



An ISO 9001
Company

Bharat Heavy Electricals Limited

(High Pressure Boiler Plant)

Tiruchirappalli – 620014, TAMIL NADU, INDIA

CAPITAL EQUIPMENT/ MATERIALS MANAGEMENT

ENQUIRY

NOTICE INVITING TENDER

Phone: +91 431 257 76 53

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Email : skaruna@bheltry.co.in

Web : www.bhel.com

TWO PART BID

Tender to be submitted in two parts.

Enquiry

Number:

2621100109

Enquiry

Date:

16.06.2011

Due date for submission of quotation:

16.07.2011

You are requested to quote the Enquiry number date and due date in all your correspondence. This is only a request for quotation and not an order.

Please note that under any circumstances both delayed offer and late offers will not be considered. Hence vendors are requested to ensure that the offer is reaching physically our office before 14.00 hrs on the Date of tender opening.

Item	Description	Quantity	Delivery (Item required at BHEL on)
10	2 x 40 MT LPG Mounted Bullet as per the technical specification, general guidelines instructions & commercial conditions applicable (to be downloaded from web site www.bhel.com or http://tenders.gov.in)	01 Set	30.10.2011

Important points to be taken care during submission of offer

1. Checklist to be filled and enclosed along with the offer failing which, the offer will not be considered for evaluation.
2. Subsequent to the hosting of this Enquiry, any corrigendum to the Enquiry that may be hosted in the BHEL Web-site as well as Government Tenders-portal shall be viewed by the vendors regularly to know the details of corrigendum. In case if any vendor without seeing the corrigendum quoted as per original Enquiry and intimate that they have wrongly quoted will not be considered and rejected. However as per the appropriate Policy of BHEL action will be taken on them in this regard.

BHEL's General guidelines / instructions (refer MM/CE/GT/001) including bank guarantee formats and list of consortium banks, commercial terms check-list can be downloaded from BHEL web site <http://www.bhel.com> or from the Government tender website <http://tenders.gov.in> (public sector units > Bharat Heavy Electricals Limited page) under Enquiry referred above.

Tenders should reach us before 14:00 hours on the due date
Tenders will be opened at 14:30 hours on the due date
Tenders would be opened in presence of the tenderers who have submitted their offers and who may like to be present

Yours faithfully,
For BHARAT HEAVY ELECTRICALS LIMITED

Manager / MM / Capital Equipment

S. KARUNAN

Manager

MM / Capital Equipment
BHEL TRICHY-620 014

QUALIFYING CRITERIA FOR THE SUPPLY, ERECTION & COMMISSIONING OF 2X40MT MOUNTED TYPE LPG STORAGE FACILITY

Section I : Company Profile: The Bidder has to provide the details pertaining to each clause in the table given below and whenever necessary additional sheets may be attached (giving clear reference number) to understand the profile of the BIDDER's COMPANY.

S.No	PARTICULARS	VENDOR'S RESPONSE
1	Number of Years of Experience of the BIDDER in the field of Design, Manufacture & Supply of LPG Storage Vessels and Commissioning as per the Regulations of Statutory Authorities.	
2	Details on the Codes/Standards of Equipment Design, Manufacture, Erection & commissioning of Vessels and Evaporators at Client's Works.	
3	Details on Manufacturing Facilities available with the BIDDER for: a) Metal Forming Machines. b) Heat Treatment Facilities	
4	Details of Quality System (with stages of internal Inspection) followed for the Vessel Building and Testing of Capacity.	
5	Details of Electrical/Electronic Control Panel Design, Manufacturing and Testing Facilities for Vessels and Evaporators.	

Section II : Qualifying Criteria

The Bidder has to compulsorily meet the following requirements to get qualified for submitting an offer for the LPG Mounted Storage & Supply Facility: (Additional Sheets shall be attached with the OFFER, to provide requisite details) **Otherwise the offer are liable for rejection.**

S.No	PARTICULARS	VENDOR'S RESPONSE
6	The tenderer should be CCOE approved fabricator of Pressure vessels under SMPV rules 1981(unfired). Copy of license should be enclosed along with the technical bid.	
7	The BIDDER shall have a minium of TEN Years of Contunuous Experience in the Field of Design, Manufacture, Supply, Erection, and Commissioning of LPG Strorage Vessals and Evaporators with CCOE approval	
8	The BIDDER might have supplied, erected & commmisioned atleast FIVE numbers of LPG Storage Vessels and atleast one no. among it to be of Mounted type and Evoporators with Associated Accessories (including Safety Associated Accessories (including Safely Devices) of Capacity 20 Ton and above.	
9	Performance Certificate in the enloed FORMAT for a period, not less than one year, from CUSTOMERS AND Rreference List of custimrs wth full contact details of CONTACT PERSON, who are the End Users of supply as per CLAUSE No.8	
10	BHEL reserves the right to verify the information provided by vendor, and In case, it is found to be false/incorrect, the offer shall get rejected.	
11	Details on SERVICE-AFTER-SALES Set-up in India including the Addresses of Agents/Service Centers in india, to be furnished.	

Section III : BID / OFFER FORMATS

The BIDDER has to comply with the following, for accepting the Technical Offer for scrutiny by the Purchaser:

S.No	PARTICULARS	VENDOR'S RESPONSE
12	The BIDDER shall SUBMIT the offer in TWO PARTS Technical (with PART A & PART B) & Commercial and Price Bid.	

13	The OFFER Shall contain a comparative statement of Technical Specifications given by BHEL and the offer Details submitted by the Bidder, against each Clause. A just 'YES' or CONFIRMED' or NO-DEVIATION' or 'ACCEPTED' or similar words in the technical coparativ statement may lead to disqualification of the Technical offer.	
14	The Technical offer shall be supported by product Catalogue and Data Sheets In ORIGINAL and compleate technical details of 'Bought-out-Items' with copies of Product Catalogue (if applicble)	
15	The Commercial Offer shall contain the Scope of supply and the Un-Priced Part of the Price -bid, for confirmation of the inclusion of all the accessories, auxillar parts, safety devices, spares consumbles, etc with the main vessel/equipment, to meet the technical specification requirements.	
16	Earlier performance/field experience (including service support) if any, with BHEL for the BIDDER's Equipement, will be a reckoning factor for the technical qualification of the OFFER.	
17	The expected delivery period (including the time for Pre-Dispatch Inspection clearence by BHEL) for the LPG Storage vessels and Evaporators wth associated Accessories & Safety Devices, is not more than Four months (which includes time for General Arrangement Drawing approval by BHEL also) from the date of issue of BHEL purchase order. The erection & commissioning, including clearance from the local authorities and statutory agencies, shall be compleate in a period of Two Months , after the receipt of equipment at site.	

	DESIGN, FABRICATION, SUPPLY, ERECTION, COMMISSIONING- 2X40MT LPG /PROPANE MOUNDED STORAGE FACILITY AT THIRUMAYAM/PUDUKOTTAI (DIST)/TAMIL NADU			
Sl.No	BHEL Specification	Description	Vendor's offer	Deviation if any,vendor to specify
1	NAME OF WORK	DESIGN , FABRICATION ,SUPPLY , ERECTION & COMMISSIONING OF 2 X 40 MT LPG/PROPANE SERVICE MOUNDED TYPE BULLETS , VAPOURIZOR, UNLOADING FACILITIES , SAFETY AND FIRE FIGHTING SYSTEM , EMERGENCY SHUTDOWN SYSTEM , Etc WITH MANDATORY REQUIREMENT . ALL CONFORMING TO THE STANDARDS MENTIONED AS PER SATUTORITY AUTHORTIES AGAINST EACH ITEM ON ESTABLISHING FACILITIES		
2	BRIEF DESCRIPTION OF WORK	M/s. BHEL / Tirchy has proposed to set up 2 x 40 MT capacity of LIQUID PETROLEUM GAS STORAGE YARD in the premises of BHEL , at THIRUMAYAM to meet day to day LPG requirement at a pressure of maximum 1.5 kg/sq.cm at user point through new pipeline with pressure regulation valve for a capacity of nearly 0 to 1000 kg per hour with 3 x 500 Kg/ hr of vaporizer, 2 x 5000 kg/ hr unloading compressor/pump with required piping, valves, fittings, gauges, vents, drains and other accessories as per the requirement of statutory authority and for the operational maintenance convenient.		
3	PROJECT LOCATION	BHEL / THIRUMAYAM at PUDUKOTTAI DIST / TAMIL NADU		
4	LPG MOUNDED STORAGE TANK			
4.1.1	Storage Capacity / Tank Capacity	2 x 40 MT		
4.1.2	Service	LPG/PROPANE		
4.1.3	Water capacity of tank	Vendor to specify		
4.1.4	Design Code	PD 5500 + SMVP (U) Rules 1981/PD 5500 Latest edition and OISD 150		
4.1.5	Working Temperature	Ambient		
4.1.6	Design Pressure	19.5Kg/cm2 + Static Head + Ext Pressure		
4.1.7	Design Temperature	(minus) 6 DEG. TO (plus) 55 DEG C		
4.1.8	Hydro test Pressure	27.50Kg/cm2 (g) at the Top		
4.1.9	Manhole with cover on Shell	600mm / To be mentioned by offerer		
4.1.10	Corrosion Allowance	1.5 mm		
4.1.11	Radiography	100 % to be done		

4.1.12	Heat Treatment	Complete Vessel Stress Relieving to be carried out		
4.1.13	Joint Efficiency	One		
4.1.14	Inspection Agencies	List of CCOE approved Third party inspection agencies to be mentioned by offerer		
5	NOZZLE FOR FITTINGS/VALVES/GAUGES etc			
5.1	MANHOLE	Size,Qty,End,Schedule,Rating to be specified by vendor.		
5.2	HANDHOLE	Size,Qty,End,Schedule,Rating to be specified by vendor.		
5.3	LIQUID INLET	Size,Qty,End,Schedule,Rating to be specified by vendor.		
5.4	LIQUID OUTLET	Size,Qty,End,Schedule,Rating to be specified by vendor.		
5.5	VAPOUR OUTLET	Size,Qty,End,Schedule,Rating to be specified by vendor.		
5.6	VAPOUR BALANCING	Size,Qty,End,Schedule,Rating to be specified by vendor.		
5.7	PRESSURE GAUGE	Size,Qty,End,Schedule,Rating to be specified by vendor.		
5.8	TEMPERATURE GAUGE	Size,Qty,End,Schedule,Rating to be specified by vendor.		
5.9	SAFETY RELIEF VALVE	Size,Qty,End,Schedule,Rating to be specified by vendor.		
5.1	DRAIN	Size,Qty,End,Schedule,Rating to be specified by vendor.		
5.11	LEVEL GAUGE	Size,Qty,End,Schedule,Rating to be specified by vendor.		
5.12	HIGH LEVEL GAUGE	Size,Qty,End,Schedule,Rating to be specified by vendor.		
6	CONSTRUCTION OF MATERIALS			
6.1	Shell	Specification to be mentioned by offerer		
6.2	Dished Ends / Pad	Specification to be mentioned by offerer		
6.3	Flanges / Couplings	Specification to be mentioned by offerer		
6.4	Pipes	Specification to be mentioned by offerer		
6.5	Studs & Nuts	Specification to be mentioned by offerer		
6.6	Gaskets	Specification to be mentioned by offerer		
6.7	Pipes for liquid and vapour line etc. inside the fenced area	106 GR B SCH 80		
6.8	Couplings	A 105		
7	DIMENSIONS OF BULLET			
7.1	Shell Thickness	To be mentioned by offerer		
7.2	Dish Thickness	To be mentioned by offerer		
7.3	shell Diameter	To be mentioned by offerer		
7.4	Overall Length	To be mentioned by offerer		
7.5	Manhole	Details to be mentioned by the offerer		
8	VAPOURISER			
8.1	Code of Manufacture	Vendor to specify		
8.2	Quantity	3 Nos		
8.3	Capacity per One vapourisor	500 Kg/ hr		
8.4	Type	INDIRECT ELECTRICALLY HEATED WATER BATH VAPOURSIER		

8.5	Operating Pressure	Vessel:Atmospheric Coil: 7 kg/cm ² (g)		
8.6	Design Pressure	Vessel:Atmospheric Coil: 22 kg/cm ² (g)		
8.7	Test Pressure	Coil :27.5Kg/cm ² .		
8.8	Design Temperature	Vessel and coil :100 Deg C		
8.9	Operating Temperature	Vessel and coil : 30 to 80 Deg C		
8.1	Heater capacity/vapouriser	72 KW		
8.11	Operation mode	The complete system shall be fully automatic		
8.12	Condition of LPG Vapour	Various interlocks to be provided so that the LPG Vapour is produced to meet the demand and no liquid should flow downstream of the Vapouriser.		
8.13	Safety System	All required control and safety system to be mentioned and all electrical components and control panels shall be flameproof, certified by CMRS and approved by CCOE, Nagpur.		
8.14	Operating pressure at user point	0.04 to 1.5 kg/cm ²		
8.15	Inlet / Outlet pipe size	Inlet: 40mm NB Outlet: 50mm NB		
8.16	Approval from the Chief Controller of Explosives, Nagpur	Copy of certificate to be enclosed along with the offer.		
8.17	THE VAPOURISER INCLUDES PIPING, NECESSARY VALVES, PRESSURE CONTROL VALVE, GAS FILTER ASSEMBLY	ALL TYPE OF VALVES LIKE SOLENOID VALVE AT LIQUID LINE, PRESSURE CONTROL VALVE, PRESSURE RELIEF VALVE,SAFETY VALVE,GAS FILTER ASSEMBLY, FLOW METER & OTHER NECESSARY COMPONENTS/INSTRUMENTS SHALL BE MENTIONED SPECIFICALLY WITH MAKE.		
8.18	MATERIAL OF CONSTRUCTION			
8.18.1	Cylindrical tank	IS 2062		
8.18.2	Coil	SA 312 Type SS 304		
8.18.3	Flanges	A105/ANSI B 16.5/CLASS #300		
8.18.4	Dish Ends	WPB 238		
8.18.5	Water bath type	IS 226		
8.18.6	Heaters	Ni. Cr.		
8.18.7	Pipings	SA 312 Type SS 304		
9	LPG UNLOADING PUMP / RECOVERY COMPRESSOR			

9.1	Quantity	2 Nos		
9.2	Capacity	200 lpm		
9.3	Type	Non lubricating		
9.4	Make & Model No.	Corken & Model 291		
9.5	Maximum discharge pressure	23 Kg/cm2		
9.6	Accessories	Base Plate for Compressor & Motor Knock out Drum Pressure Gauge Temperature Gauge Ball Valves Pressure Gauge [0-300 psig] Needle Valve POP Action Valve 4 Way Valve		
9.7	Motor Details	Type: Flame proof, weather proof, TEFC Squirrel cage, Induction motor Standard followed: IS 2148/1969 suitable for Gas Group IIA&B Motor Rating: 7.5 HP Motor Speed: 1440 rpm Construction : Mounting Horizontal Roof mounting Insulation : "B" Class Duty: Continous duty IP 55 Starter : DOL Non FLP Push Button : Flameproof, ON/OFF Make: Crompton,Seimens,ABB,Kirloskar		
10	DECANTING PUMP	Make: Corken USA Type: Positive Displacement Vane type Model: Z 2000 Capacity: 12 M3/hr Pump speed: 600 rpm Head : 120 psi Suction Delivery sizes : 50 x 50 NB		

10.1	MATERIAL OF CONSTRUCTION	Case, Heads, Rotor, Cam :To be specified by the offerer Side Plate: A 536 Ductile Iron Bearing Cap : Gray Iron Seal Rotor : Carbon Shaft : Steel Vanes: Plastic Relief Valves: Steel Bearing: Cylindrical Roller Seals: Mechanical		
10.2	MOTOR	Type : Flame proof, weather proof, TEFC Squirrel cage, Induction motor Standard followed: IS 2148/1969 suitable for Gas Group IIA&B Motor Rating: 5 HP Construction : Mounting Horizontal Roof mounting Insulation: 'B' Class Duty: Continuous duty IP 55		
10.3	ACCESSORIES	Ball Valves(Quantity 3 nos.) Pressure Gauge [0-300 psig] Needle Valve By - Pass valve Strainer Y Type Liquid Flow Indicator Non Return Valve – Wafer		
11	SAFETY FITTINGS / VALVES FOR LPG BULLETS / PIPELINE , ETC	Valves like (a)Safety Relief Valve on tank, (b)Excess Flow Check Valves for liquid and vapour, Vapour balance, Drain and Pressure Gauge etc., (c)Pressure Gauge with Isolation valve (d)Temperature Gauge with Thermocouple (e)Pop Action Valves (f)Fixed Level Gauges (g)Remote Operated Valves(ROV's) and any other valves required to meet the CCOE to be mentioned		
11.1	Safety Relief Valves(3 nos on each tank)	Specification, material of construction , make are to be mentioned		
11.2	Excess Flow Check Valve for Liquid Inlet, Outlet, Vapour Outlet.	Specification,quantities,material of construction , make are to be mentioned		
11.3	Excess Flow Check Valve for Vapour Balance.	Specification,quantities,material of construction , make are to be mentioned		
11.4	Excess Flow Check Valve for Drain	Specification,quantities,material of construction , make are to be mentioned		
11.5	Excess Flow Check Valve for P. Gauge	Specification,quantities,material of construction , make are to be mentioned		
11.6	3/8" Pressure Gauge with Isolation valve	Specification,quantities,material of construction , make are to be mentioned		

11.7	Temperature Gauge with Thermocouple	Specification,quantities,material of construction , make are to be mentioned		
11.8	Pop Action Valve	Specification,quantities,material of construction , make are to be mentioned		
11.9	Level Gauges like Fixed Level Gauge,Rochester Gauge,Simple magnetic level gauge	Specification,quantities,material of construction , make are to be mentioned		
11.1	ROV's	Specification,quantities,material of construction , make are to be mentioned		
11.11	Alarms for High and Low level alarms and High Pressure alarms	Specification,quantities,material of construction , make are to be mentioned		
11.12	Gas Leak Detecting Sensors/Systems	Specification,quantities,material of construction , make are to be mentioned		
11.13	Any other valves required to meet the CCOE to be mentioned	Specification,quantities,material of construction , make are to be mentioned		
11.14	Cathodic protection and surface coating	i)The tanks shall be provided with the sacrificial Anode type cathodic protection in addition to surface coating. The sacrificial anode shall be either a Zinc or Magnesium anode. . The life of the sacrificial anode shall be minimum 15 years. ii)A facilityshall be provided to check the potential of the anode and the consumption of the anode.		
12	PIPELINE INSIDE LPG YARD FOR LIQUID / VAPOUR			
12.1	Material	ASTM A 106 Gr.B Seamless Pipe for Liquid Line / Vapour line		
12.2	Pipeline sizes	Pipeline sizes for Liquid inlet / outlet, Vapour balance / outlet and Drain line etc., to be mentioned by the offerer		
13	STRUCTURAL STEEL			
13.1	Comprising of MS Angles, Structural Steel and pipes for entire Inside LPG Yard including fire Fighting system & Fenced Area.	Scope of supplier		
13.2	Bulk Head Type	Structural Steel Fabricated Bulk Head to withstand rigidity and pull away force of the LPG Tank Lorry.		
13.3	Crash Post Type	To protect the unloading area from accidental damages by Tank lorry.		
14	STRAINERS / NON RETURN VALVES	Size , Quantity & Make to be mentioned by the offerer		
15	PRESSURE REGULATING STATION			
15.1	Pressure regulating valve			
15.2	Make	Kromshroder/Invensys/Honeywell/Sensus/Reputed make		

15.3	Inlet Pressure	0 to 17 Kg/cm ²		
15.4	Outlet Pressure	0-4 Kg/cm ²		
15.5	Flow Rate	0 - 1500 Kg/Hr		
16	Flow Meters			
16.1	Quantity	2 nos.		
16.2	Capacity per Flow meter	1000 Kg/Hr		
16.3	Type of Flow meter	To measure and indicate in m ³ /Hr and Kg/Hr and Totaliser		
16.4	Make	Kromshroder/Invensys/Honeywell/Asco/Reputed Make to be accepted by BHEL		
17	FILTERS	Capacity & specn of Filters to be mentioned by offerer.		
17.1	Make	Kromshroder/Invensys/Honeywell/Asco/Madas/Reputed Make to be accepted by BHEL		
17.2	End connection	End Connection FE 300#.		
18	EMERGENCY SHUT OFF VALVE	Specn of Emergency Shut Off Valve to be mentioned by the offerer.		
18.1	MAKE	Kromshroder/Invensys/Honeywell only		
18.2	End connection	FE 300#		
19	PIPELINE & FITTINGS INSIDE YARD for Liquid Line / Vapour line	1. Material specification : IS 6044 2. Design Temperature : 80 Deg. C. 3. Working Pressure : To be specified by the offerer 4. Hydrostatic test pressure : To be specified by the offerer 5. Material : CS ASTM A 106 Gr. B Seamless Sch 80 Pipe 6. Make:- BHEL/MSL / Jindal/Reputed makes acceptable to BHEL 7. Pipe Sizes for Liquid Inlet, Liquid Outlet, Vapour Balance, Vapour Outlet, Drain Line :- To be specified by the offerer.		
20	DECANTING HOSES			
20.1	Hoses with Fitting for Liquid and vapour	Double Ply Wire Braided Neoprene Hose 2" X 4 mtr long with ACME Fitting for Liquid . Double Ply Wire Braided Neoprene Hose 1 1/2" X 4 mtrs long for Vapour. ACME Female Nut with serrated Nozzle for vapor & liquid - To be specified by the offerer		
20.2	Make	MARKWELL		
20.3	Standard	BS-4089-1981 TYPE - 1 /IS 9573/1980		
20.4	Working Pressure	355psig		
20.5	Burst Pressure	1200psig		

20.6	End Fittings	300 # FLANGE AT ONE END CS ZINC PASSIVATED ACME NUT AT OTHEREND		
21	HARDWARE ITEMS	Comprising of SORF Flanges ANSI B16.5 CLASS 300 & CLASS#150 (Forged), Bends, Tees, Reducers Seamless Sch 80, C A.F Gaskets various sizes, Nuts & Bolts etc., to be mentioned by the offerer as required.		
22	PRESSURE GAUGES	Various pressure gauges required including sizes & pressure range to be mentioned by the offerer		
22.1	Make	Wika/H guru/Liebig/Honeywell only		
23	EARTHING STRIPS	Required for Tanks / Unloading Pump, Vapouriser, Compressor and Copper Jumpers for all Flanges etc., to meet the CCOE / others to be mentioned by the offerer.		
24	INSTRUMENT CONTROL PANEL			
24.1	Type	Weather proof / Flame proof		
24.2	Make	L&T, Siemens or Equivalent acceptable by BHEL		
24.3	Contactors	L& T/ Siemens		
24.4	Approvals	CMRI		
24.5	Location	Outside LPG Yard ,Near Main Gate.		
24.6	Function	DOL Starter for Pump and Compressor High Level Tripping of Motors High Temperature Indicators for Automatic operation of Sprinklers Overload Relay ROV Controls Emergency Hooter (Industrial) Separate Panel for Leak Detection System with LL/ML/HL Indicators		
24.7	UPS	Parallel - redundant UPS of suitable capacity with a Battery back-up of 30 minutes at full load, for the uninterrupted power requirements of the instruments,ROV and jockey pump. The UPS shall provide 230V +/- 10%, 50 Hz +/- 3% AC supply to all field instruments. Scope includes providing the necessary battery bank, Control panel having rectifiers, inverters & all other accessories. The Control panel shall also consist of the outgoing distribution feeders with separate On/Off switch for the critical instruments and Jockey water pump.		
25	Time schedule for design, supply, erection, testing & commissioning	Six months from the date of issue of Purchase order		
26	FIRE WATER SYSTEM			

26.1	FIRE WATER STORAGE FACILITY	Will be provided by BHEL for which required input data to be provided by the vendor.		
26.2	FIRE FIGHTING SYSTEM	Fire Extinguisher DCP with metal cap - IS2191- Size and Quantity to be specified by the offerer Fire Buckets - Size and Quantity to be specified by the offerer Make - CCOE approved Makes only acceptable and to be specified by the vendor		
26.3	SPRINKLER SYSTEM	Details to be provided by offerer.		
26.4	Fire Hydrant System & Fire monitoring system	Make : Allied / Bombay Fire Stop/Reputed makes acceptable to BHEL Design : To be designed as per as per CCOE Norms and details to be specified by the offerer Qty: To be mentioned by offerer.		
26.5	FIRE WATER PUMPS			
26.6	DIESEL OPERATED WATER SUPPLY PUMP	Service : Hydrant & Sprinkler Water supply Liquid : Water Capacity : To be specified by the offerer Head : 70 meters Diesel Engine : Details to be provided by the offerer Make of Engine: Kirloskar/Reputed Makes acceptable to BHEL Motor (HP) : To be provided by the offerer Speed : To be provided by the offerer Cooling : Air Cooled Make of Pump : Mather & Platt/KSB/Sulzer/Kirloskar/BE Pumps Pump Model : To be provided by the offerer Suction & Delivery: To be specified by the offerer Type : Centrifugal Pump : Casing Cast Iron Impeller : Bronze Shaft : EN-8 Accessories : MS Fabricated base plate with coupling and coupling guard Fuel Tank: Capacity to be specified by the offerer Battery Starter: Details to be specified by the offerer		

26.7	ELECTRICALLY OPERATED WATER SUPPLY PUMP	Service : Hydrant & Sprinkler Water supply Liquid :Water Capacity : To be specified by the offerer Head : 70 metrs Motor (HP) :To be provided by the offerer Make of Motor : Crompton /Bharat Bijlee/Siemens/Kirloskar/ABB Make of Pump :Mather & Platt/KSB/Sulzer/Kirloskar/BE Pumps Pump Model :To be specified by the offerer Suction & Delivery: To be specified by the offerer Type :Centrifugal Pump RPM :To be specified by the offerer Pump :Casing Cast Iron Impeller : Bronze Shaft : EN-8 Accessories : MS Fabricated base plate with coupling and coupling guard Fuel Tank: Capacity to be specified by the offerer Electric Starter:Details to be specified by the offerer		
26.8	JOCKY PUMP	Service :Hydrant & Sprinkler Water supply Liquid : Water Capacity : To be specified by the offerer Head : 70 Mtrs. Motor : Motor shall be Energy efficient Motor HP :To be specified by the offerer Make of Motor: Crompton /Bharat Bijlee/Siemens/Kirloskar/ABB Type :TEFC RPM :2900 rpm Starter :Delta Starter Suction & Delivery: 50 MM & 32 MM Type : Horizontal Centrifugal Pump : Casing Cast Iron Impeller :Bronze Shaft : EN-8 Accessories: Base plate, Lovejoy Coupling, Coupling Guard, Foundation belt,etc.		

26.9	PIPELINE AND FITTINGS	<p>The Water Pumps shall be located within 50 metres from the LPG storage fencing.</p> <p>The required pipelines,valves,fittings,flanges and supporting clamps to be provided by the vendor.</p> <p>Civil works shall be carried out by BHEL.</p> <p>Size of pipelines,Schedule of pipes,valves and fittings and other required specifications including quantity of each items with Makes to be specified by the offerer.</p>		
27	IMPORTANT TECHNICAL ASPECTS TO BE NOTED DOWN BY THE BIDDER	<p>Bidder shall be in a position to design all Mechanical ,Electrical & Instrumentation equipment in the Liquefied Petroleum gas storage facilities . The Bidder shall take into consideration of all anchors parts , pipe lines, Excess flow valves, safety valves , isolation valves , regulating valves , line blinds, fittings and other miscellaneous equipment for the system to be in complete respect. The Bidder shall practice the most modern design and technology for the proposed system. The Bidder has to furnish general arrangement drawing with main components inner details such as storage tank , inner technical details including materials, Surface area ,etc.,</p>		
		<p>The Bidder should arrange G A Drawing, Quality plan , P & I diagrams for each work and get approved by BHEL Engineer concerned. All the drawings shall be submitted in 3D form also.</p>		
		<p>The Bidder should arrange for tank foundation obtaining construction approval CCOE / Nagpur .Selection , Inspection & despatch of material , Inspection / certification under Rule 33, Application and obtaining licences from C C O E / Nagpur , Inspection of Plant by Department of Explosive, Endorsement , Supply of documentation for the plant, Obtaining safety certificate from the competent authorities on completion of installation with in the licensed area , Training of our personnel in operation and maintenance are scope of the Bidder.</p>		
		<p>The Bidder should declare the Experience in the relevant field in the recent past , Financial Turn over , Capacity and the Working Establishment of similar nature.</p>		

28	APPROVAL FOR MANUFACTURING OF LPG BULLET ,VAPOURISOR UNIT & THEIR ACCESSORIES	COPY OF APPROVAL CERTIFICATE ISSUED BY CMRI / CCOE FOR MANUFACTURING OF LPG BULLET ,VAPOURISOR UNIT & THEIR ACCESSORIES TO BE ENCLOSED		
29	DESIGN APPROVAL	Design / Drawing approval for manufacturing & complete installation of LPG bullet & Vapourisor etc, from CCOE / Nagpur & Local CCOE at Chennai .		
30	STATUTORY REQUIREMENT	The Scope of the Tender includes getting approval for Installation of L P G Facility at B H E L , THIRUMAYAM IN PUDUKOTTAI DIST,TAMIL NADU. The Bidder should coordinate and obtain necessary clearance certificates with all Statutory bodies such as Explosives, Factory Inspectorate,Pollution Control.etc., Charges on this account if any shall be indicated in the Price Bid separately.		
31	CODE OF CONSTRUCTION	The Bidder shall constructs strictly in accordance with the following codes of practice.		
		1. Static and Mobile Pressure vessels Rules(Unfired) -1981 with latest amendments if any.		
		2.Directives of CCOE / Nagpur to be adhered.		
		3.All pipe lines and fittings to confirm to IS 6044		
32	QUALITY PLAN	The Bidder should arrange Quality plan for each work and get approved by Engineer concern.		
		The Bidder shall follow relevant ASME section for Liquid Oxygen Storage System and Liquid Oxygen Quality should confirm to IS 309.-1992		
		The Bidder should guarantee full capacity of Liquid Oxygen in the filled condition.		
		The Bidder should furnish the maximum permissible evaporation losses , Liquid transfer losses of the proposed system.		

33	ERECTION & COMMISSIONING	The Erection & Commissioning and handing over of the system is in the scope of Bidder. The supplier shall deploy skilled technicians for installation & commissioning of LIQUID LPG STORAGE AND VAPOURIZATION SYSTEM, FIRE FIGHTING SYSTEM AND CONNECTING TO THE PROPOSED PIPE NET WORK and qualified Engineers/ Supervisors for the supervision of work . Only Engineering graduates and / (or) Diploma holders in relevant engineering shall be employed for supervision.		
		The work shall be executed in a professional manner adopting safe working practices. All Statutory Regulations and as promulgated from time to time and as required for good Engineering practice shall be adhered to.		
		All Statutory labour laws like PF , ESI etc., in respect of labour shall be strictly adhered to.		
		The Bidder may visit the BHEL Site at Thirumayam / Trichy for LOX installation and storage, piping distribution, for assessing the quantum of work involved, before quoting. The acquaintance of the site condition is very much essential before quoting for the system.		
34	CIVIL WORK	All civil work will be carried out by BHEL for the entire Project and the required drawings details will have to be furnished by the Supplier to BHEL along with the offer or within two weeks of Purchase Order. The civil drawing should indicate the dynamic loading or foundation details of the vessel foundation drawing. If any special requirement in the foundation are to be considered , you may please indicate the same. 4 Set of G A drawing with foundation details are needed.		
35	SAFE CUSTODY & PRESERVATION OF COMPONENTS	The safe custody of storage vessel , Evaporator, Regulation system till commissioned and handed over will also be under the scope of the contractor		
		It is the responsibility of the supplier to apply touch up painting on all equipment before erection at his cost .		
		Preservation of all equipment at all stages of handling, transporting to site of work or Pre Assy Yard , Pre - Assembly Erection, Testing, Commissioning , and till the unit is handed over to BHEL for regular operation.		

36	GENERAL CONDITIONS	The indent of this specification is to provide services for executing the projects according to most modern and proven techniques and codes. The omission of specific reference to any method, and equipment or materials necessary for the proper and efficient services towards installation shall not relieve the contractor of the responsibility of providing such services / facilities to complete the work or portion of work awarded to the Supplier. The quoted rate shall deem to be inclusive of all such contingencies.		
37	PAINTING	Details to be specified by the vendor as per CCOE norms.		
38	VENDOR'S BRIEF SCOPE OF SUPPLY	Detailed scope of supply to be provided by offerer . I.e itemwise/component wise including individual item capacity,material , qty & make etc to be furnished along with offer for following items vide sl.no 38.1 to 38.16.		
38.1	a) Supply, Installation and Commissioning of the entire system (as mentioned above specification) as per CCOE Norms and to Customer's Satisfaction.			
38.2	b) Scope restricted to Inside LPG Yard including Fire fighting system & Fenced Area and Fire Water system outside the fenced area.			
38.3	c) Proving and Laying Cables (Flame Proof) inside LPG Yard as per the details provided and for fire water system outside the fenced area.			
38.4	d) Providing all Technical Help required related to LPG Installation.			
38.5	e) Providing all related Drawings like P & I (Process & Instrumentation) and Layout Drawing, Complete Civil Drawings.			
38.6	f) Complete Initial Drawings Approval from CCOE (Chief Controller of explosives – Nagpur).			
38.7	g) Complete 3rd Party Inspection for acquiring Rule for fabrication & installation of entire LPG facilities..			

38.8	h) Obtaining Final License from CCOE – Nagpur towards the Installation.			
38.9	i) Endorsement of the CCOE License from Local CCOE office and getting approval from Inspectorate of Factories and Pollution Control Board.			
38.1	j) Training of operation & maintenance staff of LPG facilities.			
38.11	k) Providing complete Guarantee Certificates / Product Manuals and Tank History file for project in 4 sets. (1 Original + 3 Xerox copy)			
38.12	l) Required consumables like cutting gases, welding electrodes for installation purposes .			
38.13	m) The crane facility required for unloading & installation of LPG SYSTEM at site			
38.14	n) From single point power source (Panel board) to all concerned Electrical Equipments like Pump , Compressor , Vapourisers,Fire water pumps etc.			
38.15	o) Complete Electrical equipments like FLP Glands, DOL Starters etc.			
38.16	p) Bidders shall deploy complete set of Tools & Plant for Erection, Testing Commissioning, and Hand over of the liquid LPG storage facility installation for regular operation.			
39	BHEL SCOPE OF SUPPLY	Vendor to confirm for following items vide Sl.no 39.1 to 39.6.		
39.1	a) Complete Civil work involved inside LPG Yard which includes Civil Pedetals for Tanks, Pump & Compressor Shed, Vapouriser Shed, Control Room, Unloading Gantry, Fencing, Gates, Instrcutions and Sign Boards etc.			
39.2	b) Providing overhead water tank dedicated to LPG Yard for Fire Fighting. Water Storage Calculation to be provided by the sucessful vendor.			

39.3	c)Water Storage sump will for fire fighting system will be provided by BHEL.			
39.4	d) Providing single point Power source (Panel Board) to all concerned Electrical Equipments like Pump , Compressor , Vapourisers etc.			
39.5	e) Explosive Fees towards Drawing Approval and towards Final License Fees for 3 years as applicable.			
39.6	f) Local NOC from District Magistrate/Collectorate from the date of receipt of Drawings Approval.			
40	PRE-DISPATCH INSPECTION AT SUPPLIERS WORKS	LPG BULLET ,VAPOURISOR UNIT & THEIR ACCESSORIES,FIRE WATER PUMPS AND FIRE FIGHTING SYSTEM,etc Shall be offered for Pre-dispatch inspection by BHEL Engineers at supplier's works		
41	PROVE OUT AND ACCEPTANCE	LPG bullet & their facilities establishment completion will mean after obtain the necesssary inspection completion, statutory approval and physical demonstration of all systems to the satisfaction of BHEL engineers for the safe operation of the system. A plant will be operated along with auxillary equipments such as filling of LPG to the bullet, lining of LPG through vapouriser, testing of sprinkler fire fighting system, etc. as per the normal required parameters to satisfy the design condition.		
42	WARRANTY	Warranty for products against defetive materials and workmanship for a period of 12 months from the date of commissioning or 18 months from the date of despatch whichever is earlier		
43	SPECIFIC NOTE	Bidders must submit valid CCOE certificate copy for manufacturing of LPG bullet, vapouriser unit & other facilities along with their offer, failing which offer will be liable for rejection.		

S.KUTUVA JANARDHANAN
DEPUTY MANAGER
GAS SERVICES/THIRUMAYAM PROJECTS

M.SUBRAMANIAN
MANAGER
GAS SERVICES