant. Documents should be submitted in the form of Hard and Soft copies.
- 8.3 Processing of closure of contracts issued by GEL with delay analysis, recommendation for Liquidity damages (LD) as per the T&C of the contract.
- 8.4 Settlement, certification and recommendations for extra claims raised by the GEL contractors with proper justification.

## **9. MANPOWER RESOURCES**

The CONSULTANT shall deploy qualified and experienced personal in required numbers as per the GEL requirement to ensure:

- HSE in all stages of work as per GEL HSE standards, guidelines and best international practices
  - Quality in all stages and aspects as per requirement of codes, standards, specifications and best international practices
  - Compliance applicable codes, standards, procedures and guidelines and PNGRB requirements.
  - Timely & expeditious completion of the project
  - Economize project expenses
- 9.1 Consultant shall deploy adequate qualified, experienced manpower engineers/technical non-technical personals for design and engineering, project management, site supervision, inspection, quality assurance and quality control during project life cycle.
- 9.2 Submission of organisation structure at HO & project site to GEL representative.
- 9.3 CV of the qualified manpower to be submitted to GEL in advance. GEL/Engineer in Charge to review the above-mentioned information and shall evaluate the manpower to be deployed. CONSULTANT shall depute the manpower after approval from GEL / Engineer in charge. GEL shall be at liberty to object/change the nomination without giving any reason whatsoever and ask CONSULTANT to submit more CV for better candidate for the said requirements.
- 9.4 Ten days prior written notice to be given to GEL representative for replacement of deployed qualified approved manpower. Replacement shall be done only after consent from management authorised representative of GEL.
- 9.5 Consultant shall be liable to replace/substitute any deployed manpower resources at no extra cost to GEL.
- 9.6 Manpower deployed for the project shall be qualified, experienced in the similar field and the number of people shall be sufficient to carry out the activities mentioned in scope of work without any delay.
- 9.7 EPMC shall quickly mobilize and deploy adequate manpower resources at all project sites as per the need of GEL.
- 9.8 EPMC shall provide proper office, PPEs as per GEL's PPE matrix (including fire retardant suit for commissioning or gas charging time), safe local transportation and communication systems (Computer, Mobile with e-mail facilities) to all their project management staff.
- 9.9 GEL shall not be responsible or liable to provide/reimburse any transportation, accommodation, food, communication facility or any other facilities or expense incurred for project monitoring and reporting other than those specified in the tender document.
- 9.10 Project Team - Qualification and Experience...
- i. **Project Manager (responsible for overall EPMC contract execution):**
    - ✓ Shall have experience in managing multiple projects in Oil & Gas sector or CGD industry
    - ✓ Graduate Engineer from any discipline - Experience - 10 Years  
Experience in LNG/CNG system design and Hydrocarbon Industry (i.e. Hydrocarbon Process Plants, Pipelines (Hydrocarbon/ Crude / Oil / Gas), Petrochemical Plant, LPG Plant, Refinery etc.)
  - ii. **Project Zonal Coordinator (responsible for zone wise EPMC contract execution):**
    - ✓ Shall have experience in managing multiple projects in Oil & Gas sector or CGD industry
    - ✓ Graduate Engineer from any discipline - Experience - 7 Years or
    - ✓ Diploma Engineer from any discipline - Experience - 10 Years
  - iii. **Project Engineer (responsible for day to day coordination with stake holders for timely commissioning of CNG station):**

- ✓ Diploma Engineer from any discipline - Experience - 4 Years
- ✓ Diploma Engineer having experience of CNG/LNG segment - Experience – 2 Years experience in LNG/CNG system design or project execution in any Hydrocarbon Industry (i.e. Hydrocarbon Process Plants, Pipelines (Hydrocarbon/ Crude /Oil / Gas), Petrochemical Plant, LPG Plant, Refinery etc.)

## 10. PAYMENT TERMS

### For LNG/LCNG System

#### 10.1. Payment Terms for review and approval of Engineering Design Drawings and Documents

Sr.	Description	% age of total Lumpsum fees
1	Review and approval of Process flow diagram, GAD, QAP and P&IDs, Datasheets for first LNG System of each vendor in single contract as per submitted by vendor.	20%
2	Review and Approval of Engineering drawings and documents for first LNG System of each vendor in single contract as per clause no. submitted by vendor.	60%
3	After dispatch of material/equipment's for first LNG System of each vendor in single contract	10%
4	After dispatch of material/equipment's of last LNG System of each vendor in single contract	10%

#### 10.2. Payment Terms for Review and approval of final documents received from the Vendor after completion of Inspection

Sr.	Description	% age of total Lumpsum fees
1	Submission of compliance report to GEL after review of Inspection reports submitted by the Vendor and dispatch clearance.	100%

#### 10.3. Payment Terms for per document review and approval in-line with existing approved documents

Payment against per document review and approval for upgradation/second station in single contract for same vendor shall be done on per document basis. Consultant has to raise the RA bill on monthly basis

### For CNG equipment:

#### 1. Payment Terms for review and approval of Engineering Design Drawings and Documents

Sr.	Description	% age of total Lumpsum fees
1	Review and approval of GAD, QAP and P&IDs, Datasheets, Electrical drawing, cause & effect diagram, operation philosophy etc. for first CNG equipment of each vendor in single contract submitted by vendor.	20%
2	Review and Approval of Engineering drawings and documents for first CNG equipment of each vendor in single contract submitted by vendor.	60%
3	After dispatch of material/equipment's for first CNG equipment of each vendor in single contract	20%

**Payment terms for deputation of manpower at Vendor premises for Inspection (CNG/LNG/LCNG)**

1. Payment against deputation of manpower for inspection at Vendor premises will be done on man days basis and the consultant has to raise the RA bill on monthly basis.

**Payment terms for deputation of manpower at GEL sites (LNG/CNG/LCNG) for Inspection /supervision of project execution activities**

1. 90% of man month rate shall be payable against the man month spent during EPMC service as per the Scope of work
2. 10% of man month rate shall be payable against the acceptance of project completion report, commissioning & commercialisation of the CNG/LNG/LCNG station and final acceptance by GEL.

If commissioning/commercialisation is on hold/delayed or not done due to reasons not attributed to consultant GEL shall release the balance payment, which is on hold. However decision of GEL EIC shall be final and binding to consultant.

3. In case, where the CONSULTANT is not able to depute required manpower or in case CONSULTANT manpower fail to deliver the requisite services in time, GEL has authority to deduct the charges from the CONSULTANT invoice on pro-rata bases.

## **11. DELIVERY SCHEDULE FOR LNG/CNG STATION**

- 11.1 Project Start Date:- GEL will intimate start date of the project for a CNG station vide an Email communication (Zero date start from site selection and site handover to EPMC).
- 11.2 Project End Date:- Day on which Final Closeout documents (after commercialisation of CNG Station) will be submitted will be considered as Project End Date.
- 11.3 Time period expected for Completion of Project is mentioned in the table below:

Particular	COCO	Franchisee	OMC
	No. of Days		
Completion period of LNG/LCNG Station	365	365	-
Completion period of Online Station	365	365	180
Completion of Daughter Booster Station	-	365	180

- 11.4 Penalty will not applicable for force majeure cases.
- 11.5 If commissioning/commercialisation is on hold/delayed or not done due to reasons not attributed to consultant GEL shall release the balance payment, which is on hold. However decision of GEL EIC shall be final and binding to consultant.

## **12. PENALTIES**

The following critical parameter describes the system performance and service level expectations and requirements during the Implementation phase of **CONTRACT**. The service level includes target performance measures, unacceptable measures and the related penalties for not meeting required service levels.

- 12.1 Penalty of 1% shall be imposed on delay of every 07 Days on project time line given in delivery schedule, maximum penalty is limited to 5% of basic invoice value.



 <b>GUJARAT ENERGY</b>	<b>TECHNICAL SCOPE OF WORK FOR HIRING ENGINEERING AND PROJECT MANAGEMENT CONSULTANCY SERVICES FOR CONSTRUCTION OF VARIOUS TYPES OF LNG/LCNG/CNG STATIONS IN GEL OPERATIONAL AREAS</b>
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- 12.2 Penalty of Rs. 1500 per day will be deducted if the consultant fails to report at Project site where work is in process.
- 12.3 Penalty of Rs. 500 per day will be deducted per site per instant, if the consultant fails to report daily/monthly report to GEL EIC
- 12.4 Partial or Total Amount of Penalties can be waived off by CNG Project Lead, based on the evidences submitted for delay in completion of CNG Project.

Sr. No.	Parameter	Service Level Agreement	Penalty
1	Reportable Incident	Zero Incident	<p>For each Fatal Incident - Rs. 1,00,000 or 10% of Total contract value, whichever is lower</p> <p>For each LTI* - Rs. 20,000 or 10% of Total contract value, whichever is lower</p> <p>For each MTC/RWDC Case# - Rs. 10,000 or 5% of Total contract value, whichever is lower</p> <p><i>Note: Penalty shall be imposed over and above the payment &amp; compensation that would be made by the service provider to the injured person or family of deceased vide the statutory provisions.</i></p>
2	Initial Mobilization of approved Manpower at project site	Deployment within 2 weeks of written confirmation from GEL/EIC	0.5% of total basic value per week of delay (when delay is less than week period, it shall be calculated per day basis) Subject to maximum of 2% of basic contract value. The same will be deducted from the RA bills submitted subsequent to start of the work
3	Non-deployment /Short fall/Demobilization/Unauthorized Absence of resources	Required manpower at site throughout the project execution	<ul style="list-style-type: none"> <li>Rs. 1,000 per instance for absence or demobilization without prior intimation.</li> <li>Rs. 5,000 per day per person beyond absence of 7 days.</li> </ul> <p><i>Note:</i></p> <ol style="list-style-type: none"> <li>Penalty shall be imposed with reference to manpower and equipment requirement during kick-off meeting / pre-mobilization / at different stages of project jointly agreed by <b>GEL &amp; CONSULTANT</b>.</li> <li>In addition to penalties mentioned above, <b>CONSULTANT</b> shall not be eligible for payment against applicable SOR line item for that month in case of absence exceeds more than 15 days for that month.</li> </ol>
4	HSE Penalties	Un Authorized Work	Rs. 10,000/- per day
		Working without PTW/ WA	Rs. 10,000/- per day
		Non – compliance – Safety Training Card	Rs. 1,000/- per person
		Non – Compliance – Health Check up	Rs. 2,000/- per person
		Non – Compliance – PPEs	Rs. 500/- per person per instance

 <b>GUJARAT ENERGY</b>	<b>TECHNICAL SCOPE OF WORK FOR HIRING ENGINEERING AND PROJECT MANAGEMENT CONSULTANCY SERVICES FOR CONSTRUCTION OF VARIOUS TYPES OF LNG/LCNG/CNG STATIONS IN GEL OPERATIONAL AREAS</b>
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Sr. No.	Parameter	Service Level Agreement	Penalty
5	Quality in project documentation	<ul style="list-style-type: none"> <li>Quality in project documents, various type of reports and drawings</li> <li>Non-conformity from specifications and standard requirement</li> </ul>	Rs. 500/- per instance if found any correction post submission to <b>GEL</b> .

In addition to above requirement, performance of individual manpower deputed at project site will be evaluated and data area captured every two months.

Sr. No.	Parameter	Service Level Agreement	Penalty
1	Compliance to <b>GEL</b> performance requirement	Performance rating less than 60% against monthly ER	<p>Following actions to be initiated against non-achieving of rating for ER of 60%.</p> <ul style="list-style-type: none"> <li>First two month of low ER rating-Warning letter to be issued and <b>CONSULTANT</b> will be allowed to continue the work and shall demonstrate improvement.</li> <li>Performance of the manpower with ER&lt;60% as per the above case will be evaluated for one month further and if there is no improvement within next month and still ER is &lt;60%, a second warning letter to be issued and penalty of Rs. 10,000/- to be deducted for every month from the date of first warning letter issued.</li> <li>If there is no improvement observed after issuance of first &amp; second warning letter and still ER&lt;60%, penalty of Rs. 10,000/- to be deducted for every month from the date of second warning letter issued. Further <b>GEL</b> may take suitable action for removal/replacement of the resource as per the contract if there is no improvement observed after above.</li> </ul>

**Important Notes:**

Evaluation of individual will contain three different performance parameters and are given weightage as mentioned below

- Personal Qualities – 30%
- HSE Compliance – 30%
- Overall Contribution to project – 40%

Any LTI incident on **GEL** site attributable to **CONSULTANT** shall lead to over-all CPAR score reduced by 50% of obtained score.

Any MTC incident on **GEL** site attributable to **CONSULTANT** shall lead to Over-all CPAR score reduced by 25% of obtained score.

**CONSULTANT** to note that, **GEL** reserves the right for continuous review and change in Contractor Performance Assessment & Review (CPAR) procedure and requirements during the **CONTRACT** period and same shall be applicable on **CONSULTANT** during **CONTRACT** period.

**\*LTI - Loss time Injury**

A disabling Occupational Injury which results from a work-related activity or from a single instantaneous exposure in the work environment and that results in a person being unfit for work beyond the day of the incident. Where the injured party returns to work on the following day but subsequently has to take time off as a result of the injury this shall count as a Lost Time Injury.

**# MTC - Medical Treatment Case**

A work-related injury case is classified as Medical Treatment Case (MT) when the management and care of the injured person is above and beyond First Aid

**# RWDC - Restricted Work Day Case**

Any work-related Injury Case (other than a fatality or lost workday case) which results in a person being unfit for full performance of their regular job on any day after the work-related injury

Note: For further details on glossary (terminology/definitions) and guidelines on same, refer **GEL** approved Guideline on Glossary related to **GEL** HSE incident Statistics

**Annexures**

- **GEL** Life Savers
- PPE Applicability Matrix
- Training Applicability Matrix

**13. GEL SCOPE**

- 13.1 GEL shall provide detailed engineering drawings, material specifications, work specification and scope of work of vendor, supplier and contractor, project site locations, , applicable contracts(for calculation of extra claim or levying LD) and other suitable information, which is required to execute the job.
- 13.2 GEL will intimate the plan of CNG station to be executed in a year.
- 13.3 GEL will intimate start date for every CNG project site.

**14. OTHER CONDITIONS**

- a. The Bidder shall perform the work under this CONTRACT with diligence and conforming to the best international practices available in this area.
- b. The Bidder shall deploy and engage in-house team only.
- c. The Bidder shall keep all the assessment and relevant details and reports be bound by the terms of confidentiality.
- d. The Bidder shall perform their obligations conforming to rules, regulations and procedures prescribed by law.
- e. The Bidder should intimate in advance any client's obligations for timely completion of activities (e.g.) requirements of statutory norms, regulatory authorities etc.

- f. Any activity required to be carried out for completion of the work though not specifically mentioned in the tender document shall be carried out at no extra cost to GEL.
- g. The Bidder shall attend & make presentation of projects status at review meetings taken by GEL management at corporate offices of GEL from time to time for expeditious completion of the project within the quoted lump sum price only, which shall be participated at appropriate level by BIDDER.
- h. The Bidder shall put in requisite efforts to achieve accelerated time schedules, if so required, at no extra cost to GEL

## **15. SUB-CONTRACTING OF WORKS**

No part of CONTRACT/ WORK shall, in any manner of degree shall be transferred, assigned or submitted by the CONSULTANT directly or indirectly to any person, firm or corporation whosoever

## **16. HEALTH, SAFETY, ENVIRONMENTAL (HSE) REQUIREMENTS**

- CONTRACTOR are the key stake holder and an integral part of **GEL** business. CONTRACTOR'S Quality, Health, Safety and Environment (QHSE) performance reflects on the COMPANY'S business performance and reputation. **GEL** has established QHSE Management Systems, Procedures & Guidelines to ensure compliance with **GEL**'s QHSE requirements. These requirements apply to all jobs whilst conducting work for **GEL** including; Project, Construction, Operation & Maintenance, Field Operations and Services within any given contract or agreement.
- The overall objective of QHSE management in contract/ agreement is to improve the QHSE performance in all aspects of activities. Active and on-going participation by both the **GEL** and **CONSULTANT** is essential to achieve this objective.
- **CONSULTANT** to ensure that the manpower deployed shall comply with the requirements of the **GEL** HSE Management System, QHSE policy, standard, procedures, guideline & Life Savers at work.
- **CONSULTANT** shall ensure issuance of Identity Card to their team members / manpower.
- **CONSULTANT** shall ensure Permit to work (PtW/WA) is available with execution contractor before start of the works.
- **CONSULTANT** to arrange work related Personal Protective Equipment (PPEs) for all the deployed staff/work force and ensure proper use during the execution of job
- **CONSULTANT** shall ensure contractor carry out the work within the duty hours/office hours only. No Work shall be carried out without permission of **GEL**'s representative beyond the official duty hours unless otherwise agreed upon prior to start of work and recorded appropriately.
- **CONSULTANT** shall ensure/certify that all tools, tackles, appliances, machines, vehicles, instruments or other equipment deployed by contractor are Fit for Purpose and maintained safe working condition at all times and are used only by authorized and competent persons
- **CONSULTANT** shall ensure that all the QHSE requirements are properly discussed for any sub-contracted activities with **GEL**. No such activity shall be performed without clearance from **GEL** management.

- **CONSULTANT** shall ensure that all Hazards, near miss, accident, incident, injuries are reported promptly to **GEL**. Action arises due to reported Hazards, near miss, incident investigation; audit/inspection shall be closed out as per agreed timelines with site in-charge
- **CONSULTANT** shall review the necessary arrangements made by contractor for safe custody of equipment, materials in stores/warehouse and at site by contractor.
- **CONSULTANT** shall monitor that the contractor has ensured safe transportation, storage and handling of materials to prevent any damage which may impair safe performance of the equipment / material etc.
- **CONSULTANT** shall to ensure that immediate actions are taken to hospitalize injured person(s).
- **CONSULTANT** to monitor that the contractor is maintaining an injury free, incident free workplace and protect people from harm caused by work activities
- **CONSULTANT** shall ensure use of seatbelts while driving four-wheeler and use of crash helmet for Two-wheeler riders during job execution
- **CONSULTANT** to review that the OEM/contractor is ensuring Lock out and Tag out (LOTO) after de-energizing and double check before starting any jobs. In case of contractor conducting job for the purpose of fault finding & monitoring of voltage & current it is to be considered live working and all PPE'S to be worn to avoid exposure of flash arc current
- **CONSULTANT** to check that the use of open wires in sockets, use of wires with tape joints shall not be accepted at work site.
- **CONSULTANT** to check that contractor is ensuring proper collection, storage and disposal of solid / liquid waste as per **GEL** procedure and guidelines.
- **CONSULTANT** manpower/work force do not smoke or resort to misuse of drugs, medicines or alcohol while on duty.
- **CONSULTANT** manpower shall follow **GEL** practice for safe working and also ensure that the same are followed by contractor/sub-contractor at site / office at all the time.
- **CONSULTANT** to note that any breach of the QHSE requirements shall be deemed by the **GEL** to be a material breach of the terms & condition of the contract. **GEL** shall be entitled to take appropriate actions including instructing the **CONSULTANT** to (a) remedy the breach; (b) suspend the work or (c) terminate the contract.
- **CONSULTANT** to note that all activities shall be carried out as per **GEL**'s documented procedures and QHSE requirements, deviation from it shall be dealt with very strictly.
- **CONSULTANT** shall employ resources who will perform this job must have certain qualifying requirements in terms of qualification, knowledge, skill, behaviour to achieve the job end results. New recruitments for proposed job/ duty, should be trained, educated, tested, certified and made and declared competent to perform the job effectively, in scheduled time with safety, quality and statutory compliances. Competency training and test should be regularly conducted. The training may be in-house or out-house and it starts with the induction, for new recruits, and refresher or need based training for existing work force, to check, maintain their competency level. The training may be in class room for understanding theory and in plant training or simulation for practical purpose. Competency training needs for resources are identified and provided as per **GEL** requirements. Charges for Training which

will be provided by **GEL** through outsourced agencies shall be debited to **CONSULTANT**.  
Training frequency and training matrix is enclosed with this document.

## **17. HIRING OF 4-WHEELER VEHICLE FOR ACTIVITIES**

- 17.1. The Bidder shall provide commercial taxi passing vehicles on “Monthly basis Hiring of Vehicle” along with the driver.
- 17.2. Bidder shall provide the vehicle at the Base Location agreed between EIC and bidder. Base Location can either be COCO CNG station of Gujarat Energy or Gujarat Energy Office or the other location. A minute of meeting should be made between Bidder and EIC if any other location is decided by EIC.
- 17.3. Distance of the trip will be counted from Base location as decided by EIC of the company.
- 17.4. The vehicles deployed by bidder during the contractual period at any point of time should be well maintained and in perfect running condition as per Gujarat Energy’s requirement with proper pollution check and valid pollution certificate.
- 17.5. The Bidder shall provide one-point contact person at each Cluster for resolving day to day operational issues.
- 17.6. In case of break down / servicing / repair, the Bidder shall provide alternate vehicle of same Make and model or higher failing which vehicle shall be hired from any other source / sources at the risk and cost of the Bidder.
- 17.7. In case of non-reporting / refusing to provide the requisite Vehicle, the same may be hired from any other source(s) at the risk and cost of the bidder, besides any other penal action which may be include termination of contract.
- 17.8. The maintenance cost, charges of fuel (petrol/diesel/CNG), road tax, salary of the driver, the overtime, overnight stay arrangement for driver and mobile phone charges of driver etc. are the responsibility of the Bidder and should be paid by the bidder. Bidder to pay toll taxes, parking charges.
- 17.9. Driver shall not be allowed to take Company’s hired vehicle for his daily lunch / dinner during duty hours.
- 17.10. Insurance: Bidder to ensure insurance is available as per statutory norms.
- 17.11. GEL reserves the right to get the meter calibrated or checked at any time at its sole discretion and in the event of any error / fault in the meter being noticed, the bill for the journey undertaken (including those undertaken earlier) would be adjusted, besides any other penal action which may even lead to termination of Contract.
- 17.12. The Vehicle sent to our office/site/ CNG stations on our requisition must have all relevant valid statutory documents like registration Book / Driving license / Insurance / Road Tax receipt / Permit fee / pollution certificates / mobile phone etc.
- 17.13. The bidder must provide the photocopy of the Registration Documents of the vehicle duly attested / notarized and certified by the owner of Contractor / Agency. However, the original registration paper shall be provided by the bidder on demand in case any further verification is required in case of any doubt.
- 17.14. The bidder shall maintain the Log Book for the vehicle. The Log Book should be duly signed by the Engineer In charge which would indicate the Vehicle No, opening and the closing meter reading with time and date at the point of starting / ending the journey, Reason for travelling.



It should be ensured that there is no overwriting in the Logbook. In no case Logbook without signature will be accepted for payment.

- 17.15. The bidder shall provide vehicles not older than five year from its manufacturing date and shall not be used for more than 1.5 Lakh kms. reckoned from the date of award of contract
- 17.16. Vehicle should be (Petrol/Diesel/CNG) and complying to emission norm of Bharat Stage VI/ latest version.
- 17.17. Vehicles details are shown as under and the same shall be taken in to consideration by the bidder while quoting rates in Commercial Bid.

Type of Car: Hatch Back or Sedan with AC and shall suitable for transportation of GEL prover. Approx. size of prover shall be:

- a. Length: 4 feet
- b. Width: 3 feet
- c. Height: 2 feet

Engine: Minimum 1175 CC

Make of Car: - Tata, Maruti-Suzuki, Ford, Toyota, Nissan, Renault, Datsun, Fiat, Hyundai, Honda, Kia etc.

Van/Mini Van or similar type vehicles are not accepted (e.g. Maruti Suzuki Eeco)

- 17.18. Bidder needs install VTS system in the vehicle for monitoring and payment purpose. VTS specification is provided along with this document separately.
- 17.19. All kinds of repairs / maintenance cost, charges of petrol/Diesel/CNG, oil, lubricant, fee towards licenses/registration taxes such as road tax etc., salary/ overtime of the driver, insurance premium etc. are the responsibility of the bidder and shall be borne by the bidder all along.
- 17.20. Rates given in the contract will remain firm for entire contract period. No escalation will be provided to bidder if there is a change in CNG rates.
- 17.21. Bidder shall ensure that any person entering inside vehicle has insurance.

#### **PENALTY TERMS:**

- 1. If the vehicle is not available for any activity then a penalty of Rs. 1000 per instance in addition to the penalty for not attending planned activities mentioned in penalty table of Scope of Work will be levied on consultant.

# **CONTRACT MANAGEMENT**

## **QHSE REQUIREMENTS**

### **SCOPE AND APPLICATION**

Contractor/Service providers are the key stake holder and an integral part of Gujarat Gas Ltd (GGL's) business. Contractors'/Service provider' Quality, Health, Safety and Environment (QHSE) performance reflects on the company's business performance and reputation. GGL has established QHSE Management Systems, Procedures & Guidelines to ensure compliance with GGL's QHSE requirements. These requirements apply to all jobs whilst conducting work for GGL including; Project, Construction, Operation & Maintenance, Field Operations and Services within any given contract or agreement.

The overall objective of QHSE management in contract/agreement is to improve the company and Contractor's/Service providers' QHSE performance in all aspects of activities. Active and on-going participation by both the GGL and Contractor/Service provider is essential to achieve this objective.

### **RESPONSIBILITIES**

It is responsibility of GGL management and staffs to ensure that all Contractors/Service providers work under their direction & control are provided with relevant Integrated Management System (IMS) Policies, Procedures & Guidelines that describe the GGL requirements for undertaking work within the company. It is also the responsibility of Contractors/Service providers to ensure that their staff are informed of and comply with GGL's requirement whilst working for the company.

GGL HSE department provides advice and assistance on QHSE requirements across the complete spectrum of all work activities. Contract Owner (Department Head) and Contract Holder (Work in-charge) are responsible to ensure safe execution of work/service include the following:

- Ensuring that the QHSE Policy, Procedures & Guidelines are known and understood by all contractors'/service providers' staff and work force
- Monitoring, Inspecting & Auditing execution of work, activities to ensure adherence to the QHSE compliance requirements

The Contractors'/Service provider' will take the responsibility for implementation of GGL's QHSE Policy, Procedures, Guidelines and other requirements with the advice and support of the GGL's Contract Owner / Contract Holder and HSE representative.

Contractor/Service provider to ensure that all aspects relating to QHSE are adequately addressed and implemented in accordance with the GGL QHSE requirements and QHSE Management Plan, which shall include the management processes and activities to be implemented during the course of work with GGL.

Contractor/Service provider shall be responsible for ensuring that adequate HSE resources are put in place to enable satisfactory implementation of QHSE Management Plan.

This responsibility also applies to ensure the Health and Safety of the people are directly and indirectly engaged / involved whilst working or present at GGL's work area / sites.

## **MOBILIZATION**

- Post selection and awarding of contract, GGL shall arrange a kick-off meeting with Contractor/Service provider where GGL team members Contract Owner (CO), Contract Holder (CH) & HSE representative) will discuss on QHSE Management aspects / plan and requirements in order to make sure that Contractor/Service provider and their team are fully understand the expectation of GGL. During the meeting, QHSE Management Plan shall be discussed and agreed between GGL and Contractor/Service provider
- Contractor/Service Provider shall ensure that all tools, tackles, equipment, machineries & instruments are adequately deployed and are 'Fit for Purpose'. Pre mobilisation checks/inspection shall be carried out by GGL team for the same before the start of work.
- GGL emphasizes on the importance of the Health and Fitness of all staff/work force deployed at GGL work sites. Contractor/Service provider shall adhere to medical check-up as per the GGL Health check-up matrix (as applicable)
- A proper HSE orientation and training will be organised by GGL for the Contractor/Service provider workforce before the start of work; under no circumstances should the Contractor/Service provider commence the work unless they have undergone the HSE training (as applicable)
- Contractor/Service provider shall ensure that all their staff/work force are provided required Personal Protective Equipment (PPEs) as per GGL PPE matrix (as applicable)
- Contractor/Service Provider shall ensure all required emergency arrangements like Medical treatment, FIRST AID box and Fire fighting equipment (as applicable)

## **EXECUTION**

Contractor/Service provider is responsible to ensure the compliance with GGL QHSE requirements. GGL overall QHSE performance is directly influenced by the contractors' performance.

- Contractor/Service provider is responsible for QHSE compliance monitoring at site/work activities to ensure that work/activity is performed in a safe manner. Moreover, they are responsible for reporting of all incidents, Hazard and Near Miss that might happen during work/activity
- Contractor/Service provider shall follow and comply with GGL "Work Permit" system
- During work execution and activities, GGL team will regularly monitor and evaluate the performance of the Contractor/Service provider to identify the shortfalls and weaknesses and assist to improve the overall performance including QHSE performance through CPAR process (as applicable)

We believe that everyone at GGL, Employees, Contractors, Service providers and Associates have the right to go home safely to their families.

<b>QHSE Defaults and Penalties (As applicable)</b>		
<b>SN</b>	<b>Description</b>	<b>Penalty amount (will be decided by Contract Owner)</b>
<b>1</b>	<b>Non-compliance - HSE Engineer</b>	-
<b>2</b>	<b>Un authorised work</b>	-
<b>3</b>	<b>Work without PtW/WA</b>	Rs. 1,000/- per instance
<b>4</b>	<b>Non-compliance - Safety Training Card (STC)</b>	Rs. 1,000/- per instance
<b>5</b>	<b>Non-compliance - Health Check up</b>	Rs. 2500/- per person
<b>6</b>	<b>Non-compliance - PPEs</b>	Rs. 1,000/- per instance

**Remark: Issuance of MEMO against HSE non compliances including above mentioned defaults shall be decided by Contract Holder**

## **QHSE GUIDELINE (AS APPLICABLE) FOR ALL TYPE OF CONTRACTS**

### **1 Contractor/Service provider...**

- a) shall ensure that all staff/work force comply with the requirements of the GGL HSE Management System, QHSE policy, standard, procedures, guideline, plan & Life Savers at work site
- b) shall ensure issuance of Identity Card to their team members
- c) shall apply and obtain Permit to work (PtW/WA) before start of the work
- d) shall arrange work related Personal Protective Equipment (PPEs) for their staff/work force and ensure proper use during the execution of job
- e) shall carry out the work within the duty hours/office hours. No Work shall be carried out without permission of GGL's representative beyond the official duty hours unless otherwise agreed upon prior to start of work and recorded appropriately
- f) shall ensure that all tools, tackles, appliances, machines, vehicles, instruments or other equipment are Fit for Purpose and maintained safe working condition at all times and are used only by authorized and competent persons
- g) shall ensure that all the QHSE requirements are properly discussed for any sub-contracted activities with GGL. No such activity shall be performed without clearance from GGL management
- h) shall ensure that all Hazards, Near miss, accident, incident, injuries are reported promptly to GGL. Action arises due to reported Hazards, Near miss, incident investigation; audit/inspection shall be closed out as per agreed timelines with site in-charge
- i) shall deploy staff & work force trained, qualified and competent for the work and well aware of risks and mitigation action/s for the activities undertaken
- j) shall make necessary arrangements for safe custody of equipment, materials in stores/warehouse and at site
- k) shall ensure safe transportation, storage and handling of materials to prevent any damage which may impair safe performance of the equipment / material etc
- l) shall initiate immediate actions to hospitalize injured person(s)
- m) shall ensure an injury free, incident free workplace and protect people from harm caused by work activities
- n) shall ensure use of seatbelts while driving four-wheeler and use of crash helmet for Two wheeler riders during job execution
- o) shall ensure Lock out and Tag out (LOTO) after de-energizing and double check before starting any jobs. In case of conducting job for the purpose of fault finding & monitoring of voltage & current it is to be considered live working and all PPE'S to be worn to avoid exposure of flash arc current
- p) shall take note that the use of open wires in sockets, use of wires with tape joints shall not be accepted at work site.
- q) shall ensure proper collection, storage and disposal of solid / liquid waste as per GGL procedure and guideline
- r) staff/work force shall not smoke or resort to misuse of drugs, medicines or alcohol while on duty


- 2 In case of any incident like fire, gas leakage etc. due to gross negligence of the Contractor's staff/work force, GGL reserves the right to impose penalty up to actual damage cost and or termination of work order depending upon the gravity of the situation.
- 3 Any breach of the QHSE requirements shall be deemed by the company to be a material breach of the terms & condition of the contract. GGL shall be entitled to take appropriate actions including instructing the contractor to (a) remedy the breach; (b) suspend the work or (c) terminate the contract.
- 4 All activities shall be carried out as per GGL's documented procedures and QHSE requirements, deviation from it shall be dealt with very strictly

#### **PENALTY MATRIX RELATED TO INJURY CASES**

SN	Parameter	Penalty (INR)
1	Fatal incident	For each fatal case either 1,00,000/- <b>or</b> 10 % of total contract value, whichever is lower
2	Lost time injury	For each injury case either 20,000/- <b>or</b> 5 % of total contract value, whichever is lower
3	Medical Treatment case / Restricted workday case (Excluding animal/insect bite cases)	For each injury case either 10,000/- <b>or</b> 2 % of total contract value, whichever is lower

**Note:** Penalty shall be imposed over and above the payment & compensation that would be made by the service provider to the injured person or family of deceased vide the statutory provisions.

## MEMO FORMAT

 <b>GUJARAT GAS</b>	MEMO	Doc. No.	HSE-F-50
		Rev. No.	0
		Effective Date	02/07/2018

<b>Memo No:</b>	<b>Date:</b>	<b>Time:</b>
GA/Location		
Name of the activity		
Name of the contractor / Service Provider		
Memo Issued to		
Memo Issued by		
Observation		
SN	Non Compliance Observed	Close-out timeline
1		
2		
3		
4		

Remarks:

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	GGL	Contractor
Name		
Designation		
Signature		




## FIRST AID BOX CONTENTS

 <b>GUJARAT GAS</b>	<b>First Aid Box Contents</b> At worksite – PE/PNG/Steel/CNG Project/Admin and Office vehicles including O&M vehicles & MCV		Doc. No.	HSE-F-40B
			Rev. No.	01
			Effective Date	01/11/2018
<b>SN</b>	<b>First Aid Box Contents</b>			<b>Minimum required Quantity</b>
1	Small sterilized dressings			3
2	Medium size sterilized dressings			3
3	Large size sterilized dressings			3
4	Large size sterilized burn dressings			5
5	15 gm. packets of sterilized cotton wool			3
6	100 ml bottle of suitable antiseptic solution			1
7	Scissors			1 pair
8	Adhesive plaster (2 cm x 1 meter)			2 rolls
9	Sterilized eye pads in separate sealed packets			3
10	Analgesic or Aspirin tablets			10 nos.
11	Medical disposable gloves			2 pairs
12	Safety pins			1 dozen

## FIRST AID BOX CONTENTS USAGE FORMAT

[illegible]

## PPE APPLICABILITY MATRIX

<div> GUJARAT GAS</div>		PPE Applicability Matrix																Doc. No.		HSE-F-45							
																		Rev. No.		0							
																		Effective Date		01.06.2018							
SN	Activity / Work	Activity / Task Performer / Executor	Safety Hard hat	Safety Shoes	Safety Goggles/ Glass	Reflective Jacket / Strip	Dust Mask	Ear Plug / Ear Muff	Cotton Hand Gloves	Leather Hand Gloves	Rubber hand gloves	Chemical resistant gloves	Rubber electrical gloves (11kV / 33kV / 66kV)	Electrical Resistant Safety Shoes (RT)	Gum Boot	Fire Retardant Clothing	Cotton dress / cover-all with reflective stripe	Chemical resistant Suit	Seat belt	Crash Helmet	Full Body Harness Double anchor	PETL (Work at height equipment)	Knee guards	Welding Screen	Face shield	Self Contained Breathing Apparatus	Respirator for Organic Vapour
1	Project, Construction, Connection Site Supervision / Site Visit	GGL Employee / Out Sourced Engineer	√	√	NB	√	NB	NB	NB																		
		TPI / Construction Supervisor / Contractor	√	√	NB	√	NB	NB	NB																		
		Contractor Supervisor / Engineer / Mukadam	√	√	NB	√	NB	NB	NB																		
2	Project, Construction, Connection site	Technician/Fitter/Rigger/Helper/Workers	√	√	NB	√	NB	NB	√	NB	NB		NB		NB												
3	Customer Premises Visit / Meeting	GGL Employee / Out Sourced Engineer	√	√	NB	√	NB	NB	NB																		
		GGL Non Technical Employee	√	√	NB	√	NB	NB	NB																		
4	Excavation in Soft Soil	TPI / Construction Supervisor / Contractor	√	√	NB	√	NB	NB	NB																		
5	Excavation in Hard Soil / RCC / PCC	Labour / Worker	√	NB	NB	√	NB		√				NB		NB	√											
6	Steel Pipeline Welding - Cold work	Labour / Worker	√	√	√	√	NB	NB	√				NB	NB	NB											√	√
7	Steel Pipeline Welding - Hot work	Welder	√	√	√	√				√			NB		NB		√									√	√
		Helper / Fitter	√	√	√	√				√	NB			NB	NB	√	√								√	√	
8	Steel Pipeline Welding - Hot work	Helper / Fitter	√	√	√	√			√				NB		NB	√									NB		
9	Radiography	Radiographer	√	√					√							NB		with TLD Badge									
10	Joint Coating	Technician / Helper	√	√	√	√	NB					√			NB												
11	Holiday detection	Technician / Helper	√	√	√	√						√			NB												
12	Drilling	Fabricator / Technician / Rigger / Helper	√	√	√	√	NB	√	√				NB														
13	Grinding / Cutting / Shot Blasting	Fabricator / Technician / Rigger / Helper	√	√	√	√	NB	√	√	√			NB		NB		√								√		
14	PE Pipeline Welding - Cold Work	Welder	√	√	√	√	√		√						NB												
15	PE Pipeline Welding - Hot Work	Welder / Helper	√	√	√	√	√		√						NB	√											
16	Plumbing	Plumber / Helper	√	√	NB		NB	√																			
17	Working at Height at Riser / Riser Maintenance / Building	Trained Plumber / Civil Worker	√	√	√	√	NB	√													√	√	√				
18	Any Level / Category of person	Any Level / Category of person	√	√	NB	√	NB																				
19	AMC - Dom/Com	√	√	√	√	NB	√		√								√										
20	PE Pipeline Cold job on charged gas network /	Any Level / Category of person	√	√	NB	√	NB	√							NB		√										
21	PE Pipeline Hot job on charged gas network /	Any Level / Category of person	√	√	NB	√	NB	NB	√						NB	√											
22	Installation	Any Level / Category of person	√	√	NB	√	NB	NB	√			√					√		√								√
23	Odorant transfer / filling activity	Technician / Helper	√	√	√	√											√		√								
24	CNG Back-court Operations	Compressor Operator	√	√	√	√			√	√							√										
25	Testing - Equipment / Pipeline / Valve / PRI	Any Level / Category of person	√	√	√	√	NB	√							NB	√											
26	Gas Commissioning - Network / Gas Installation	Any Level / Category of person	√	√	√	√	NB	NB	√						NB	√											
27	Electrical - Project / Office Site - Cold Work / Installation	Electric Engineer / Electrician / Worker	√	√	√	√							√	NB			√										
28	Electrical - Project / Office Site - Live Work / Installation	Electric Engineer / Electrician / Worker	√	√	√	√							√	NB	√	√											
29	Driving - Mobile Cascade Van (MCV/LCV/HCV)	Driver / Helper	√	√															√								
30	Handling of Heavy Equipment (Hydra/JCB/Crain/HDD machine)	Driver / Helper	√	√	√	√	NB																				
31	Driving - Four / Three Wheeler	Driver & Co-traveller	√	√																√							
32	Driving - Two Wheeler	Driver / Pillion Driver	√	√																	√						
33	Office Work	Canteen boy / House Keeping Staff	√	√					√																		
34	Work in high noise area	Any Level / Category of person	√	√				√																			
35	Work in confined space	Technician / Worker	√	√	√	√																NB					NB
36	Manual Boring	Worker	√	√	√	√	NB						√														
37	Loading / Unloading	Technician / Worker	√	√	√	√			√	NB	NB																
38	Civil work	Masson / Worker	√	√	√	√	NB		√		NB				NB												
Safety Hard hat White Colour		GGL Employees / Out Sourced Engineer																									
Safety Hard hat Orange Colour		Contractor Supervisor / Engineer																									
Safety Hard hat Green Colour		Contractor Filed workers / Labours																									


# TRAINING APPLICABILITY MATRIX


 <b>GUJARAT GAS</b>	<b>Training Applicability Matrix</b>		Doc. No.	HSE-F-46
			Rev. No.	0
			Effective Date	15.06.2018
Job Positions / Area of Work	Basic Safety Training + Fire fighting (Classroom Training)	Competency Training	Practical Fire fighting Training	First Aid Training
<b>Contractor Staff / TPI / Outsourced Employee - Technical</b>				
Plumber	✓	✓	×	×
Plumber - Working at Height	✓	✓	×	×
Supervisor - Working at Height (Rescue Training)	✓	✓	×	✓
PE Pipe Welder (Welder qualification)	✓	✓	×	×
Steel Pipe Welder (Welder qualification)	✓	✓	✓	×
Fitter/Fabricator	✓	×	✓	×
Helper (Project jobs)	✓	×	×	×
Site Supervisor or Mukadam (All jobs)	✓	×	✓	✓
Qualified HSE Engineer	✓	×	✓	✓
QA/QC Engineer	✓	×	×	×
Outsourced Employees - Technical	✓	×	✓	✓
TPI (of TPIA)	✓	×	✓	✓
Construction Supervisor (of TPIA)	✓	×	✓	✓
Project/O&M In-charge/Manager	✓	×	×	×
PE/PNG O&M Staff / Emergency response team	✓	✓	✓	✓
Steel pipeline O&M Staff	✓	✓	✓	✓
PNG (Dom/Com) AMC team	✓	×	×	×
CNG Station Supervisor	✓	✓	✓	✓
CNG Filler	✓	✓	✓	×
Compressor Operator	✓	×	✓	✓
CNG O&M Staff	✓	×	✓	✓
CNG Project Supervisor / In-charge	✓	×	✓	✓
CNG Project Technician	✓	×	×	×
Civil Staff - CNG Projects	✓	×	×	×
Certified Electrician	✓	×	✓	✓
PRI OEM O&M Staff	✓	×	×	×
Odorant Handling staff	✓	×	✓	✓
Terminal Compressor O&M Staff	✓	×	✓	✓
Terminal Compressor O&M Supervisor	✓	×	✓	✓
Security staff at Gas Installation	✓	×	✓	✓
MCV Driver	✓	✓	✓	×
Hired Vehicle Drivers (non O&M)	✓	✓	×	×
HDD/Hydra/Crane/Excavator Operator	✓	×	×	×
<b>Contractor Staff / TPI / Outsourced Employee - Non- Technical</b>				
Security staff at offices and warehouse	✓	×	✓	✓
Billing staff	✓	×	×	×
DMA/CDMA staff	✓	×	×	×
House Keeping Staff	✓	×	✓	×
<b>GGL Employee (Technical/Non-Technical)</b>				
GGL Employee - New (including GET/MT) - Technical	On joining	On joining	✓	✓
GGL Employee - New (including GET/MT) - Non-Technical	On joining	On joining	×	×
GGL employees - staff & shift engineer as part of emergency response team	✓	✓	✓	✓
Floor Warden	×	×	✓	×
First Aider	×	×	×	✓

## TRAINER FREQUENCY & TRAINER MATRIX

 <b>GUJARAT GAS</b>	<b>Training Frequency &amp; Trainer Matrix</b>		<b>Doc. No.: HSE-F-47</b>
			<b>Rev No.: 02</b>
			<b>Effective Date: 29.09.2023</b>
<b>Training Title</b>	<b>Frequency (Years)</b>	<b>Trainer</b>	<b>Target Group</b>
<b>Basic Safety Training</b>	Once in 3 years	HSE Rep - GA / Corporate	As per Training Applicability Matrix
<b>Practical Fire Fighting Training</b>	Once in 3 years	HSE Rep - GA / Corporate	
<b>First Aid Training</b>	Once in 3 years	External Agency	
<b>Emergency Response Team Training</b>	Once in a year / On inclusion or role change in ERT	HSE Rep - GA	ERT members
<b>Induction Training - HSE</b>	On joining	HSE Corporate	GGL Employee - New (including DET/GET/MT)
<b>Functional Training</b>	On joining	Based on recommendation of GAH/Function Head	GGL Employee - New (including DET/GET/MT)
<b>Technical Competency Trainings</b>			
Gas pipe Plumbing Training including Basic Safety + Practical Fire fighting	Once in 3 years	External Agency	Mandatory - Plumber, Plumbing supervisor Suggested - TPI, CS, Outsourced employees of PE-PNG dept.
Working at Height Training	Yearly	External Agency	WAH-Plumber (Level-I), Rescuer (Level-II) and Plumbing Supervisor (Level-III)
PE Welder Training	Once in 3 years	External Agency	Mandatory - PE welder, Supervisor Suggested - TPI, CS, Outsourced employees of PE-PNG dept.
CNG Filling Training including Basic Safety + Practical Fire fighting	Yearly	External Agency	CNG Filler & CNG station supervisor
On Job Training for CNG fillers	Half Yearly	GA - CNG O&M / HSE Rep	CNG Filler & CNG station supervisor
Steel Pipe Welder Qualification	As per TPI Certification	TPIA	Steel Pipe-welder
Steel/PE/PNG O&M & Emergency Handling Training Including including Basic Safety + Practical Fire fighting	Once in 3 years	External Agency	Steel/PE/PNG O&M Staff / Emergency handling team including GGL Employees - staff & shift engineer of emergency response / O&M team
LNG/LCNG O&M & Emergency Handling Training	Yearly	External Agency	LNG/LCNG O&M Staff, Emergency handling team & LNG Tanker driver including GGL Employees - staff & shift engineer of emergency response / O&M team
Defensive Driving Training	Once in 3 years	External Agency	CNG/LNG Transportation Drivers, Hired Drivers, Emergency/O&M vehicle drivers, Patrolmen


# WASTE MANAGEMENT MATRIX

 GUJARAT GAS	Waste Management Matrix			Doc. No.	HSE-F-51
				Rev. No.	0
				Effective Date	02-07-2018
Waste item	Responsibility of collection	Storage Location	Responsibility of Storage & Disposal	Method of Disposal	Record to be maintained
Hazardous Waste					
O&M Waste					
Used oil from Compressor / DG set	GGL EIC through contractor	CNG Station / CGS	Contractor	Disposed to SPCB authorised vendor	From-3, Form 4, Manifest
Oil with Water Compressor / DG set		CNG Station / CGS	Contractor	Disposed to SPCB authorised vendor	From-3, Form 4, Manifest
Cotton Waste- Contaminated with Used oil		CNG Station / CGS	Contractor	Disposed at land fill sites	
Used Gas filter cartridge		GGL Store / Warehouse	GGL Warehouse – rep.	Disposed at land fill sites	Manifest
Ethyl Mercaptan scrubber drums having residual neutralized contaminated EM		CNG Station / CGS	Vendor	Disposed to SPCB authorised vendor	Manifest
Used Suraksha hose		GGL Store / Warehouse	GGL Warehouse – rep.	Disposed at land fill sites	Manifest
Condensate during pigging		Condensate tank at site	Contractor	Disposed to SPCB authorised vendor	Manifest
Used Odorant Tank with residual neutralized contaminated EM		GGL Store / Warehouse	GGL Warehouse – rep.	Disposed to SPCB authorised vendor	Manifest
Project Waste					
Used Welding Electrodes	GGL Site In-charge through contractor	Respective Contractor store	Respective Project Contractor	Disposed to SPCB authorized vendor	Manifest
Equipment-Used Oil				Disposed to SPCB authorised vendor	
Coating / Chemical cans				Disposed to SPCB authorized vendor	
Coating applicator Pad				Disposed to SPCB authorized vendor	
Used Hydro-test Water		Contractor water tanker		During de watering, care shall be taken to properly dispose the discharging water in order to avoid pollution, damages to fields under cultivation and / or existing structures and interference with the traffic. As chemical have been added to water, dewatering shall be done in such a way that the composition of the efficient water does not exceed the limit set in IS 2490 (Part-I) tolerance limits for industrial effluents discharged into in land surface water. Hence, dewatering circuit shall include chlorination before letting the water out of the pipe section to the environment.	
Other Hazardous Waste					
Plastic / other non-biodegradable scrap < 50 micron	GGL Site In-charge through contractor	GGL Store / Warehouse	GGL Warehouse – rep.	Sold to SPCB approved re-cycler	Monthly Patrak
Used batteries	GGL EIC			Sold to dealers having authorisation to collect used batteries	Form-VIII
E-waste	GGL IT In-charge			Sold to vendors having authorisation for collecting e-waste	Register
Used empty paint cans	GGL EIC	Respective Contractor Store	Respective Contractor	Sold to SPCB approved re-cycler	Manifest


 GUJARAT GAS	Waste Management Matrix			Doc. No.	HSE-F-51
				Rev. No.	0
				Effective Date	02-07-2018
Waste item	Responsibility of collection	Storage Location	Responsibility of Storage & Disposal	Method of Disposal	Record to be maintained
Non- Hazardous Waste					
Project and O&M Waste					
Cotton waste	GGL Site In-charge through contractor	Respective Contractor store	Contractor	Dust bins / garbage container	Challan
Discarded Grinding Disc		Respective Contractor store		Sold to authorised scrap dealer	
Used Stringer brush				Sold to authorised scrap dealer	
Bevel Protector				Sold to authorised scrap dealer	
Foam Pig		Contractor truck		Sold to authorised recycler	
Bentonite Mud used for HDD	Landfill Site				
Metal Scrap (CS, MS) Pipe, Fittings, Valves	GGL Store / Warehouse		GGL Warehouse – rep.	Sold to authorised recycler/scrap dealer	
Other Metallic / Non-metallic scrap e.g. meters, regulators etc.					
Aluminium, Brass, Copper Scrap					
Scrap PE pipe pieces, Fittings, valves					
Non-usable Project surplus – Steel & PE					
Admin Waste					
Canteen Wastes	Admin In-charge through respective Contractor	At designated location in premises	Admin Contractor	Local Authority Waste Management arrangement – e.g. Municipal Corporation waste truck	
Used Plastic Water Bottle					
Waste paper/banner/posters					
Broken glasses	Admin In-charge through respective Contractor	GGL Store / Warehouse	GGL Warehouse – rep.	Sold to authorised recycler/scrap dealer	
Electrical bulbs/tube lights etc.					
Rubber Scrap / damaged PPEs					
Wooden Scrap	EIC through contractor	GGL Store / Warehouse	GGL Warehouse – rep.		
Office Chairs, Fan, Water Cooler					
Electrical Waste - Motor, Pump, Panel, UPS					
Other Non-Hazardous waste					
Plastic / other non-biodegradable scrap > 50 micron	Respective Function In-charge	Waste bins / garbage container	Respective Function In-charge	Local Authority Waste Management arrangement – e.g. Municipal Corporation waste truck	
Housekeeping waste	Contractor		Admin		
Expired First aid items	Respective Function In-charge		Respective Function In-charge		
Building material (civil) waste	GGL EIC through contractor		Contractor		




# LIFE SAVER COMPLIANCE



## LIFE SAVERS- FOLLOW LIFE SAVER RULES TO AVOID ACCIDENTS




### 1. Driving




- Plan your journey in advance considering route, duration, road condition and weather condition
- Never drive or allow driving when driver is fatigued or under influence of substances like alcohol, painkillers, anxiolytics, recreational drugs etc.
- Ensure vehicle is fit for purpose
- Ensure periodic inspection, servicing and maintenance of vehicles
- Ensure provision of leg guards on two wheelers
- Always wear seatbelt while driving / travelling in passenger or commercial vehicle
- Always wear crash helmet while riding two-wheeler
- Never exceed passenger limit in vehicle nor allow unauthorized person in driver's cabin of hazardous goods vehicle
- Avoid use of two-wheeler / three-wheeler for travel on highways and / or dark roads
- Practice defensive driving - Respond promptly to unsafe act of others on the road
- Obey traffic rules, traffic signs and signals
- Obey speed limits
- Avoid harsh braking and harsh acceleration
- Avoid overtaking on the road without divider
- Drive in correct lane only
- Reduce speed based on road conditions and at accident prone areas like sharp turn, blind turn, steep curve, narrow bridge, heavy traffic area, road under construction, road diversions, etc.
- Maintain safe distance from the vehicle ahead
- Never use mobile phones or any other communication device while driving
- Keep parking lights ON when parking on highway and use reflective parking triangle to avoid accident
- Look for traffic while getting down from vehicle

### 2. Safe System of Work (SSoW)



- Before commencement of any job, ensure:
  - Job & site related hazards are identified and appropriate control measures are in place
  - An appropriate emergency/ rescue plan is in place
- Obtain Permit to Work (PTW) authorization from issuing authority as applicable to the job
- Ensure that approved PTW mentions detailed scope of work, must have clearly identified hazards, associated risks and necessary control measures
- Ensure no personnel is working at worksite without prior intimation and authorisation
- Avoid Simultaneous Operations (SIMOPS) which have potential to lead to hazardous situations
- Carry out Tool Box Talk (TBT)
- Provide cautionary instructions about exposure to hazards to people in vicinity of worksite
- Prior to commencing a job on isolated facilities, get confirmed all electrical & mechanical isolations (e.g. Gas installation, Gas pipe section, equipment, etc.) by authorised person and follow Lockout & Tag out (LOTO) system
- Ensure the job is performed by trained & competent personnel
- Ensure safety critical job is being supervised by competent supervisor
- Wear appropriate Personal Protective Equipment (PPE) for the concerned job
- Ensure material, tools and equipment required for performing the job are fit for purpose
- If unsure about job to perform safely, stop the job immediately and discuss with supervisor/ manager
- Intervene and stop unsafe job at site
- For any change in conditions, stop work, reassess the risk and obtain reauthorisation as appropriate
- In case of exposure of worksite to road traffic, ensure safety measures like use of flashlight, reflective traffic cones, barricades with reflective stripes to divert the traffic well before the working location / parked vehicle/equipment etc.
- Do not override or bypass any safety controls without proper authorisation and additional safety measures to mitigate the risk
- Before closing & leaving the site, ensure that site is safe, clear & tidy
- Follow Management of Change (MoC) process for changes to plant/equipment

### 3. Excavation, Manual Boring and Horizontal Directional Drilling



#### 3.1 Excavation

- Follow "Safe System of Work" Life Saver rules
- Identify, locate and protect all underground utilities e.g. power cable, gas pipeline, etc. as necessary
- Use insulated crow bar / pick-axe for manual excavation
- Identify & mitigate the hazards as necessary e.g. contaminated soil, equipment movement, traffic etc.
- Follow correct trench protection techniques as per soil conditions like step cut (benching) or sloping ("V" shape) or shoring
- Keep machinery and excavated spoil away from edge of trench / pit
- For any change in ground conditions, stop work and consult supervisor
- Keep children away from pit / trench / work sites
- Display warning signs, use appropriate barricades at work area and provide easy means for getting in and out of trench / pit
- Make provision of proper crossover on trench for pedestrian as required


#### 3.2 Manual Boring

- Follow "Safe System of Work" Life Saver rules
- Identify, locate and protect all underground utilities e.g. power cable, gas pipeline, etc. as necessary
- Identify & mitigate the hazards as necessary e.g. contaminated soil, equipment movement, traffic etc.
- Give preference to open cut excavation over manual boring
- Before each manual boring work, ensure:
  - Approved bore plan is in place
  - Entry and exit locations for manual bore are visibly marked
  - Permit to Work (PTW) for the job is in place
- Ensure protection against potential electric shock by:
  - Use of electrical shock resistant (Teflon or equivalent approved insulating material coated) manual boring tool
  - Wearing of rated electric shock resistant hand gloves and shoes
  - Provision of "Electrical Insulating Rubber Mat" on the ground
  - Avoiding work in wet conditions if electrical power supply is not isolated


#### 3.3 Horizontal Directional Drilling (HDD)

- Follow "Safe System of Work" Life Saver rules
- Identify, locate and protect all underground utilities e.g. power cable, gas pipeline, etc. as necessary
- Identify & mitigate the hazards as necessary e.g. contaminated soil, equipment movement, traffic etc.
- Before starting HDD operation, ensure:**
  - Approved bore plan is in place
  - HDD entry and exit locations are visibly marked
  - Capacity of HDD drilling rig is adequate
  - Proper earthing / grounding of machine
  - Cable strike alarm is in working condition
  - Moving parts of machine are guarded
  - Out rigger of HDD machine is working and rigidly put on stable & firm ground
  - Availability of tracking equipment / device
  - Crane is in good condition
  - Preferably auto rod loading facility is available in the machine
- During drilling operation, do ensure:**
  - Track movement of the drilling tool is as per approved bore plan
  - Auto greasing & auto loading of machine rod is functioning properly, in case of manual loading of the machine rod, ensure additional safety measures to mitigate the risk from moving parts
  - Entry of unauthorised personnel in the work area is prohibited
  - No maintenance activity is carried out while HDD machine is in operation


### 4. Work at Height




- Follow "Safe System of Work" Life Saver rules
- Use only approved and certified working at height equipment e.g. rope access system, scaffold, ladder, etc.
- Give preference to life working platform in place of rope access system or ladder wherever possible for carrying out work at height job
- Ensure use of rope protectors to avoid any damage to ropes from sharp edges
- Identify 'fall from height' hazard before starting of plumbing job (including plumbing at balconies) and ensure use of safety harness with proper anchoring



## LIFE SAVERS- FOLLOW LIFE SAVER RULES TO AVOID ACCIDENTS




### 5. Lifting Operation




- Always use a fall arrestor having:
  - Double action self-locking snap hooks
  - Proper anchor preferably mounted overhead that limits free fall to two meters
- If using a rope access system, ensure use of fall arrest harness
- Select safe routes for installation of Galvanised (GI) riser & lateral
- Never carry out any work at height when near an overhead power line
- Secure all tools and equipment while working at height
- Clearly display warning signs and have the area in control below the workplace wherein "working at height" is in progress
- Stop the work in adverse weather conditions i.e. rain, heavy wind, poor work lights etc.

### 6. Confined Space Entry




- Follow "Safe System of Work" Life Saver rules
- Ensure that approved lift plan is in place having details of lift method, selected lifting equipment, load chart, sketch showing lifting equipment location & orientation, lifting points & centre of gravity and Load movement path, etc.
- Use only correct, approved and certified lifting equipment, tools & tackles and safety devices
- Work according to a lift plan that is discussed, understood and followed by everyone involved in the job
- Do not exceed safe working load limit
- Ensure lifting equipment are working on stable & firm ground
- Ensure safety measures to avoid contact with overhead power line during lifting operation
- Ensure that lift area is fully protected from road traffic vehicles & movement of other equipment
- Prohibit entry of unauthorised personnel and do not allow anyone under the lifted load or in the lift path
- Ensure operator of lifting equipment and signal man are always in contact
- In case of rough weather conditions, stop the lifting operation and wait till condition is normal

### 7. Electrical




- Follow "Safe System of Work" Life Saver rules
- Ensure isolation of all connected power sources, use of Lockout & Tag out (LOTO) before commencement of electrical job and removal of LOTO after reconnecting the power sources
- Ensure that all concerned persons are informed and updated regarding status of isolation
- Consider all conductors are live unless proved dead with a certified testing instrument
- Ensure earthing of all electrical equipment and use of three pin plug and socket
- Never insert open wires in the socket, always use plug & socket
- All electrical work is to be done by certified electrical person and licensed contractor only
- Use portable electrical equipment with double insulation protection
- Ensure protective devices like ELCB / RCCB are used and in working conditions

### 8. Compressed Natural Gas (CNG) Handling




- Follow "Safe System of Work" Life Saver rules
- Ensure that CNG cylinder is within test life
- Avoid CNG filling if CNG cylinder is suspected to be spurious / altered / damaged
- Ensure CNG cylinder and CNG cascade are firmly secured
- Ensure flame proof integrity of all electrical installations in hazardous areas
- Secure high-pressure hose to avoid swinging action in case of failure
- Control the potential ignition sources (e.g. smoking / naked flame / use of phone / hot work etc.) within CNG handling area
- Control traffic of customer vehicles and movement of passengers / third party within premises
- Carry out periodic risk assessment of the routes used for CNG transport
- Ensure movement of CNG Transport Vehicle on designated path only at CNG station through use of marking and barricades / cones
- Ensure safe reversing of CNG Transport Vehicle with use of reversing camera, parking sensors / guiding staff
- Ensure safe parking of CNG Transport Vehicle with use of wedge lock and parking brake
- Ensure proper grounding of CNG Transport Vehicle and cascade prior to CNG loading / unloading
- Ensure putting the vehicle ignition key in the filling hose before connecting the couplings to avoid hose pull out incident during CNG loading / unloading operation
- Ensure that no passengers are allowed in the CNG filling area or vehicle movement area
- Ensure that vehicle engine is in switched off condition and driver is outside the vehicle before starting CNG filling
- Always use insulation pad / rubber mat to avoid contact of CNG filling hose with battery terminals of the vehicle being filled
- Be alert for any gas smell or abnormal sound before and during CNG filling
- Ensure driver does not start the vehicle before disengagement of CNG filling hose by the filler
- Ensure easy access to Emergency stop switches / shut down buttons

### 9. Liquefied Natural Gas (LNG) Handling



- Follow "Safe System of Work" Life Saver rules
- Follow safety procedure for LNG loading / unloading operations
- Use only non-sparking tools while handling LNG
- Control the potential ignition sources (e.g. smoking / naked flame / use of phone / hot work etc.) within LNG handling area
- Ensure proper grounding of LNG transfer assembly & LNG tanker prior to LNG loading / unloading
- Avoid direct contact with LNG (cryogenic) liquid or vapour
- Wear appropriate PPE (cryogenic gloves, cryogenic suit/apron, face shield, helmet, Safety shoes)
- After LNG loading / unloading is completed, ensure disconnection of hose pipe from LNG tanker
- Do not pour water on LNG spillage or leakage point
- Ensure easy access to Emergency stop switches / shut down buttons

### 10. Gas Escape Handling



- Follow "Safe System of Work" Life Saver rules
- In case of gas escape inside premises, open doors & windows to ventilate the escaped gas
- Give priority to protecting life
- Always wear appropriate PPE including fire retardant clothing
- Isolate / turn off gas supply as early as possible
- Check for presence of Gas with gas detector, identify gas affected area and if required, evacuate persons to a safe place
- Continuously monitor for presence of gas in atmosphere
- Control the potential ignition sources within Gas affected area / zone e.g. Do not permit smoking / naked flame / use of phone / operation of electrical switches, hot work etc.
- Cordon leak affected area and display warning signs
- Seek help of local authorities as required to keep traffic & people away
- Seek help of fire department and ambulance services as required
- Post leak repair, carry out leak check to ensure soundness of repaired leak as well as ensure there is no other gas leakage in the area



## MEDICAL FITNESS CHECK UP MATRIX FOR CONTRACTOR PERSONNELS

Medical Assessment Required		TYPES OF ACTIVITIES							
		PE/ Steel Welding	Working at Height	CNG Fillers	Plumber	Canteen / Food handlers	Security	Drivers	Operators-Terminal Compressor
Personal Details									
	Name	R	R	R	R	R	R	R	R
	Age	R	R	R	R	R	R	R	R
	Sex	R	R	R	R	R	R	R	R
History									
	Present Complaints	R	R	R	R	R	R	R	R
	Past Complaints	R	R	R	R	R	R	R	R
Family History <sup>1</sup>	Diabetes	R	R	R	R	R	R	R	R
	T.B.					R			
	IHD		R					R	
	High B.P.	R	R	R	R	R	R	R	R
Personal	Addictions	R	R	R	R	R	R	R	R
	Medicines	R	R	R	R	R	R	R	R
	Diet	R	R	R	R	R	R	R	R
	Hygiene	R	R	R	R	R	R	R	R
Physical Examination									
	Height	R	R	R	R	R	R	R	R
	weight	R	R	R	R	R	R	R	R
	B.P.	R	R	R	R	R	R	R	R
	Pulse	R	R	R	R	R	R	R	R
Vision Test	Near	R	R	R	R	R	R	R	R
	Far	R	R	R	R	R	R	R	R
	Colour Blindness							R	
	Night Vision							R	
Systemic Examination									
	CVS		R		R				
	CNS		R		R	R		R	
	Respiratory (Spirometer)	R	R	R	R	R			R
	Ear, Nose and Throat	R	R	R	R	R	R	R	R
	Audiometry								R
	Hearing ability							R	
Clinical Examinations									
Blood	Blood Group <sup>1</sup>	R	R	R	R	R	R	R	R
	FBS <sup>3</sup>		R	R	R	R	R		
	PPBS		R	R	R	R	R		
X-Rays	Chest PA view			if directed by Physician					
Other special test									
Serum WIDAL Test						R			
Hepatitis A						R			
Stool - Coli form						R			
Mont ox test						R			
Skin Examination for Dermatitis						R			

Note: All the forms and formats may change time to time and GGL EIC will share the same to bidders. Bidders to follow the same as per instructions from GGL EIC.