



BHARAT HEAVY ELECTRICALS LIMITED
HIGH PRESSURE BOILER PLANT
TIRUCHIRAPPALLI -620014
Tel: 0431-2577645,
Fax: 0431-2520250,
E mail: pgavictor@bheltry.co.in

EXPRESSION OF INTEREST FOR BULK LPG REQUIREMENT

BHEL's Trichy Complex is the leading boiler manufacturers in the world with annual turnover of 2500 million USD. **BHEL Trichy & PPPU, Thirumayam combined require 7,500 MT (per annum Approx) of LPG in 18MT tankers** (LPG conforming to standard **IS 4576 latest**). The yearly consumption of LPG amounts to **7,500 MT (APPROX)**. The details of which are available in BHEL website <http://www.bhel.com> (Tender notification Page) and in Central Public Portal <https://eprocure.gov.in>. Interested parties may contact the person in charge indicating the respective reference number given by submitting the Techno Commercial MoU (Total 7 pages) duly signing all the pages with office seal on or before 20.10.17.

REFERENCE NUMBER:
BHEL-TRY/MM/PSS/EOI/2017/01

DGM/Purchase/PSS/MM,
4th Floor – Bldg. 24,
Bharat Heavy Electricals Ltd.,
Tiruchirapalli-620014, Tamilnadu.
Ph: 0431- 2577454/7645/7826,
Fax: 0431- 2520719
Email: pgavictor@bheltry.co.in
rn@bheltry.co.in

BHARAT HEAVY ELECTRICALS LIMITED

(A GOVT. OF INDIA UNDERTAKING)

Tiruchirappalli – 620 014, TamilNadu.**Website: www.bhel.com****TECHNO-COMMERCIAL MEMORANDUM OF UNDERSTANDING BETWEEN BHEL AND VENDORS
FOR SUPPLY OF LIQUEFIED PETROLEUM GAS THROUGH TANKER LORRIES****1. GENERAL:**

BHEL intend to procure Liquefied Petroleum Gas on FOR destination basis as per their monthly requirement. The Destination of delivery is BHEL HPBP & SSTP/Trichy and BHEL/PPPU/Thirumayam. The installed plant static tank capacities of BHEL HPBP & SSTP/Trichy are 180 MT and PPPU/Thirumayam is 80 MT.

2. SUBMISSION AND OPENING OF TENDER:

BHEL intend to procure LPG on monthly basis through E-Procurement as explained in the attached Sheet. Tender will be hosted in E-Procurement Portal on 24th day of every month for the next month requirement and Bidders shall submit their offer in the E-Portal and the same will be opened on 3rd day of successive month. If 3rd day falls on Sunday or closed Holiday for BHEL, the Tender will be opened on 4th day.

3. ITEM TO BE SUPPLIED: LIQUEFIED PETROLEUM GAS (LPG) through Tanker Lorries**4. PHYSICAL PROPERTIES / CHARACTERISTICS / TEST**

CERTIFICATE: As per Annexure – I attached (Specified as per IS: 4576)

5. QUANTITY:

The average monthly consumption of Trichy is 500 to 650 MT and 54 to 72 MT for Thirumayam approximately.

The above said monthly quantity is approximate only, based on our present production schedule. However, the successful tenderer shall have to cater the increase in quantity if any during any month, at the same price and terms & conditions. But, they are not entitled to raise any claim for any reduction in quantity to any extent and whatsoever reason during any month. Quantity tolerance of $\pm 10\%$ is permissible on the order quantity.

6. General:

- i. Tenderers who failed to comply with earlier contractual obligations of BHEL which resulted in short closure / Cancellation of any contract is not eligible to participate in this tender.
- ii. Companies black listed /ordered for blacklisting by BHEL would not be considered. Tenderers who are having unresolved dispute with BHEL will not be considered under any circumstances.

7. NON – PERFORMANCE OF CONTRACT / CANCELLATION OF CONTRACT / RIGHTS OF THE COMPANY:

BHEL reserves the right to cancel the contract if the quality of material delivered falls below the required specifications and also if the deliveries are not made in accordance with the delivery schedule, as indicated by BHEL. In the event of cancellation of the contract as mentioned above, the party will be blacklisted. BHEL reserves the right to make alternate purchase by operating the risk purchase clause of BHEL against the successful tenderer.

8. CLEAR UNDERSTANDING:

When a tenderer submits his tender in response to this document, he will be deemed to have understood fully about the requirements of the terms and conditions of the tender.

9. VALIDITY OF OFFER:

In consideration of the tenderer being allowed to quote for the supply, they shall keep the tender firm for a period of 7 days from the date of opening of the tender during which period or till the tenders are decided, whichever is earlier, the tenderer will not be free to withdraw the tender.



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Senior Engineer
MM / Purchase / PSS
BHEL, TRICHY - 620 014.

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10. PRICE:

The offered price should be for per MT and FOR BHEL/Trichy and BHEL/PPPU/Thirumayam separately. The Price for the quoted supply month shall be firm for the whole month.

11. PAYMENT:

Payment shall be made by EFT/ RTGS within 45 days of invoice date subject to receipt and acceptance of the material at our end. The successful tenderer shall ensure that the invoices are submitted to us within 7 days from the date of dispatch of material. Please note that, payment shall be made only for the actual quantity of the material received and accepted at our end and the actual weight of the material as per our weighbridge shall be reckoned for payment. Excess physical quantity than the invoiced quantity will not be considered for payment. Invoice should bear BHEL Purchase Order Number. Offers Deviating from the above payment will summarily be rejected.

12. DELIVERY SCHEDULE:

The successful tenderer shall make arrangements to deliver the required quantity of material as per our requirement. However, we reserve the right to regulate supplies by increasing/decreasing/suspending dispatches according to our production schedule, which shall be intimated to the successful tenderer. The successful tenderer shall strictly adhere to our delivery schedule and in case he fails to supply the material as per this delivery schedule, BHEL reserves the right to make alternate purchase by operating the risk purchase clause of BHEL against the successful tenderer. The tenderer has to confirm the availability of Three Tanker Lorries in BHEL Premises (for ensuring minimum quantity of 54 MT) at any point of time for which no detention charges is applicable for the LPG tanker lorries. The successful tenderer should ensure to supply minimum 7 Tankers during month end to meet the LPG requirement till the finalization of next month Tender.

13. TRANSPORTATION:

The successful tenderer shall make his own arrangements to deliver Liquefied Petroleum Gas at our Factory and the transportation charges applicable shall be fixed and firm and shall not vary on any account till completion of the entire ordered quantity. GST on Transportation Charge, if applicable, shall be shown separately. All precautions shall be taken to ensure that no contamination of the material happens during transit. Tenderer shall also comply to requirements under Annexure III.

14. UNLOADING / Rejection:

Our usual unloading time is from 8.00 a.m. to 4.00 p.m. on all normal working days, except on Sundays and other public holidays. But in case of any rejection, the successful tenderers shall make their own arrangements to take back the rejected quantity, at his own risk and cost. However, we shall try to ensure that the vehicles are not detained beyond reasonable time.

15. MATERIAL TEST CERTIFICATE:

Each consignment of Liquefied Petroleum Gas should accompany with a Test Certificate and the Test Certificate shall be handed over to the authorized officer of our Stores department without fail. The test certificates, missed if any, shall be submitted along with subsequent supplies.

16. DEFAULT:

Should it appear to BHEL that Bidders:

- a) are not taking any interest in timely commencement of the work.
- b) are not executing the contract in accordance with or as specified in the contract.
- c) Bidders or their authorized representative is not available to take orders regarding the execution of the Work.



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BHEL may, at Bidders expenses and without prejudice to any other right of it

- a) Perform such portion of the contract work as Bidders might have failed to execute or,
- b) Take the work wholly or part out of Bidders hand and re-contract the same to any other person /firm or
- c) Cancel the contract.

The company shall not be liable for any loss suffered by Bidders as a result of the company's action. Bidders shall indemnify the company against all losses suffered by the company and liabilities imposed on the company as result of the default committed by them.

17. BHEL reserves the right to reject any tender including the lowest, without assigning any reason.

18. All questions, disputes arising under, out of or in connection with this Tender/Contract shall be decided by the Management of the Company whose decision shall be final and binding on the Tenderer/Contractor.

19. Any suit or legal proceeding against Company in connection with this Tender/Contract shall be filed or instituted only in a Court having jurisdiction in the town of Trichy court only.

20. AWARD OF CONTRACT

BHEL Reserves the right

- To accept, at its sole and unfettered discretion, any tender for whole or part quantities or to reject any or all tenders without assigning any reasons whatsoever.
- To award the contract to one or more number of firms, if needed, which will be spelt in Tender.
- To enter into parallel contracts simultaneously or at any time during the period of contract with one or more tenderer(s) as BHEL may feel fit, if needed, which will be spelt in Tender.
- To place adhoc order simultaneously or at any time during the period of contract with one or more supplier(s) / tenderer(s) for such quantity and for such items as BHEL may feel fit, if needed, which will be spelt in Tender.
- BHEL does not bind itself to accept the lowest tender or assign any reason for non- acceptance of the same.
- The Purchase order resulting from this tender and any amendments to be issued subsequently with its terms and conditions and stipulations constitute the entire agreement relating to the tender between the successful tenderer and BHEL and both parties are bound by the terms and conditions.
- Landed cost shall be considered individually for each destination (i.e. HPBP & SSTP/Trichy and PPPU / Thirumayam) for price comparison and order placement.
- Tender will be processed through E-procurement.
- BHEL General conditions of Contract and Safety regulations form a part of this tender and are applicable to the extent required.
- In case there is any conflict between the standard terms and conditions, which are in conflict with any special instructions, the latter shall prevail.
- If more than one vendor becomes L1 the total enquiry will be equally shared among all the L1 vendors.

This Techno-Commercial MOU is valid till 30.11.2019. All Annexures — I to III form part of this MOU.



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K. RAJA PRAKASH
Senior Engineer
MM / Purchase / PSS
BHEL, TRICHY - 620 014.

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Technical Specification

Annexure — I

1. Liquefied Petroleum Gas (LPG):

LPG is a mixture of commercial butane and commercial propane having both saturated and unsaturated hydrocarbons. LPG marketed in India shall be governed by Indian Standard Code IS-4576 (Refer Table 1.0) and the test methods by IS-1448.

2. PHYSICAL PROPERTIES AND

CHARACTERISTICS 2.1 DENSITY

LPG at atmospheric pressure and temperature is a gas which is 1.5 to 2.0 times heavier than air. It is readily liquefied under moderate pressures. The density of the liquid is approximately half that of water and ranges from 0.525 to 0.580 @ 15 deg C. Since LPG vapor is heavier than air, it would normally settle down at ground level / low lying places, and accumulate in depressions.

2.2 VAPOUR PRESSURE

The pressure inside a LPG storage vessel / cylinder will be equal to the vapor pressure corresponding to the temperature of LPG in the storage vessel. The vapor pressure is dependent on temperature as well as on the ratio of mixture of hydrocarbons. At liquid full condition any further expansion of the liquid, the cylinder pressure will rise by approx. 14 to 15 kg./sq.cm For each degree centigrade. This clearly explains the hazardous situation that could arise due to overfilling of cylinders.

2.3 FLAMMABILITY

LPG has an explosive range of 1.8% to 9.5% volume of gas in air. This is considerably narrower than other common gaseous fuels. This gives an indication of hazard of LPG vapor accumulated in low lying area in the eventuality of the leakage or spillage. The auto-ignition temperature of LPG is around 410-580 deg C and hence it will not ignite on its own at normal temperature. Entrapped air in the vapor is hazardous in an unpurged vessel/ cylinder during pumping/ filling-in operation. In view of this it is not advisable to use air pressure to unload LPG cargoes or tankers.

2.4 COMBUSTION

The combustion reaction of LPG increases the volume of products in addition to the generation of heat. LPG requires up to 50 times its own volume of air for complete combustion. Thus it is essential that adequate ventilation is provided when LPG is burnt in enclosed spaces otherwise asphyxiation due to depletion of oxygen apart from the formation of carbon-dioxide can occur.

2.5 ODOUR

LPG has only a very faint smell, and consequently, it is necessary to add some odorant, so that any escaping gas can easily be detected. Ethyl Mercaptan is normally used as stenching agent for this purpose. The amount to be added should be sufficient to allow detection in atmosphere 1/5 of lower limit of flammability or Odor level 2 as per IS: 4576.

2.6 COLOUR

LPG is colorless both in liquid and vapor phase. During leakage the vaporization of liquid cools the atmosphere and condenses the water vapor contained in them to form a whitish fog which may make it possible to see an escape of LPG.

2.7 TOXICITY

LPG even though slightly toxic, is not poisonous in vapor phase, but can, however, suffocate when in large concentrations due to the fact that it displaces oxygen. In view of this the vapor possesses mild anesthetic properties.



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TECHNO-COMMERCIAL MEMORANDUM OF UNDERSTANDING BETWEEN BHEL AND VENDORS**FOR SUPPLY OF LIQUEFIED PETROLEUM GAS THROUGH TANKER LORRIES****2.8 THE SPECIFICATIONS AND REQUIREMENTS OF LPG ARE AS FOLLOWS:**

LPG SPECIFICATIONS (Salient Features as per LS 4576)			
MATERIAL CODE		DESCRIPTION	
130030250000		Liquefied Petroleum Gas as per the following technical specifications	
Specification of LPG			
Liquid Petroleum Gas will be of commercial propane / Butane mixture generally as per IS 4576 & conform to the following:			
1.	COMPOSITION: PROPANE - Min. 25% - Max. 45% ISO BUTANE - Min. 5% - Max. 20% N-BUTANE - Min. 45% - Max. 55%	TOTAL Min. 98%	ASTM D - 2163
	UN — SATURATED HYDROCARBONS & OTHERS	Max. 2%	ASTM D - 2163
2.	VAPOUR PRESSURE	Min. 80Psi, Max. 110Psi at 37.8° C.	ASTM D - 2163
3.	NET CALORIFIC VALUE	Min. 10, 700 K. Cal / Kg	
4.	HYDROGEN SULPHIDE	Absent	ASTM D - 2420
5.	DRYNESS	NO FREE ENTRAINED WATER	
6.	TOTAL VOLATILE SULPHUR % BY MASS	0.02% Max.	ASTM D - 2784
7.	COPER STRIP CORROSION at 38°C FOR 1 hr.	NOT WORSE THAN ONE	ASTM D - 1838
8.	ODOUR	LEVEL 2	
9.	RELATIVE DENSITY	Min. 0.54, Max. 0.56 at 15.6° C.	ASTM D - 2598
10.	VOLATILE EVAPORATIVE <u>TEMP.IN</u> Degrees C FOR 95% VOL. @760MM PRESSURE	2° C Max.	ASTM D - 1837
NOTE: Test certificate should indicate the values for all the above parameters.			

2.8.1 The composition of LPG should not be more than 75% butane and not less than 25% propane. The vapour pressure of LPG should not be less than 80 psi and not more than 110 psi at 37.8° C.

2.8.2 Every tanker receipt shall indicate the density and the temperature at the time of loading.

2.8.4 The vapour pressure should be specified in psi at 37.8°C



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GENERAL CONDITIONS OF CONTRACT**1. Definition and terminology:**

In the contract documents as hereinafter defined, where the context so admits, the following words and expressions shall have the following meaning: -

- The term 'Company' shall mean the BHARAT HEAVY ELECTRICALS LIMITED, Tiruchirappalli, Tamil Nadu.
- The term 'Engineer' shall mean the Engineer in charge of the work under contract or in his absence another person assigned by the Company.
- The term 'Contractor' shall mean the persons, firms or Company with whom the contract has been entered into and shall be deemed to include the contractor's successors, representatives, heirs, executors and administrators unless excluded specifically by the Contract.
- The term 'works' shall mean and include all works and items and services to be executed, supplied or done by the contractor under the contract.

2. Scope of work:

Scope of work shall be as specified in the tender.

3. General obligations:

The contractor shall be deemed to have visited and carefully examined the site and its surroundings to have considered the possibility or difficulties that may be caused to his operation by reason or any strike or non-operation by his own employees or labor working under him. The contractor shall provide everything necessary for the proper execution of works according to the intend and meaning of the schedules of qualities and the specifications taken together whether the same may not be particularly shown or described therein. The contractor shall carry out and complete the above work in every respect in accordance with this contract, and the direction of Engineer within the time specified. The Engineer may in his discretion and from time to time, issue further written instructions details, directions and explanations of the proper execution of the work, and shall reserve the right to alter, modify, change, withdraw such instructions, details etc.

4. Rates for items of work:

The rates entered in the schedule of rates of the tender are intended to provide for work duly and properly completed in accordance with the conditions of tender / contract. The rates quoted shall be deemed to have included all incidental charges or contingencies, which may not have been specifically provided in tender rates.

5. Time for completion:

The contractor shall complete in all respect the contract work within the stipulated time and date. In case the supplier fails to deliver the tendered material within the period specified in the contract the purchaser shall deduct liquidated damages as under. The contract shall be for a period of one month (30 days) from the date of award of contract and extendable further, based on the acceptance by both parties. The FOR/Destination Rate of Contract shall remain firm for the above said period of 30 days from the date of award of Contract.

5.1. Liquidated Damages:

It is clearly understood among the parties to the contract the "Time is the essence of the contract". Therefore, the delivery of the goods specified in the purchase order should be made within the time prescribed. Where the seller supplies or despatches the goods beyond the delivery period specified, the purchaser will have no obligation to accept the goods. If accepted liquidated damages at the rate of 1/2% of the price of goods delayed for each week of delay subject to a maximum of 10% of the order value.

5.2. Risk Purchase:

Alternatively the purchaser at his option will be entitled to terminate the contract and to purchase elsewhere at the risk and cost of the seller either the whole of the goods or any part which the supplier has failed to deliver or dispatch within the time stipulated as aforesaid or if the same were not available, the best and the nearest substitutes therefore. The supplier shall be liable for any loss, which the purchaser may sustain by reason of such risk purchase in addition to penalty at the rate mentioned in clause Penalty above.



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ANNEXURE III

**ENVIRONMENTAL MANAGEMENT/OCCUPATIONAL HEALTH AND
SAFETY SYSTEM REQUIREMENTS**

As per the environmental management system- SO 14001:2004 and occupational health and safety system- 18001-1999, we are committed to ensure that our transporters strictly follow specific environmental and OH and S requirements while transporting the materials to our factory. Your attention is drawn to the following act and rules, which you are earnestly requested to follow.

- i. The Motor Vehicles Act 1988 and Central Motor Vehicles Rules 1989
The Manufacture, storage and import of Hazardous Chemicals Rules 1989 iii.
Holding Fitness Certificate of the vehicle.

You are also requested to strictly adhere to the following statutory/legal requirements with regards to safety, which will be checked by our authorized officials, while your trucks reach our premises.

- a) The vehicles should have valid registration and road permit.
- b) The driver should have photo identified valid Heavy License (Original Only) and all other statutory documents. Also each should have attended special training for transportation of hazardous Chemicals and must possess certificate issued by the concerned authority to that effect.
- c) The driver's license must be duly endorsed by Road Traffic Authorities for transporting hazardous chemicals.
- d) The vehicle should have a Spark Arrester.
- e) The vehicle should have "Reverse Hooter".
- f) The "Pollution **under Control**" certificate should be available with the drivers in the vehicles.
- g) The First Aid Box, Fire Extinguishers and required safety appliance must be available in the vehicles.**
- h) Your vehicles while carrying materials to our company are not supposed to carry smoking materials, Match boxes, lighters, stoves etc.
- i) The Driver must bring along with him the Delivery Challan / Invoice of the material issued by our vendors, Test certificate for the LPG carrying and should produce the same to the authorities while reaching BHEL



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