

**WEST BENGAL MEDICAL SERVICES CORPORATION LTD.
(Wholly Owned by the Government of West Bengal)**

CIN: U85110WB2008GC126373 2008-09

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Memo No.: WBMSC/745

Date: 11/04/2013

Notice

Department of Health & Family Welfare has decided to procure Liquid Medical Oxygen for different Health facilities of the State. This will include supply of Liquid Medical Oxygen, Installation of Manifolds Vacuum Pumps, Laying of Pipe Lines, outlet points and Installation of Digital Gas Flow Meters. A draft bid document has been uploaded in the website www.wbmsc.co.in/www.wbmsc.gov.in.

An interaction session has been convened on **19.04.2013, 3.00 p.m.** at the **Conference Hall of WBMSC Ltd.** Interested bidders may like to attend.



**Managing Director
WBMSC Ltd.**

Memo No.: WBMSC/745/1(1)

Date: 11/04/2013

Copy forwarded for information to :

- 1) IT Cell of the Department with the request to upload this notice in the website of the Department of H&FW Department.



**Managing Director
WBMSC Ltd.**

TENDER FOR SUPPLY OF LIQUID MEDICAL OXYGEN AT VARIOUS MEDICAL COLLEGES AND HOSPITALS IN WEST BENGAL AND INSTALLATIONS OF CENTRALISED MEDICAL GAS PIPELINES SYSTEM INCLUDING SUCTION PIPELINE AND ALLIED WORKS

Schedule “A” for supply of Liquid Medical Oxygen along with allied activities

Schedule A1: Supply of Liquid Medical Oxygen along with allied activities to Calcutta Medical College, Calcutta National and Hospital, NRS MCH, S.S.K.M. Hospital & B.I.N., R.G.Kar MCH, Dr. B.C.Roy PG Institute of Paediatric Sciences MCH, and Chittaranjan Seva Sadan

Schedule A2: Supply of Liquid Medical Oxygen along with allied activities to Bankura Sammilani Medical MCH, Burdwan MCH, North Bengal MCH and Medinipur MCH

Schedule “B” for New Oxygen/ Nitrous Oxide Manifolds & Vacuum System

Schedule “C” for physical installation of liquid oxygen copper pipelines and new outlets in Departments/Units of MCHs and DHs, SDHs

Schedule C1: Rate per metre copper pipeline with all accessories

Schedule C2: Rate per new outlet point with all accessories

Schedule C3: Rate for Digital Gas Flow meters, providing mass and volume measurement, with installation and all accessories

1. Section 1: Instruction to Bidders

Scope of Bid

1.1 Background: Since the year 2006 the Department of Health and Family Welfare introduced supply through pipeline of medical oxygen in different Medical Colleges and Hospitals under BOT contract for a period of five years. This contract period is already over or going to be over soon. The DoHFW constituted a Committee to examine the usability of the system. This Committee recommended to installation Centralised Liquid Medical Oxygen supply system through the infrastructure already developed. In view of the above, the work of supply of Liquid Medical Oxygen as per latest I.P. requirement and pipeline system in the Medical colleges and Hospitals has been undertaken herewith.

Reputed agencies having proven expertise in this field are invited for supply of Liquid Medical Oxygen (LMO), installation and maintenance of necessary infrastructure.

1.2 Detailed scope of work and the relevant Schedules of the bid:

1.2.1. Supply of LMO and allied activities (Schedule A1 – A2)

- i. Conversion of existing centralised Compressed Medical Gas pipeline system to Liquid Medical Oxygen system at the locations mentioned in Annexure 1,
- ii. Operation & maintenance of the existing pipeline system which consists of medical oxygen, medical nitrous oxide, vacuum system, all outlets and all existing manifolds where the 5 year BOT contract has/will expired/expire,
- iii. Maintenance of performance parameters of medical gases and vacuum
- iv. Installation of VIE Tank of adequate capacity along with all accessories and obtaining Central Explosives Licence for the same and maintenance of the same,
- v. Installation of new outlets for medical oxygen, copper gas pipelines and vacuum points in these installations as per L1 rate in the Schedule C
- vi. Continuation of supply of nitrous oxide in present compressed form
- vii. Building new Manifold room in addition to the existing Manifold Rooms to cover expanded area of coverage with LMO in the space to be provided by the hospital authorities
- viii. Laying of pipeline from Oxygen vessel/Tank to the Manifold room

1.2.1.(a) Note

i. Since the space of the Manifold room is the property of the respective hospitals, the same will be utilised for the purpose of supply of LMO,

ii. The hospital authorities will provide space for building additional Manifold rooms

iii. LMO should be supplied through mobile vehicles and will be stored on 5/6/10/13/20/990/2600 kilo litre tanks/vessels, depending on the LMO consumption volumes, space availability, numbers and locations of Manifolds and the spread of LMO consuming departments and buildings,

iv. The rate will be quoted per unit M³ of the LMO inclusive of all transportation and maintenance expenses,

v. The responsibility of installing copper gas pipelines and outlets in departments currently using piped oxygen lies with the LMO supplier,

vi. The rate of any additional oxygen points and the rate of enhancement in length of gas pipeline in the buildings currently using piped oxygen supply will be admissible to the LMO supplier as per L1 rate in Schedule "C" for the copper pipe extension and unit outlet point installation,

vii. The operation and maintenance of the entire LMO supply system, including the maintenance of pipeline, outlet points and gas vessels/tanks/metres/installations for the MCHs will be the responsibility of the LMO supplier (L1 Bidder). The rates of the maintenance are considered inclusive of the manpower resources and are required to be included in the above mentioned per unit price of LMO,

The liquid oxygen tank will remain under the ownership of the supplier. The licence for the liquid oxygen tank installation will technically be in the name of the hospital authority. However, the responsibility for safe and secured maintenance of the entire infrastructure will lie with the LMO supplier of specified MCH groups/other health institutions during the contract period,

viii. Rate per M³ is the key determination for arriving at the L1 rate for supply of LMO in MCHs,

ix. The L1 bidder will be responsible for the supply of liquid oxygen gas at per M³ rates irrespective of the location/department/ward of the MCH, including future expansion areas in the institutions mentioned at Schedule "A",

x. The supply of LMO will be measured by Gas Mass Flow meter installed in a well-protected area adjacent to the LMO vessel connected with the main outlet pipe, to be kept under the control of the concerned hospital authority and the metre shall be read jointly by the hospital authority and the L1 supplier on pre-fixed dates of each month

as may be decided by the hospital authority. The same shall be measured and corroborated based on the consumption as measured by the sum total of the readings of Gas Mass Flow meters attached with the main outlet of all manifolds and those installed across the wards/departments/buildings of the hospitals.

xi. The hospital authority may, if so desired, ask for weight measurement of LMO supply (Gross Weight minus Tare Weight of the supply tanker) in addition to volume measurement as stated above, for the purpose of having additional information about the consumption as well as submission of information to higher authorities.

1.2.2 Schedule “B” for new Oxygen/Nitrous Manifolds and Vacuum System

i. Description of the Schedules:

- ia. Schedule B-1 (O Manifold 2+2 with Control Panel) with all accessories
- ib. Schedule B-2 (O Manifold 4+4 with Control Panel) with all accessories
- ic. Schedule B-3 (O Manifold 8+8 with Control Panel) with all accessories
- id. Schedule B-4 (O Manifold 10+10 with Control Panel) with all accessories
- ie. Schedule B-5 (N O Manifold 2+2 with Control Panel) with all accessories
- if. Schedule B-6 (N O Manifold 3+3 with Control Panel) with all accessories
- ig. Schedule B-7 (N O Manifold 4+4 with Control Panel) with all accessories
- ih. Schedule B-8 Vacuum with tank size 500L with dual pumps, filter and accessories
- ii. Schedule B-9 Vacuum with tank size 1000L with dual pumps, filter and accessories
- ij. Schedule B-10 Vacuum with tank size 2000L with dual pumps, filter and accessories
- ik. Schedule B-11 Vacuum with tank size 3000L with dual pumps, filter and accessories

ii. This work will be undertaken as and when required basis for the expansion of the Liquid Oxygen Points in various MCHs as mentioned in Schedule A1 to A2 and other new institutions which may require construction of new Manifolds for LMO and N O and the creation of Vacuum.

1.2.3 Schedule “C” for physical installation of liquid oxygen copper pipelines and new outlets in Departments/Units of MCHs and DHs, SDHs

i. This Schedule will cover rate for physical installation of Liquid Oxygen pipelines and new outlets in departments/units of MCHs, District Hospitals and Sub Divisional hospitals that will be covered for supply of oxygen to the patients,

ii. Description of the Schedules:

ia. Schedule C1-Per metre copper pipeline with all accessories,

ib. Schedule C2 –Per New Outlet Point with all accessories,

ic. Schedule C3- Digital Gas Flow meters, providing mass and volume measurement, with installation and all accessories,

iii. The rates for the laying of fresh pipelines and new outlets in institutions/buildings will be quoted as per Schedule C1, Schedule C2 and Schedule C3 as per the table below and subsequent notes,

iv. Table No.1

Schedule for quoting rate of copper pipeline and outlet supply	
C1- The rate of gas pipeline	Rs. C1 per metre of new copper pipeline, with all accessories, irrespective of the location/department/ward of the MCH and other Health Institutions
C2- The rate of new Oxygen points	Rs. C2 per new Oxygen Outlet point has been introduced, with all accessories, irrespective of the location/department/ward of the MCH and other Health institutions. The rate quoted will be for twin outlets.
C3-The rate for Digital Gas Flow meters	Rs. C3 per Digital Gas Flow meters, providing mass and volume measurement, with installation and all accessories
Detailed components in Section 3	Detailed components in Section 3

v. Note:

(i) Laying of pipelines and additional points in existing locations using piped oxygen – The responsibility of installation of Gas Pipeline and Oxygen Outlet points in the buildings and areas currently using piped oxygen supply, will lie with the L1 bidder, so as not to disrupt the medical operations, as selected in Schedule A1 to A2,

(ii) Laying of pipeline including vacuum and additional points in new premises/buildings being covered under piped oxygen supply for the first time – For the installation of the gas pipeline and additional Oxygen Outlet points in the buildings being brought under the Oxygen supply/Liquid Oxygen supply for the first time, the responsibility of installation of Gas Pipeline and Oxygen outlet points will be the responsibility of the L1 bidder for the Schedule C1 & C2, who will also use the L1 rates under Schedule B for installation of new Oxygen/Nitrous Manifolds and Vacuum System,

(iii) The submission of bids by various bidders shows that they understand that they may have to take unknown meter of copper pipeline extension and unknown number of new outlet points during the contract duration.

1.3. Duration of the project:

The bid price will be valid for a period of 5 years which shall be the contract period, with a mid-term review at the end of the 3rd year, leading to subsequent extension for two year period. The mid-term extension is subject to receipt of successful and problem free supply and maintenance certificate from MSVP/Director/Superintendent of the concerned institutions.

In exceptional cases, if non-satisfactory performance report is being observed and reported for any of the L1/L2 suppliers, the authorities of the concerned institution will inform the Department of Health and Family Welfare, Government of West Bengal and West Bengal Medical Services Corporation Ltd. for inviting of fresh LMO supply tenders for such institutions, to begin the next year.

1.4. Usage of Cylindere d Oxygen Gas for Emergency purposes:

10% of the Annual Consumption of Oxygen (beginning with the last year's consumption figures in Annexure-!) shall be maintained by the

L1 bidder of that particular MCH/institution. The size/volume of such cylinders will be decided by the MCH/hospital authorities based on their requirements. The rates for such cylindered Oxygen Gas supply will be as applicable through the CMS tendered rate for that year.

1.5. Smooth functioning of LMO Supply Operations – provision of 2 vessels by two suppliers:

(i) It has been observed in the past operations of gas supply that the suppliers tend to enjoy monopolistic practices in the supply of Oxygen Gas cylinders. This has often created health hazards for the patients and risk prone working conditions for the Health Authorities, if the supplies of life saving drug are threatened by the supplier at any stage or by corrupt practices like under –supply. To overcome any such situation, the individual MCH shall engage two supplier organisations for supply of LMO at the beginning of operations, and hence maintain tanks and gas vessels of both the suppliers. Institutions using less than 1500 m³ of LMO per month will require only a single vessel from a single supplier.

However, the L1 bidder shall have assured supply order of 75-80% of the current consumption of oxygen. The rest 10-15% Liquid Oxygen (since 10% Oxygen gas is provided through cylinders) can be offered by the MCH/Hospital authorities to the L2 bidder at the offer price of L1 bidder. In case of refusal by L2 bidder, the offer may be passed to the L3 bidder and so on.

Hence, the L1 bidder shall have a clear understanding that it may have to offer only 75-80% of the Liquid Oxygen and additional 10% cylindered oxygen ((at CMS approved tender rates for the same) to the MCH/Hospital, while 10-15% of the Liquid Oxygen may be supplied by the L2 or other bidders. The L1 bidder shall assist the MCH/Hospital authorities for the pipeline laying work.

Table No. 2

Approximate distribution of the proposed Annual LMO Supply in each institution		
Supply of LMO by L1 bidder	Supply of LMO by L2 bidder	Supply of Cylindered Oxygen for emergency requirements by L1 bidder
75% to 80%	15% to 10%	10%

(ii) L2 bidder will install his own tank and accessories and pipelines from the source tank to the common manifold as per L1 rates in concerned Schedules for various accessories, pipelines, outlets, manifolds, etc.

(iii) The pressure to be maintained at the point of usage, i.e. at the patient bed side should be as per the standard medical requirements.

(iv) The submission of bid by any bidder assumes clear understanding of the above provision, necessitated to avoid any monopolistic practices in essential lifesaving drug supply and their agreeing to accept such provision.

(v) The medical oxygen and nitrous oxide to be supplied should conform to I.P.2010. Test reports are to be supplied with every batch.

1.6. Site visit for assessment of existing oxygen supply infrastructure and need analysis:

The hospital authorities are being requested to provide assistance to the interested bidders in site visit and for assessment of existing oxygen supply infrastructure and need analysis for Tank Installation space, etc. to make an accurate bid.

Table No.3

Site Visit Programme for the interested bidders		
Schedule	Name of the institution	Date of visit
Schedule A1: Supply of Liquid Medical Oxygen along with allied activities to	Calcutta Medical College and Hospital	To be decided later
	NRS MCH	
	S.S.K.M. Hospital & B.I.N	
	R.G.Kar MCH	
	Dr. B.C.Roy PG Institute of Paediatric Sciences	
	Calcutta National MCH	
Chittaranjan Seva Sadan		
Schedule A2: Supply of Liquid Medical Oxygen along with allied activities to	Bankura Sammilani Medical MCH	
	Burdwan MCH	
	North Bengal MCH	
	Medinipur MCH	

The copies of layout of the MCH/hospitals are available for issue to the authorised representatives of Liquid Oxygen manufacturers and suppliers. The authority letter should be issued by such firms to a single individual on their company letter head.

1.7. Site Preparation

The open air site(s) for the installation of the Liquid Oxygen Tanks will be selected during the visit to the institutions as mentioned above. The Civil/Electrical Engineering work for the installation of LMO will be undertaken by the hospital authorities with the help of concerned PWD units as per the approved standards and drawings for this purpose.

The supplier of the Liquid Oxygen gas will be personally responsible to deploy resources during the construction work to ensure that the construction is as per the approved standards. They have also an option to undertake the construction through their own resources, as per the approved standards and design, and submit the cost estimate as per the PWD Schedule, to be paid by the Government. Such construction work, if undertaken by the LMO supplier agency, will be checked and verified by Govt. Engineer.

2. Source of funds

WBMSCL would apply the fund received from the TDE Cell of the Department of Health & Family Welfare, Government of West Bengal and various other sources for this purpose.

3. Fraud and Corruption

3.1. It is the policy of WBMSCL to require that bidders, suppliers and contractors and their sub-contractors under WBMSCL contracts, observe the highest standard of ethics during the procurement and execution of such contracts. (i) In pursuance of this policy, WBMSCL accepts the definition of the following terms as provided in Indian Penal Code: "Bribery", "Extortion", "Fraud", and "Collusion".

(ii) WBMSCL will reject a proposal to award a contract if it determines that a vendor recommended for award has engaged in corrupt practices in competing for the contract in question,

(iii) WBMSCL will declare a vendor ineligible, either indefinitely or for a definite period of time, to become a registered vendor under any programme of the Government of West Bengal, if at any time it is found that the vendor has engaged in corrupt practices in competing for or in executing a WBMSCL the contract,

(iv) WBMSCL will cancel or terminate a contract if it determines that a vendor has engaged in corrupt practices in competing for or in executing a WBMSCL the contract,

(v) WBMSCL will normally require a vendor to allow WBMSCL, or any person that WBMSCL may designate, to inspect or carry out audits of the vendor's accounting records and financial statements in connection with the contract.

3.2. Any vendor participating in WBMSCL's procurement activities, shall facilitate to WBMSCL personnel upon first request all documents, records and other matters required by WBMSCL to investigate the allegations of misconduct by either vendors or any other party to the procurement activities. The absence of such cooperation may be sufficient ground for debarment of the vendor from WBMSCL vendor roaster and may lead to suspension following review by WBMSCL Tender Review Committee.

3.3. As part of WBMSCL Whistle Blower policy, it is required that the vendors, their subsidiaries, agents, intermediaries and principals cooperate with WBMSCL Internal Audit Group as well as with other investigations authorised by WBMSCL or by the Government of West Bengal or the Union Government, as and when required. Such cooperation shall include, but not be limited to the following: access to all employees, representatives, agents and assignees of the vendor; as well as production of all documents requested, including financial records. Failure to fully cooperate with investigations will be considered sufficient grounds for allowing WBMSCL to repudiate and terminate the contract, and to debar and remove the supplier from WBMSCL's list of registered vendors.

3.4. The objective of this bid is to ensure supply of best quality services at the most competitive price. If at any stage of the bidding, including at the stage of financial evaluation, it appears that the tendered rate is artificially hiked or is much lower compared to the prevailing market price and available rates of similar or identical services with the Government or in market, WBMSCL reserves the right to cancel the bids.

4. **Eligible Bidder**

4.1 A Bidder, and all parties constituting the Bidder, may have the nationality of any country friendly to India,

4.2 Annual turnover for bidding for a particular group under Schedule "A" is given below. If the interested bidders are bidding for more than 1 schedule, then the Annual Turnover requirement will be sum aggregate of all the bids quoted for:

Table No.4.

Annual Turnover Requirement		
Schedule	Name of Institution	Annual Turnover(in crore)
A1	Calcutta Medical College and Hospital, NRS MCH, S.S.K.M. Hospital & B.I.N., R.G.Kar MCH, Dr. B.C.Roy PG Institute of Paediatric Sciences, Calcutta National MCH, and Chittaranjan Seva Sadan	28
A2	Bankura Sammilani Medical MCH, Burdwan MCH, North Bengal MCH and Medinipur MCH	15

Table No.5.

Annual Turnover Requirement		
Schedule	Name of Items	Annual Turnover(in crore)
B	New Oxygen/ Nitrous Oxide Manifolds & Vacuum System	2
C	Physical installation of liquid oxygen copper pipelines and new outlets in Departments/Units of MCHs and DHS, SDHs	2

4.3. Bidders opting for Schedule "A" must be manufacturers/suppliers of Liquid Medical Oxygen and must have supplied the LMO to Medical Institutions either themselves or through their agencies/vendors.

4.4. Intending bidders should have experience of supplying LMO directly or indirectly (through agencies) and installation & maintenance of medical gas pipeline and VIE at least at five such installations in the country, for which documentary proof has to be provided.

4.5. Intending bidders should be able to provide credit facility for at least 90 days, due to the quarterly payment system of the Government institutions.

4.6. Intending bidders should have GMP approved medical gas plant and valid drug license of its own or of its principal producer of Liquid Medical Oxygen.

4.7. Intending bidders having ISL 9001:2008 and ISO 14001 certified facility will be preferred.

4.8. In case of Schedules "B" and "C", the annual turnover of the intending bidders is Rs.2 crore for each Schedule.

4.9. In case of Schedule "B" and "C", all SSI or Public Sector Units in West Bengal will have to confirm to the Technical and Financial criteria. The State SSI Units and PSUs will, however, get a price preference in keeping with the G.O. 10500 F-dated 19.11.2004.

4.10. A Bidder shall not have a conflict of interest. All Bidders found to have conflict of interest shall be disqualified. Bidders may be considered to have a conflict of interest with one or more parties in this bidding process, if it submits more than one bid in this bidding process. Bidders will be considered to have common interest and hence having conflict of interest, if

(i) The Bidder, its Member or Associate (or any constituent thereof) and any other Bidder, its Member or any Associate (or any constituent thereof) have common controlling shareholders or other ownership interest: provided that this disqualification shall not apply in cases where the direct or indirect shareholding of a Bidder, its Member or an Associate thereof (or any shareholder thereof having a shareholding of more than 5% of the paid up and subscribed share capital of such Bidder, Member or Associate, as the case may be) in other Bidder, its Member or Associate is less than 5% of the subscribed and paid up equity share capital thereof: provided further that this disqualification shall not apply to any ownership by a bank, insurance company, pension fund or a public financial institution referred to in Section 4A of the Companies Act, 1956. For this purpose, indirect shareholding held through one or more intermediate persons shall be computed as follows:

(a) Where any intermediary is controlled by a person through management control or otherwise, the entire shareholding held by such controlled intermediary in any other person (the "Subject Person") shall be taken into account for computing the shareholding of such controlling person in the Subject Person: and

(b) Subject always to sub-clause (a) above, where a person does not exercise control over an intermediary, which has shareholding in the Subject Person, the

computation of indirect shareholding of such person in the Subject Person shall be undertaken on a proportionate basis: provided, however, that no such shareholding shall be reckoned under this sub-clause (b), if the shareholding of such person in the intermediary is less than 26% of the subscribed and paid up equity shareholding of such intermediary.

4.11. A constituent of such Bidder is also a constituent of another Bidder; or such Bidder, or any Associate thereof who receives or has received any direct or indirect subsidy, grant, concessional loan or subordinated debt from any other Bidder, or any Associate thereof or has provided any such subsidy, grant, concessional loan or subordinated debt to any other Bidder, its Member of any Association thereof; or such Bidder who has the same legal representative for purposes of this Application as any other Bidder; or such Bidder or any Associate thereof who has a relationship with another Bidder, or any Associate thereof, directly or through common third party/parties, that puts either or both of them in a position to have access to each other's information about, or to influence the application of either or each other; or such Bidder or any Associate thereof who has participated as a consultant to the Authority in the preparation of any documents, design or technical specifications of the project.

4.12. A Bidder shall be liable for disqualification if any legal, financial or technical advisor of the Authority in relation to the Project is engaged by the Bidder, its Member or any Associate thereof, as the case may be, in any manner for matters related to or incidental to the Project. For the avoidance of doubt, this disqualification shall not apply where such advisor was engaged by the Bidder, its Member or Associate in the past but its assignment expired or was terminated 6(six) months prior to the date of issue of this Tender. Nor will this disqualification apply where such advisor is engaged after a period of 3(three) years from the date of commercial operation of the Project.

4.13 Explanation: In case a Bidder is a JV or a Corporation, then the term Bidder as used in this clause 4 shall include each Member of such JV or Consortium.

4.14. A Bidder that is under a declaration of ineligibility by WBMSCL in accordance with instructions to Bidders Clause 3 at the date of contract award, shall be disqualified. Bidders shall not be eligible to submit a bid when at the time of submission of bid:

1. Suppliers are already suspended by WBMSCL; or

2. Suppliers are suspended by the Government of West Bengal or the Union Government or any other State Government or WBMSCL; or

3. Suppliers have been declared ineligible by the Government of West Bengal or the Union Government or any other State Government or WBMSCL.

JV: 4.15. Bids may be submitted by a Joint Venture (JV). In the case of a

(a) All parties shall be jointly and severally liable; and

(b) The JV shall nominate a Representative who shall have the authority to conduct all business:

- For and on behalf on any and all the parties of the JV during the bidding process; and
- In the event the JV is awarded the contract, during the contract execution.

Explanation:

In the event of a Joint Venture being selected for contract award, the Contract Agreement can only be in the name of the Joint Venture and all payments will be made in the name of JV. Any request, declaration or agreement by any or all member of JV to the contrary will not be accepted and the Award of Work will be cancelled or terminated as the case may be.

4.16. It may be noted that the consortium or JV will be allowed with maximum three members only and the change in membership of consortium or JV will not be allowed during the entire period of Contract.

5. **Period of validity of Bids, EMD**

Bid shall remain valid for a period of 120 days after the completion of the existing contracts of the Medical Oxygen Gas supply of the various institutions and their respective buildings. A bid valid for a shorter period shall be rejected by WBMSCL as non-responsive. In exceptional circumstance, prior to the expiration of the bid validity period, WBMSCL may request the bidders to extend the period of validity of their bids. The request and the responses shall be made in writing. In such case, the bid security (EMD) shall also be extended for a corresponding period.

Hence, the Earnest Money Deposit in the form of Bank Draft may require extension of its date by way of revalidation from the issuing

bank. In case of the EMD submitted in the form of Bank Guarantee, the date of validity of the bids and the date of end of the current contracts shall be taken into account by the bidders while submitting their EMD. The successful bidder will be eligible to withdraw the EMD after submission of the Performance Security in the form of Bank Guarantee. Performance Security will be valid for the entire project duration of 5 years, as per the details explained in Section 2, Clauses 2.2.h.

6. **Clarification of Bidding Documents**

6.1 A prospective Bidder requiring any clarification of the bidding Documents shall contact WBMSCL in writing at wbmisc.wbhealth@gmail.com or wbmisc@wbhealth.gov.in. WBMSCL will respond to all clarification, provided such request is received not later than three days before the deadline for submission of bids. WBMSCL shall publish copies of its response in its website including a description of the enquiry but without identifying its source.

6.2. Pre-Bid Meeting – A pre-bid meeting with the interested bidders will be held on --- April at – pm in the conference hall of WBMSCL. All doubts

should be informed by e-mail or sent by courier at least 48 hours before holding of the pre-bidding meeting. Discussion about the queries will be held at the pre-bid meeting and WBMSCL will inform the decisions on the communications received within valid period within 24 hours of the pre-bid meeting.

7. **Amendment of Bidding Documents**

7.1. At any time prior to the deadline for submission of bids, WBMSCL may amend the Bidding Documents by issuing amendment.

7.2. Any amendment issued shall be part of the Bidding Documents and shall be communicated to all by publishing the same in its website www.wbmisc.co.in.

7.3. To give prospective Bidders reasonable time in which to take an amendment into account in preparing their bids, WBMSCL may, at its discretion, extend the deadline for submission of bids.

Section 2: Bid Submission

Note: The interested bidders are requested to visit the sites of proposed constructions to check the actual position and for proposal planning and financial value estimation.

2.1. Preparation of Bids

Cost of Bidding

The Bidder shall bear all costs associated with the preparation and submission of its bid.

Language of Bid

The Bid, as well as all correspondence and documents relating to the bid exchanged by the Bidder and WBMSCL shall be written in English. Supporting documents and printed literature which are part of the Bid may be in another language, provided they are accompanied by an accurate translation of the relevant passages in English, authenticated by the manufacturer. For the purposes of interpretation of the Bid, such translation shall govern,

Alternative Bids

Alternative Bids will not be accepted. In the event of a supplier submitting more than one Bid, the following shall apply:

- (i) All Bids marked alternative Bids will be rejected and only the base Bid will be evaluated

All such Bids will be summarily rejected wherein a supplier in his capacity or in the form of member of JV or member consortium has submitted bids with one or more JVs or Consortiums.

Currencies of Bid

The Bidder shall quote in INR only.

2.2 Two Sealed Envelope Bid Process –

The bid will be submitted in two sealed envelopes as explained below:

1. Technical Bid Envelope – The Envelope should be clearly marked with the details of the Schedules for which it is submitted. There will be only one envelope for the Technical Bid for any number of bids under one of the groups below:

- Technical Bid for the supply of Liquid Medical Oxygen gas (Schedule A1 to A2)
- Technical Bid for the installation of new oxygen/nitrous oxide manifolds and vacuum systems (Schedule B1 to B11)
- Technical Bid for the installation of Liquid Oxygen copper pipelines and new Outlet points (Schedule C1 to C3).

It should consist of the following documents:

- (i) A detailed profile of the supplier, specific to the Schedule for which they are bidding
- (ii) Their financial statements for last three years
- (iii) Excise duty, Income Tax and VAT documents, Registration Documents
- (iv) Trade Licence/Drug Licence/GMP (as applicable for the producer or principal producer in case of supplier)
- (v) The past experience (and value) of projects undertaken in private and Government Healthcare Institutions for Medical Gas supply and Medical Gas Pipeline installation
- (vi) All pages of the tender document would be signed by an authorised representative of the bidder
- (vii) The technical bid should contain a non-refundable DD as per the table below as bid application fees payable to West Bengal Medical Services Corporation Ltd.

Table No. 6

Sl. No.	Schedule	Application Fees (Bid price)
1	A1 to A2	Rs. 10000 for each Schedule
2	B1 to B11	Rs. 5000 for the entire Schedule B
3	C1 to C3	Rs. 15000 for the entire Schedule C

- (viii) The Technical Bid will have a DD/Bank Guarantee as per the amounts given below as Earnest Money Deposit drawn in favour of West Bengal Medical Services Corporation Ltd and payable in Kolkata

Table No.7

Schedule	Sub-schedule	Earnest Money Deposit(Rs. In lakh)
"A" for supply of Liquid Medical Oxygen along with allied activities	A 1: Calcutta Medical College and Hospital, NRS MCH, S.S.K.M. Hospital & B.I.N., R.G.Kar MCH, Dr. B.C.Roy PG Institute of Paediatric Sciences, Calcutta National MCH, and Chittaranjan Seva Sadan	25
	A-2: Bankura Sammilani Medical MCH, Burdwan MCH, North Bengal MCH and Medinipur MCH	8

"B"	B 1-11: New Oxygen/ Nitrous Oxide Manifolds & Vacuum System	1
"C"	"C 1-3: Physical installation of liquid oxygen copper pipelines and new outlets in Departments/Units of MCHs and DHs, SDHs	3

2. The Performance Security to be submitted by the successful bidder for each of the Sub-Schedules under Schedule "A" and two other Schedules will be 10% of the quoted charges for the entire work for each such Schedules and Sub-Schedules and shall be retained till 60 days after completion of the project/work duration (Project Duration implies 3 years in case of non-extension beyond the third year, or otherwise 5th year, as applicable). The performance security will be payable as a DD or Bank Guarantee in favour of West Bengal Medical Services Corporation Ltd.

Table No.8

Sl. No.	Year	Performance Security retained
1	First	10%
2	Second	8%
3	Third	6%
4	Fourth	4%, if supply order is extended
5	Fifth	2%, if supply order is extended

This shall take into account the volume of the last year of consumption of the Oxygen Gas by the respective institution, along with the per M³ rate quoted by the bidders.

3. Financial Bid Envelopes –

- (i) The Financial Bids of the technically complaint firms alone will be opened
- (ii) Bidders may submit the Financial Bid in separate sealed envelopes for any number of schedules specified below, provided they meet the financial and other technical requirements:
 - Financial Bid for the supply of Liquid Medical Oxygen gas (Schedule A1 to A2)

- Financial Bid for the installation of New Oxygen/Nitrous Oxide Manifolds and Vacuum Systems (Schedule B1-11)
- Financial Bids for the supply of Copper pipelines and Outlet points (Schedule C1-3).

The Financial Envelope should be clearly marked with the details of the Schedule it has been submitted for as shown above.

- (iii) The selection of bidders will be on the lowest cost (L1) basis, taking into account the cost of the equipments, installations and consumables on one-time/recurring cost basis, as applicable.
- (iv) Formats for submission of Financial Bids:

The Financial Bid Envelope will have separate sealed envelopes for each of the Schedule given in the tables below:

A. Financial Bid for the supply of Liquid Medical Oxygen gas (Schedule A1 to A2)

Table No.9 Price Bid for LMO Supply

Schedule	Sub-Schedule	Liquid Oxygen supply, transportation, storage, maintenance rate and manpower charges Rs. ---- per M ³ of Liquid Oxygen, the price is inclusive of all the manpower, operation, transportation and vessel charges. Taxes extra as applicable
"A" for supply of Liquid Medical Oxygen along with allied activities	A 1: Calcutta Medical College and Hospital, NRS MCH, S.S.K.M. Hospital & B.I.N., R.G.Kar MCH, Dr. B.C.Roy PG Institute of Paediatric Sciences, Calcutta National MCH, and Chittaranjan Seva Sadan	Rs. – per M ³ of Liquid Oxygen
	A-2: Bankura Sammilani Medical MCH, Burdwan MCH, North Bengal MCH and Medinipur MCH	Rs. – per M ³ of Liquid Oxygen

B. Financial Bid for the installation of New Oxygen/Nitrous Oxide Manifolds and Vacuum Systems (Schedule B1 To B11)

Table No.10. Price Bid for New Manifolds and Vacuum Systems

Schedule	Description of the items	Rate (In Rs.), taxes as applicable extra
Schedule B-1	(O Manifold 2+2 with Control Panel) with all accessories	
Schedule B-2	(O Manifold 4+4 with Control Panel) with all accessories	
Schedule B-3	(O Manifold 8+8 with Control Panel) with all accessories	
Schedule B-4	(O Manifold 10+10 with Control Panel) with all accessories	
Schedule B-5	(N O Manifold 2+2 with Control Panel) with all accessories	
Schedule B-6	(N O Manifold 3+3 with Control Panel) with all accessories	
Schedule B-7	(N O Manifold 4+4 with Control Panel) with all accessories	
Schedule B-8	Vacuum with tank size 500L with dual pumps, filter and accessories	
Schedule B-9	Vacuum with tank size 1000L with dual pumps, filter and accessories	
Schedule B-10	Vacuum with tank size 2000L with dual pumps, filter and accessories	
Schedule B-11	Vacuum with tank size 3000L with dual pumps, filter and accessories	

The details of the pump capacity in 'cfm' (cubic foot per minute) for the various vacuum tanks are as follows:

Table No.11.

Pump capacity in CFM	Tank size in litre
50	500
50	1000
100	2000
150	3000

C. Financial Bid for the Copper Pipeline and Outlet Supply

Table No.12.

C-I. The rate of gas pipeline	Rs _____per meter of new copper pipeline, with all accessories, irrespective of the location/ department/ ward of the MCH and other Health Institutions.
C-II. The rate of new Oxygen points	Rs _____per new Oxygen Outlet point been introduced, with all accessories, irrespective of the location/ department/ ward of the MCH and other Health Institutions. The rate quoted will be for twin point outlets.
C-III. The rate for Digital Gas Flow meters	Rs _____per Digital Gas flow meters, providing mass and volume measurement, with installation and all accessories
Detailed Components in Section 3	Detailed Components in Section 3
<p>NOTE: Consumables- The bidder who will install new Pipelines and outlets will provide one time the necessary consumables like 600/1000 ml reusable collection jar in wards and 2000x2 ml reusable collection jar in OTs. The Hospital authority will provide further requirement of consumables. Accessories: The bidders will explicitly mention in the price bid the accessories provided by them with the outlet points and gas pipeline, to make the system fully operational, as per the requisite standards.</p>	

Single L-1 Rate calculation in `C-I & C-II' Schedules- The rate for the L-1 bidder will be calculated using the rates quoted for both the C-I and C-II schedules, for the supply and installation of Copper pipeline and outlet points (twin point outlet). There will be a single L-1 bidder identified for the C-I and C-II schedules as per the process detailed in a, b and c points below:

- a. **Rate of Copper Pipeline-** The rate of L1 bidder for Schedule "C" for the supply and installation of copper pipe line will be calculated based on the average of the frequently used diameters of pipe line, and for which rate has been called for in Schedule C-I.

The following pipes will be required:

42 mm outer diameter – Rate per Meter _____

28 mm outer diameter – Rate per Meter _____

22 mm outer diameter – Rate per Meter _____

15 mm outer diameter – Rate per Meter _____

12 mm outer diameter – Rate per Meter _____

Average Rate per Meter- Average of above mentioned Rates

b. The **rate of an outlet point** will be quoted inclusive of all components and accessories, such as **BPC flow meter with humidifier for Oxygen Outlet, Ward Vacuum Units for Vacuum point and other accessories, and relevant accessories for N₂O outlet points also**

B1. Rate of every Standard outlet point with Standard Accessories- Rs _____ per Oxygen outlet point

B2. Rate of every Standard outlet point with Standard Accessories- Rs _____ per N₂O outlet points

B3. Rate of every Standard outlet point with Standard Accessories- Rs _____ per Vacuum outlet point

c. **Formula for calculating L-1 Bidder for combined C-I and C-II schedule-** Since there is approximate 2 meters of pipe line requirement for every outlet point, **the L1 rate will be calculated for this schedule as the Rate for 2 meters of copper pipeline (averaged) + Rate of an Oxygen outlet point**

Section 3: Technical Specification

Specifications for installation of Centralized Medical Gas pipelines system including suction pipeline and allied works at various Medical Colleges and Hospitals and other healthcare institutions in West Bengal.

Note:

1. The interested bidders are requested to visit the sites of proposed construction, across the various MCHs to check the actual position and for accurate proposal planning.
2. They are requested to coordinate this visit with the MSVP/ Superintendent of the concerned MCHs and MR Bangur Hospital

Design and Structure of the Gas Pipeline System

Standard should comply as follows:

1. Standard should comply as follows:
 - a. The entire installation should be compliant to NFPA 99C or HTM 0201 or EN 737-3 standards
 - b. Terminal unit shall comply with ISO 9170-1
 - c. Gas-specific connector shall comply with the body of a NIST or DISS connector complying with ISO 5359.
 - d. Manifold and line pressure regulator shall comply with ISO 10524-2.
 - e. Prepare gauges shall comply with the requirement given in ISO 10524-2
2. All equipments, parts and accessories will be of approved quality meeting the relevant standards, as application.
3. Pipe to be certified by the international recognized body e.g. LLOYDS/ SGS, 3rd Party inspection.
4. All imported items will have a five year comprehensive warranty. The LMO supplier would be expected to verify the specifications of the products installed in Schedule B/C/D, as per the tender specifications and requirements.
5. The system required for the tender consists of the following items, as required in various schedules:
 1. Liquid oxygen supply (Schedule A)
 2. Oxygen manifold with fully automatic oxygen control panel (As may be required in the LMO expansion stage of various institutions- Schedule B)
 3. Nitrous oxide manifold (As may be required in the LMO expansion stage of various institutions- Schedule B)
 4. Vacuum supply system (As may be required in the LMO expansion stage of various institutions- Schedule B)

5. Distribution piping with Monitoring and alarm system and accessories (Schedule C)
6. Outlets and accessories (Schedule C)
7. Digital Flow meters (Schedule C)
8. Other accessories

The specifications for the same are given below:

Specification of various equipment and accessories required

1.0 Oxygen System

Oxygen System shall consists of the followings:-

- a) **Oxygen Manifold System with Automatic Control Panel**
- b) **Oxygen Emergency supply system**

1. a Oxygen Manifold

- i. The oxygen manifold shall be of size 2+2, 4+4, 8+8, 10+10 bulk cylinders, as may be applicable in individual hospital. Manifold will consist of two high pressure header bar assemblies to facilitate connection of primary and secondary cylinder supplies. Each header bar shall be provided with required numbers of cylinder pigtail connections to suit cylinder valves as per IS 3224 incorporating a check valve at the header connection. The high-pressure header bar shall be designed in such a manner that it can be extended to facilitate additional cylinder connections. Each header bar assembly shall be provided with a high-pressure shut-off valve.
- ii. The manifold should be so designed that it shall suit easy cylinder changing and positioning.
- iii. The cylinder should be placed with the help of cylinder brackets and fixing chains which should be zinc plated.
- iv. The manifold should be suitable to withstand a pressure of 140-150 Kg/cm². The manifold should be tested (hydraulically) at 3500 psig (pound-force per square inch gauge) pressure and to be supplied along with necessary test certificate.
- v. The Oxygen Manifold System shall be compatible to allow integration with the Liquid Oxygen Tank.

1.b Fully Automatic Oxygen Control Panel (Imported)

- a. The Oxygen Control Panel shall be of microprocessor based and preferably Digital Display Type. Pressure reduction shall be in two stages. Panel shall be integrated with pressure gauges inside panel on downstream of pressure regulator. Panel shall be fitted with standby line regulator. Line regulators shall have pressure relief mechanism for testing and servicing purpose.
- b. Panel shall be Fully Automatic and shall switch over from "Bank in Use" to 'Reserve Bank' without fluctuation in delivery line pressure. After the switch-over, the "Reserve Bank" shall become the "Bank in Use" and the "Bank in Use" shall become the "Reserve Bank". The Control Panel will be powered by a microprocessor. The unit shall be compact and enclosed in NEMA 1 enclosure.
- c. A Microprocessor circuit board assembly shall provide a relay output to give indication when or just before the manifold switches from one bank of cylinders to another. The switch over shall be mechanically controlled, not electrically.
- d. To avoid excess pressure being supplied to the distribution system, a pneumatically relief valve for the line regulator shall be incorporated. An intermediate pressure relief valve shall be installed between the high pressure regulators and the line delivery regulators.
 - e. The control panel incorporates six coloured LED's, three for the Left Bank and three for the Right Bank: Green for Bank in use, Amber for Bank ready and Red for Bank empty. Both the Left and Right bank pressures and the main line pressure should be displayed on the front door of the cabinet by means of LED's. All pressure transducers, micro switches, and display LED's shall be pre-wired to an internal microprocessor circuit board.
 - f. All components inside the Control Panel like Pressure Regulators, piping and control switching equipment shall be cleaned for Oxygen Service and installed inside the cabinet to minimize tampering with the regulators or switch settings.
 - g. The Control Panel should be made to provide Heavy Duty with a Flow Capacity of over 1000 lpm (litre per minute) at 60 psig.

1. c Emergency Oxygen System:

It will have emergency arrangement of one set of three-cylinder configuration with Copper tail pipes, Non Return Valves & high flow regulator with pressure gauges for Cylinder & line pressure and safety valve. Pressure regulator shall be detachable from the manifold.

2.0 Nitrous-oxide system

Nitrous Oxide system shall consist of the following:

- a. Nitrous Oxide main manifolds supply system,
- b. Fully automated control panel

- c. Emergency supply system

2. a Nitrous Oxide Manifold

- i. The Nitrous Oxide manifold shall be of size 3+3 bulk cylinders. Manifold shall consist of two high-pressure header bar assemblies to facilitate connection of primary and secondary cylinder supplies. Each header bar shall be provided with 10 numbers of cylinder pigtail connections to suit cylinder valves as per IS 3224 incorporating a check valve at the header connection. The high-pressure header bar shall be designed in such a manner that it can be extended to facilitate additional cylinder connections. Each header bar assembly shall be provided with a high-pressure shut-off valve.
- ii. The manifold should be so designed that it shall suit easy cylinder changing and positioning.
- iii. The cylinder should be placed with the help of cylinder brackets and fixing chains which should be zinc plated.
- iv. The manifold should be suitable to withstand a pressure of 140-150 Kg/cm². The manifold should be tested (hydraulically) at 3500 psig pressure and to be supplied along with necessary test certificate.

2.b Fully Automatic Nitrous Oxide Control Panel (Imported)

- i. The Nitrous Oxide Control Panel shall be of microprocessor based and preferably Digital Display Type. Pressure reduction shall be in two stages. Panel shall be integrated with pressure gauges inside panel on downstream of pressure regulator. Panel shall be fitted with standby line regulator. Line regulators shall have pressure relief mechanism for testing and servicing purpose.
- ii. Panel shall be Fully Automatic and shall switch over from "Bank in Use" to 'Reserve Bank' without fluctuation in delivery line pressure and without the need of external electrical power. After the switch-over, the "Reserve Bank" shall become the "Bank in Use" and the "Bank in Use" shall become the "Reserve Bank". The Control Panel will be powered by a microprocessor. The unit shall be compact and enclosed in NEMA 1 enclosure.
- iii. A Microprocessor circuit board assembly shall provide a relay output to give indication when or just before the manifold switches from one bank of cylinders to another. The switch over shall be mechanically controlled, not electrically.
- iv. To avoid excess pressure being supplied to the distribution system, a pneumatically relief valve for the line regulator shall be incorporated. An intermediate pressure relief valve shall be installed between the high-pressure regulators and the line delivery regulators.
- v. The control panel incorporates six coloured LED's, three for the Left Bank and three for the Right Bank: Green for Bank in use, Amber for Bank ready and Red for Bank empty. Both the Left and Right bank pressures and the main line pressure should be displayed on the front door of the cabinet by means of LED's. All pressure transducers,

micro switches, and display LED's shall be pre-wired to an internal microprocessor circuit board.

vi. All components inside the Control Panel like Pressure Regulators, piping and control switching equipment shall be cleaned for Oxygen Service and installed inside the cabinet to minimize tampering with the regulators or switch settings.

vii. The Control Panel should be made to provide Heavy Duty with a Flow Capacity of over 1000 lpm at 60 psig.

2.c Emergency Nitrous Oxide System:

Emergency system shall have arrangement of one set of Single Cylinder configuration with Copper tail pipes, Non Return Valves & high flow regulator with pressure gauges for cylinder & line pressure and safety valve. Pressure regulator shall be detachable from the manifold.

3.0 Vacuum (suction) System

i. Vacuum system shall be stack mounted 150 cfm capacity/ appropriate capacity suited for the tank size. The appropriate capacity in CFM for the various tank sizes is given below for quoting the rates in Schedule B

Pump capacity in CFM	Tank size
50	500
50	1000
100	2000
150	3000

ii. The package shall include lubricated rotary vane vacuum pumps and associated equipment, one vertical ASME tank and one control panel. The only field connections required would be system intake, exhaust and power connection at the control panel. All components shall be completely pre-piped and pre-wired to single-point service connections. All interconnecting piping and wiring shall be completed and operationally tested at the site of manufacturer. Provide liquid tight conduit, fittings and junction boxes for all control and power wiring.

iii. The medical vacuum pumps shall be of the rotary vane air-cooled design with integral, fully re-circulating oil supply with sight gauge to indicate oil level. The oil separation system shall be integral and shall consist of no less than four stages of internally installed oil and smoke eliminators. This system shall be capable of removing 99.9% of oil

and smoke particles from the exhaust. Each pump shall include a built-in anti-suck-back valve mounted at the pump inlet; and each pump shall be equipped with three non-asbestos vanes, each having a minimum life of 40,000 to 40,000 hours.

iv. Water vapour condensation in the cylinder shall be prevented by means of an automatic gas ballast valve. A non-return valve to prevent oil migration upon shutdown. Each pump should have a 5-micron inlet filter. Each reservoir shall be fitted with shutoff valves, a drain valve, and a vacuum gauge.

v. Each vacuum pump shall be driven by a suitable HP motor.

vi. The system shall include the following accessories for each pump: inlet check valve, inlet isolation valve, vacuum control switch, oil temperature gauge, thermal malfunction switch and vacuum control switch. Provide flexible connectors on inlet and exhaust of each pump exhaust tee with union, drip-leg with cock valve as well as copper tubing with shut-off cock for gauge and vacuum switches. The system shall include a 500 litres/ 1000 litres/ 2000 litres/ 3000 litres vacuum storage tank of ASME construction. The tank shall be rated for full vacuum service and shall be equipped with a valved by-pass, vacuum gauge and manual tank drain. The inside of the tank shall be coated for rust protection with a two component coating which provides a hard, durable lining.

vii. Provide vibration mounting per as NFPA latest recommendations.

viii. The system shall include a UL listed control panel in a NEMA 12 enclosure with the following accessories for each pump:

Externally operable fusible disconnect with door interlock, control circuit transformer with fused primary and secondary coils, H-O-A switch, magnetic starter with 3 leg overload protection, hour meter, motor running light and minimum run timer to prevent short cycle operation.

ix. Provide the panel with a plug-in type programmable controller with removable terminals to allow quick and easy replacement in the field. The system should be designed to function even if the programmable controller fails. If one of the pumps is out of service the system control shall omit the pump from the alternating cycle, automatically alternating between the remaining pumps only. The system shall revert to normal alternation automatically when the condition is corrected. In addition to standard automatic alternation, the system shall be equipped with forced time alternation in the event that the pump is unable to satisfy the demand in 30 minutes. The system shall be equipped with a flashing light pump failure alarm/shutdown at any of the following conditions: motor overload tripped, main disconnect is off, blown fuse, control transformer failure, starter coil failure, H-O-A is off.

x. Provide audible and visual local alarm (complete with indicating lights and individual sets of auxiliary contacts wired to the terminal strip for remote alarm indication) for the following: vacuum pump thermal malfunction and reserve vacuum pump in use. Provide manual reset for thermal malfunction shut-down. All control and alarm functions shall remain energized while any vacuum pump in the system remains electrically on-line. The lag vacuum pump shall be able to start automatically if the lead vacuum pump fails to operate.

4.0 Specification of Copper pipe:

Copper Pipe Specifications for connection between the LMO vessel and Manifold Room

Outer Dia.	Thickness
------------	-----------

1. 54mm	1.2mm
---------	-------

2. 76mm	1.5mm
---------	-------

The following pipes will be required for header pipeline and dropdown pipeline:

Outer Dia.	Thickness
------------	-----------

1. 12mm	0.7mm
---------	-------

2. 15mm	0.9mm
---------	-------

3. 22mm	0.9mm
---------	-------

4. 28mm	0.9mm
---------	-------

5. 42mm	1.2mm
---------	-------

Specifications:-

Materials- Copper pipes should be solid drawn seamless deoxidized non arsenical, half hard tempered and degreased and delivered capped at both ends. Copper pipe should confirm to BS: 6017, 1981, and manufactured as per BS: 2871, 1971 part- I

- i. Isolation valves will be non-lubricated ball type, suitable for oxygen service.

- ii. All valves should be pneumatically tested for twice the working pressure and factory degreased for medical gas service before supply.
- iii. Copper fitting shall be made of copper and suitable for a steam working pressure of 17 bar and specially made for brazed socket type connection. All copper fittings will conform to BS 864.
- iv. Pipes should be accompanied with manufacturer's test certificates for the physical properties and chemical composition.
- v. The supply of pipes shall be further substantiated with inspection certificates from third party inspectors like LLOYDS.

Installation and testing

- i. Pipe fixing clamps should be of non-ferrous or non-deteriorating plastic suitable for diameter of the pipe.
- ii. All pipe joints should be made using flux less brazing method.
- iii. All joints should be made of copper to copper and brazed by silver brazing filler material without flux.
- iv. Adequate support to be provided while laying pipelines. All pipe clamps should be non-reactive to copper.
- v. All piping system shall be tested in the presence of the site engineer or two authorized representative, to be tested at a pressure equal to 1.5 times of the working pressure or 150 psig whichever is higher for a period of not less than 24 hours.

Painting

- i. All exposed pipes should be painted with 2 coats of synthetic enamel paint compatible with existing colour coding.

5.0 Alarm System

- i. The master and area alarms as per required locations.
- ii. Alarm shall be microprocessor based with individual microprocessors on each area display and sensor board. The sensors shall be capable of local or remote mounting. Each area display module/sensor unit shall be gas specific. With an error message display for an incorrect connection.
- iii. The alarms shall be field expandable with the addition of extra modules. Upto six services can be accommodated per standard box.
- iv. Each specific service shall be provided with an LED digital read out comprising of 0-250 psi for positive pressure and 0-30 inch Hg for vacuum. The digital readout shall provide a constant indication of each service being measured. A bar graph trend indicator shall be provided for each service indicating a green "NORMAL", yellow "CAUTION" and a red "HIGH" or "LOW" alarm condition. Under normal operation the bar graph display shall move up and down in the green range depending on service usage. If an alarm occurs, the "RED" alarm light will flash and the audible alarm will sound. Pushing the "ALARM SILENCE" button will cancel the audible alarm but the unit will remain in the alarm condition until the problem is rectified.
- v. The default set points shall be +/- 20% variation from normal condition.
- vi. In the calibration mode the following parameters shall be field adjustable:
 - a. High/Low set points
 - b. Imperial/Metric Units
 - c. Repeat alarm enable/disable
- vii. Set points shall be adjustable by two on board push buttons.
- viii. In addition "PUSH TO TEST" & "ALARM SILENCE" buttons shall be easily accessible to operate and test the unit.
- ix. Combination master/area alarms shall have no moving parts and shall require no maintenance after initial installation.

6.0 Specification of High Pressure A/S Tubing's

- i. High pressure tube for O²
- ii. High pressure Tube for vacuum

- iii. LP Tubing

7.0 Specification of Outlets:

i) Double lock outlets

Specifications:-

- i. Outlets should be of quick connecting and wall mounted type.
- ii. Outlets manufactured with 165 mm length copper inlet pipe stub which is silver brazed to outlet body.
- iii. Body of one piece of brass construction and outlet shall be equipped with a primary and secondary and the secondary check valve shall be rated at minimum 200 psi. In the event the primary check valve is removed for maintenance there should not be any leakage (on-line maintenance should be possible w/o disrupting the functioning of other outlets). Outlet bodies shall be gas specific by indexing each gas service to a gas specific dual pin indexing arrangement on the respective identification module.
- iv. A large colour-coded front plate shall be used for ease of gas identification and aesthetic appeal.
- v. With the back rough in mounted the outlet shall adjust up to 25 mm variation in wall thickness.
- vi. The latch valve assembly should accept only corresponding gas specific adaptors.
- vii. All outlets shall be cleared and degreased for medical gas service, factory assembled and tested.

ii) BPC flow meter with humidifier

Specifications:-

- i. Back pressure compensated flow meter with accurate gas flow measurement.
- ii. Control within range of 0-15 litres per minute.
- iii. Made of brass chrome plated materials.
- iv. Humidifier bottle should be made of poly carbonate material and should be reusable and unbreakable and must be auto-clavable at least at 121° centigrade.
- v. Inlet filter of stainless steel wire mesh to prevent foreign particle entry.

iii) Ward Vacuum Units

Specifications:-

Unit should consist of

- i. A regulator
- ii. A 600 ml reusable collection jar made of unbreakable polycarbonate and auto clavable.
- iii. Wall bracket for mounting jar assembly on wall.
- iv. Have a Vacuum gauge which indicates suction supplied by regulator.
- v. Safety trap will be provided inside the jar to safeguard the regulator from
- vi. Overflowing.

iv) Isolation Ball Valve, of appropriate size, with brass adapter at every 25-50 outlets and in front of each facility

Specifications:- Lever operated, quarter turn valve with brass body and chrome plated brass ball.

v) Line pressure alarm- One for each facility, just outside the facility: Should be customizable visible and audible alarm at VIE installation facility and manifold room

8.0 Liquid oxygen supply system

Liquid Oxygen: the Vacuum Insulated Evaporator or VIE

Liquid oxygen will be primary source of oxygen supply and oxygen manifold shall be secondary and reserve source. It should automatically shift to secondary source in case of fault of primary. The unit will have capacity of 990 liters/ 2600 liters/ 5000 liters of two such tanks/ vessels with provision for further up gradation. Unit should be of latest version internationally. The unit should be fitted with standard

accessories as minimum and should have undergone standard inspection requirement. A certificate to that effect has to be submitted.

Specifications:

Liquid medical oxygen suppliers should ensure that the vessel installation is:

- * Stored upright, preferably in an open and well-ventilated area.

- * The area should be protected using fencing as per the PESO (Petroleum and Explosives Safety Organisation) requirements.

- * Kept dry and clean and not subjected to extremes of heat and away from stocks of combustible material.

- * Warning notices prohibiting smoking and naked lights must be posted clearly in the cylinder storage area and the emergency services should be advised of the location of the cylinder stores and bulk stores.

- * Liquid medical oxygen bulk storage tanks should be sited at least 5.5 meters from boilers and other sources of naked lights, fuel stores, paint stores and other volatile flammable materials.

9.0 Civil work for Liquid oxygen supply system and Installation of Vacuum system

Space as required for installation of Oxygen Supply System has been identified by the MCH s concerned and the design and infrastructure proposal should comply with all regular standards.

The installation of LMO tank with all its accessories including the Alarm system will be complaint with the PESO (Petroleum and Explosives Safety Organization) standard and NFPA (National Fire Protection Association) standard 50.

Note: The interested bidders are requested to visit the site of proposed construction to check the actual position and for accurate proposal planning.

Annexure 1: Status of Current Oxygen Supply Contracts and current oxygen consumption

TABLE 5					
1.	2.	3.	4.	5.	6.
Sl. No.	Name of the Institution	Current Oxygen Supplier Agency	Date of current Commissioning	Date of expiry of the present Contract (Expiry date of current extension)	Current annual consumption of Oxygen in M ³
1.	Calcutta Medical College & Hospital	BOC	April, 2007 onwards for various hospital buildings	March, 2012 (April 2012) 1. Eden Building (Contract End 31.03.2012)- 66 points 2. MCH Building (Contract End 31.03.2012)- 22 points 3. Green Building (Contract End 31.10.2012)- 102 points 4. Casualty Building (Contract End 13.04.2012)- 43 points 5. David Hair Building (Contract End 30.06.2014)- 43 points 6. Ezra Building (Contract End 09.04.2014)- 29 points	263988 M ³
2.	NRS Medical College & Hospital	BOC	December, 2006 onwards for various hospital buildings	1. February, 2012 (April 2012)- For the Centenary Building – 160 points Date of Commissioning January 2013 for 2. UNB Building- 147 points 3. Fraser Building- 73 points	189518 M ³
3.	S.S.K.M. Hospital & B.I.N.	BOC	May, 2007 onwards	Date of Signing of Agreement- May, 2012	Over 300000 M ³

			for various hospital buildings	<p>September 2012 (Date of Commissioning)</p> <ol style="list-style-type: none"> 1. Ronald Ross Building – 28 points 2. Cardiology Building- 61 points 3. Urology Building- 63 points 4. Gastroentrology Building- 29 points 5. Cardiothoracid and Eye Building- 28 points <p>November 2012</p> <p>RCU Building- 16 points</p> <ol style="list-style-type: none"> 2. Woodburn Building- 62 points 3. BIN Old and New Building <p>December 2012</p> <ol style="list-style-type: none"> 1. Obstetrics and Gynaecology Building- 36 points <p>April 2013</p> <ol style="list-style-type: none"> 1. Main Building- 161 points 	
4.	R. G. Kar Medical College & Hospital	SYTCO (PRAXAIR)	September, 2006 onwards for various hospital buildings	<p>February, 2012 (April 2012)</p> <ol style="list-style-type: none"> 1. Cardiology & Emergency Buildings- 398 points 2. Surgical and Gynae Building- 168 points 3. Oncology Building- 34 points <p>337 points of the completed contract covered for LMO installation under this tender.</p> <p>New 314 points under live contract excluded from LMO</p>	332099 M ³
5.	Bankura Sammilani Medical College & Hospital	BOC	January, 2007 onwards for various hospital	<p>February, 2012 (April 2012)</p> <ol style="list-style-type: none"> 1. Gobinda Nagar Main Building- 59 points 2. Gynae Building- 65 points 3. Lokepur Building- 39 	54000 M ³

			buildings	points	
6.	Burdwan Medical College & Hospital	SYTCO (PRAXIA R)	September, 2007 onwards for various hospital buildings	September, 2012 Main Building- 159 points 2 nd Manifold- 157 points	117235 M ³
7.	North Bengal Medical College & Hospital	BOC	March, 2007 onwards for various hospital buildings	March, 2012 (April 2012) Main Building Gynaecology Building Emergency Building Total 214 points (Contracts End between 15.04.2012- September 2012 for the above buildings)	52700 M ³
8.	Medinipur Medical College & Hospital	SYTCO (PRAXIA R)	June, 2008	June, 2013 Main Building- 164 points Emergency- 6 points	45150 M ³ (in 2010 – 11)
9.	Dr. B. C. Roy Post Graduate Institute of Pediatric Sciences	SYTCO (PRAXIA R)	December, 2006	February, 2012 (April 2012) Old Building- 115 points Annexe Building- 65 points	7466 M ³ (per month)
10.	Calcutta National Medical College & Hospital	SYTCO (PRAXIA R) BOC	September, 2007 onwards for various hospital buildings	February, 2013 Date of Commissioning 1. RRM Building- Sept 2012 (131 points) 2. Gynae Building- October 2012 (71 points) 3. Chest Building- October 2012 (22 points) 4. Surgical Building- January 2013 (84 points)	300074 M ³

	Name of the Institution seeking New LMO Supply System	Expected annual consumption of Oxygen in M ³
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REMARKS: It may be seen that in some cases there is a date difference between the date of current contract closure due to difference in date of signing of the agreements (between DoHFW & suppliers) and the commissioning of the piped oxygen supply. In such cases, the date of commissioning will be taken as the date for calculation of closure of existing contract. Hence, the selected bidders in the present bid shall make the necessary physical infrastructure creation accordingly in the time available in between.

Annexure 3: Bank Guarantee Format for Bid Security/Earnest Money Deposit

EMD in the form of Bank Guarantee

Company Name-----

Address-----

In consideration of West Bengal Medical Services Corporation Ltd, having its registered office at Swastha Bhawan, Institute Building, 1st Floor, GN-29, Salt Lake City, Sector-V, Kolkata-700091 (hereinafter called "WBMSCL" which expression shall unless repugnant to the subject or context include its successors and assigns) having issued Notice Tender No. ----- Dated----- and M/S ----- having its registered office at ----- (hereinafter called the "Tenderer") is to participate in the said Tender for supply of Liquid Medical Oxygen Gas through Pipeline (Table 9)/new manifold and vacuum system (Table 10)/copper pipeline and outlet supply (Table 12) in ----- Govt. Hospital Building at -----, whereas WBMSCL, as a special case, has agreed to accept irrevocable and unconditional Bid Security/Earnest Money Deposit(EMD) for an amount of Rs.----- (Rupees-----) valid up to 60 days from the date of award of contract in lieu of cash deposit of Rs.----- (Rupees-----) required to be made by the Tenderer, as a

condition precedent for participation in the said tender. We, the ----- bank, having registered office at ----- and branch at -----(hereinafter called the "Bank"), do hereby unconditionally and irrevocably undertake to pay to WBMSCL immediately on demand in writing and without demur/protest any amount but not exceeding Rs. -----(Rupees -----). Any such demand made by WBMSCL shall be conclusive and binding on us irrespective of any dispute or differences that may be raised by the Tenderer. Any change in constitution of the Tenderer or the Bank shall not discharge our liability under this Bank Guarantee.

We, the -----Bank, lastly undertake not to revoke this Guarantee during its currency without the prior consent of WBMSCL in writing and this guarantee shall remain valid up to ----- . Unless a claim is made within three months from the date of expiry, i.e. -----(three months after the date of expiry of Bank Guarantee), we shall be relieved of our liability under this guarantee thereafter.

Notwithstanding anything contained herein:

1. Our liability under this Bank Guarantee shall not exceed Rs.----- (Rupees-----),
2. This Bank Guarantee shall be valid up to ----- and a claim period of three months, i.e. up to-----,
3. We are liable to pay the guaranteed amount or any part thereof under this Bank Guarantee if and only if you serve upon us a written claim or demand on or before-----.

[Signature (S)]

Annexure 3: Bank Guarantee Format for Performance Security

PERFORMANCE SECURITY (BANK GUARANTEE) FORM

[Bank's Name and Address of Issuing Branch or Office]

Beneficiary: West Bengal Medical Services Corporation Limited (hereinafter called "WBMSCL"), Swasthya Bhawan Complex, GN—29/5, Salt Lake, Sector-V, Kolkata-700091

Date: -----

PERFORMANCE GUARANTEE NO.:-----

1. We have been informed that [name of the Contractor](hereinafter called "the Contractor") has submitted to you its Contract dated (hereinafter called "the Contract") for the execution of ----- under Invitation to Bid NO. WBMSCL/.....("the ITB").
2. Furthermore, we understand that, according to your conditions, Contracts must be supported by a Bank Guarantee.
3. At the request of the Contractor, we [name of the Bank] hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of Rs.------(Rupees -----) upon receipt by us of your first demand in writing accompanied by a written statement stating that the Contractor is

in breach of its obligation(s) under the Contract conditions or in the tender requirements, because the Contractor:

- a. Has withdrawn its Contract during the period of Contract validity specified by the Contractor in the Agreement, or
- b. Having been notified of the acceptance of its Contract by WBMSCL during the period of Contract validity-
 - i. Fails or refuses to execute the Agreement, or
 - ii. As compensation for any failure on the part of “the Contractor” to complete its obligations under the Contract or in the tender requirements.

Notwithstanding anything contained herein

1. Our liability under this Bank Guarantee shall not exceed-----
2. This Bank Guarantee shall be valid upto-----
3. We (name of Bank) are liable to pay the guaranteed amount or any part thereof under this bank guarantee if , and only, if you serve us a written claim or demand on or before-----

[Signature(s)]