



Vadodara Gas Limited
Replies to Applicant's Queries

Scope Matrix for LNG/ L-CNG Station

Corrigendum - I

Sr No	Item Description	Bidder	VGL
1	Procurement of LNG from the supplier and arranging its availability at the nearest LNG terminal		✓
2	Daily LNG nomination to the LNG terminal for tanker loading, along with coordination with the gas supplier.		✓
3	Arrangement of LNG semi-trailers for transportation of LNG from the LNG terminal to the LCNG station. All LNG semi-trailers shall be GPS-enabled. Ensure drivers are provided with and use appropriate PPE at all times..	✓	
4	Vacuum and perlite insulated double walled vertical LNG storage tanks (Size – 56 KL, MAWP – 12 Barg and Quantity – 2 Nos) with the following minimum accessories. - Manual isolation valves on all connections, non-return valves, globe valves, ESD valve on tank filling & delivery lines, safety relief valves, thermal relief valves, level indicator & transmitter, pressure indicator & transmitter and other required accessories. - Interconnected piping with accessories & support - Vent stack with all support structure & drain valve - Emergency shut down Fire safe valves on Filling and delivery/pump lines - Junction box for connecting the instruments - 4 x 100% Safety valves - PESO approval for the Design - Economizer with pressure built-up coil - Lifting lugs - Earthing lugs	✓	
5	350 LPM LNG unloading pump cum LNG Dispensing skid with drive motor (Quantity – 2 Nos) and with following minimum accessories - Skid mounted with Vacuum jacketed sump - Local vent stack - Variable frequency drive (VFD) - Explosion proof emergency shut down push button station - Explosion proof local control panel for local operation with option of remote start and stop - Precooling temperature sensor, dry run temperature sensors, pressure sensors. - All associated piping, valve, non-return valve, fittings, instruments & accessories like strainer, pressure gauges, relief valve and safety interlocks for gas detector, low and high temperature sensor - Instruments impulse tube and interconnecting piping - Safety tags	✓	



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	- Lifting Lugs and tailing lug - Earthing boss		
6	Unloading Hose Trolley with wire braided Hoses for Liquid and vapour balance: 1 set for each pump for easy and safe hose handling, earthing reel for ensuring effective earthing. All necessary connections from pump outlet to storage tank inlet flange, control valves and inter connectors.	✓	
7	Design and Installation of Low Pressure Atmospheric vaporisers (2 x 100% capacity) to meet required duty cycle to provide Natural gas with valves at inlet and outlet. Flow : 1000 SCMH.	✓	
8	Inlet / outlet valve skids for the above vaporisers including - - automatic switchover based on time and outlet temperature - Temperature transmitters at outlet of each vaporiser - interconnecting piping and supports - valves and instruments all mounted on skid complete with cabling , pneumatic tubing and junction boxes	✓	
9	1 No of Low Pressure reduction system (PRS) for delivery of PNG at required flow and pressure of 2.5 barg – PNGRB Compliant - 2 x 100% regulators with isolation valves and pressure gauges - Overpressure slam shut off valve with limit switch - Creep relief valve - All mounted on skid with cabling and junction box - 2 Nos RPD Flow meter with its integration to SCADA for gas qty measurement	✓	
10	4 Nos LNG High pressure pump skid – 1200 SCMH ~ 33 LPM each - with electrical control panel in control room - Temperature sensors for pre cooling and dry run protection - LP and HP side safety valves - High pressure gauge and switch valves - other instruments and interconnecting piping - mounted on skid	✓	
11	Design and supply of High pressure atmospheric vaporisers (2 x 100% capacity) to meet required duty cycle to supply CNG (2000 SCMH each) - with instruments and isolation valves for manual switchover after 8 hrs for continuous operation if required	✓	
12	High pressure vaporiser interconnecting skid with 2 Nos of Mass flow meter for Gas measurement	✓	
13	2 Nos of 4500 WL Stationary Cascade – 3 bank	✓	
14	1 Nos of Sequencing/Priority Panel for sequencing of CNG flow	✓	



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15	CNG Mobile Cascade fill point/s (Quantity – 2 Nos) - with Manual Valves and instruments - including 1no of Mass flowmeter per point and 1 no of earthing reel per point. - with Parker or equivalent make QC coupling	✓	
16	CNG dispenser (3 Nos for Car & 1 for Bus & Car Combo) - As per Requirement - with hoses and earthing connections for Car/ bus as required	✓	
17	All Interconnecting piping for Low pressure, High pressure & Air Line along with required elbows and fittings. HP tubing from Priority panel to Stationary Cascade, LCV fill Post & CNG Dispensers	✓	
18	Odorization skid (monitored & controlled from LCNG Station PLC/SCADA) for dosing odorant to High Pressure CNG (Flow - 2000 SCMH) and Low Pressure PNG (Flow - 1000 SCMH) including 1st fill of Odorant with following minimum accessories. - with controlling valves. Odorant filling till contract period - Odorant storage tank with associated instruments – 500 Litre - Air operated dosing pump for each application - flow sensor - interconnecting piping duly mounted on skid	✓	
19	Saturation skid for conditioning of LNG as required for LNG dispensing for Automotive – Qty – 1 Nos	✓	
20	Super insulated vacuum line for LNG dispensing requirement - between Dispensing pump, saturation skid and LNG dispensers. Supply & return both Super insulated vacuum line	✓	
21	PESO & W&M approved LNG Dispenser -1 No - including breakaway couplings and hoses - Quick Dry connect Nozzle /fuelling connector per ISO 12617 on LNG fill line - Gas Return Nozzle - valves, instruments and piping duly insulated as required - control system, HMI - Hose parking - Safety devices, ESD switches as per Peso requirements - all housed in panel/casing with suitable class protection wherever required.	✓	
22	BOIL Off Gas Management System Complete Boil off gas (BOG) management system which includes BOG vaporizer, Pressure regulating valve with bypass valve arrangement, safety relief valve, flow meter with interconnecting piping, valve, instruments, flanges, fittings, supports, counter flanges, gaskets, nut & bolts and accessories.	✓	
23	Total safety system inclusive of Special gas detection devices, low and high temperature sensors, ESS etc in dyke storage area.	✓	



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24	Programmable logic controller (PLC) with SCADA - including software programming. - MCC, PCC, VFD & APFC Panel for the LCNG plant	✓	
25	Supply of Earthing lugs on each equipment, Spring loaded earthing reel 10mtr wire (1 No per unloading pump), Warning signs and SOP.	✓	
26	- Supply & Lay of all Electrical Cables from PLC to field instruments/Valves - Supply of & Lay of cable trays, Electrical hardware , supports etc. - Supply & lay of cable glands and other Electrical hardware	✓	
27	Hazop Study Report along with On-Site Emergency Plan	✓	
28	Supply of all required Foundation bolts for tank; Supply of expansion bolts for skid and supports.	✓	
29	Installation of cables and cable trays between PLC panel and station components inside dyke storage area including all instrumentation	✓	
30	Installation and commissioning of system including piping, welding, cabling and pressure testing at site up to our Battery limit within Fencing area.	✓	
31	All Local approvals/ NOC, NHAI, Police, PESO & Competent person – Rule 33 Approvals Including Liasioning fees. W&M Stamping of dispensers (Every year)	✓	
32	Normal Operation Spares for the plant, Maintenance & upkeep of all equipment	✓	
33	Daily plant operations including tanker unloading and regasification, along with forecourt operations for CNG/LCV filling, ensuring round-the-clock manpower deployment for both the LNG area and forecourt area. This includes vehicle crowd management, cash collection, and proper cash handling and management.	✓	
34	All daily cash and online payments received against CNG retail sale shall be transferred to VGL on the next working day.	✓	
35	The periodic maintenance required to be done as per OEM recommendation shall be taken up promptly. Bidder shall provide the detailed preventative maintenance schedule along with Estimated down time required for each type of maintenance schedule	✓	
36	Transport of Equipments to site and transit Insurance (To& Fro). Demobilisation of all items back to bidder store after Contract Expiry	✓	
37	- 2 Nos Pump for removal of water from dyke with control mechanism @185 LPM - UPS for PLC power backup of 30 minutes - 10 KvA - Licensed Personal computer for SCADA & Operator PC for daily DPR requirement - Air Compressor for Pneumatic valve actuation along with Nitrogen cylinder backup skid - Flameproof light near unloading point.	✓	
38	Required Cranes for Unloading & erection of Equipments, During Mobilisation & Demobilisation period after contract closure	✓	



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Sr No	Item Description	Bidder	VGL
39	Supply of Liquid Nitrogen for tank cooling during commissioning	✓	
40	Fire hydrant Network of DN100 around the periphery of Fencing with Water monitor 2 Nos & 3 Hydrants. Below pumps are required to be connected with network. Fire Main Pump: 900 Lpm Jockey Pump: 180 Lpm Diesel Pump: 900 Lpm With other accessories Butterfly valves, air relief valves, PG, Needle valves & other interconnecting pipes. Fire extinguishers, sand buckets, warning signs as required per PESO norms. Underground Fire water storage tank Minimum 15000 Litre	✓	
41	Suitable Land for LNG station of 3600 Sq.M with 60 meter frontage minimum	✓	
42	Design and detailed engineering for all civil works related to the LNG station, including site grading, cutting and filling, plot development, access road and plant roads, dyke wall, boundary wall, chain link fencing, paver block flooring, water drainage system, green belt development, and signage. Construction of control rooms (Sales Room and Electrical-cum-PLC Room) complete with furniture and air conditioning. Provision of basic amenities such as drinking water (RO system) and toilet facilities. Development of the forecourt dispensing area canopy as per VGL branding and approved design guidelines.	✓	
43	Provision of plant lighting as per the required illumination levels, both outside and inside the fenced area. Electrical works shall include main incoming cable from transformer to MEDB, distribution from MEDB to the LNG Electrical Panel, MEDB to indoor and outdoor lighting systems, MEDB to UPS, MEDB to GEG, and UPS to battery bank, including all associated cabling and terminations.	✓	
44	Earth pits with Earthing system in it at required locations along with Earthing strips up to equipment.	✓	
45	Arrangement of Utilities such as Electrical power, water, Air etc. for testing during commissioning. Supply of Electrical power during operation of the LNG station	✓	
46	Food, Lodging, boarding & Transport facility for Operation team.	✓	
47	The Bidder shall also carryout calibration of gas detectors and flame detectors every year or earlier as per requirement or instruction of the operation manger. Also, yearly calibration of all instruments such as pressure gauges, transmitters, switches etc shall be in the scope of the Bidder. Calibration of mass flow meters shall be done once in two years or as per OEM recommendation whichever is earlier. In addition to the above all safety relief valves shall also be tested and calibrated every year.	✓	



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Sr No	Item Description	Bidder	VGL
48	Diesel/Gas Generator of 125 KVA for Power back along with Changeover panel	✓	
49	Provision of a complete CCTV surveillance system with 100% area coverage of the plant and forecourt. The system shall have a minimum data backup retention period of 15 days	✓	
50	Housekeeping of LNG and CNG portion including all Consumable, tools and tackles related to housekeeping.	✓	
51	Liaoning with Local Electricity board for Power at LNG RO. Providing power connection via 2/4 pole. Coordination with Electricity Board for commissioning of transformer. Getting demand note for power supply till 2/4 pole	✓	
52	Air/nitrogen tyre inflator system for vehicle tyre pressure filling at the forecourt.	✓	
53	VGL branding to be provided on the LNG storage tank, installation of high mast signage for the CNG and LNG station, and branding on CNG dispensers as per approved VGL design guidelines.	✓	
54	Daily consumption report for all gas streams to be prepared and submitted to VGL	✓	
55	Provide inputs, reply auditor's query and technical documents to VGL assigned agency for Statutory inspection and certifications of LCNG plants, external safety audits during the operations phase etc.	✓	
56	Battery Limits: Low pressure PNG @ 4 barg : PRS outlet flange High pressure LCNG @ 250 barg : up to CNG dispenser & LCV Fill point LNG Dispensing : up to LNG dispenser	✓	