



TENDER DOCUMENT

DESIGN, SUPPLY, INSTALLATION AND COMMISSIONING OF:

Medical Air- and Medical Oxygen Reticulation and

SUPPLY, INSTALLATION AND COMMISSIONING OF:

30t Liquid Oxygen Vacuum Insulated Evaporator (VIE)

AT THE

University Teaching Hospital Adult- and Woman and Newborn Hospitals, Lusaka, Zambia

(Hereafter called **UTH Medical Air and Oxygen Project**)

DIRECT CONTRACT WITH

Right to Care NPC

(hereinafter referred to as "**RtC**")

ISSUE DATE: 21 November 2024

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Errors and Omissions Accepted

1 PREAMBLE

The University Teaching Hospitals (UTH) are National Referral Public Hospitals operated by the Zambian Ministry of Health (ZMoH). The hospital is located in Lusaka, Zambia.

Right to Care (RtC) is a Non-Governmental Organisation (NGO) based in Centurion, South Africa that is the implementation partner of USAID for healthcare aid in Southern Africa.

RtC, together with the Zambian Ministry of Health, has determined that the extension of the existing medical air and oxygen reticulation will significantly improve the healthcare delivery capability of the abovementioned hospital.

This document provides the technical and commercial specification for the design, supply, installation, and commissioning of such reticulation.

2 SCOPE OF WORK

This tender makes provision for a turnkey design, supply, installation and commissioning of the following:

- 1) Extension of the existing piped Medical Air (MA) installation of the Surgical Ward Building with the addition of 45 MA Terminal Units (TUs) in the Adult Hospital.
- 2) Design, Supply, Installation and Commissioning of a new piped Oxygen installation with 561 Oxygen TUs in the Adult Hospital and 88 Oxygen TUs in the Woman and Newborn Hospital.
- 3) Removing the existing piped Oxygen installation in the Adult Hospital.
- 4) Supply, Delivery, Installation, Commissioning and Operation of a 30t Liquid Oxygen (LOX) Vacuum Insulated Evaporator (VIE) tank with all pressure control- and safety equipment to supply Gaseous Medical Grade Oxygen at a minimum flow rate of 0 Liters per minute (L/min) and a maximum of 9 000 L/Min at a pressure of 10 Bar (1MPa) on a continuous duty cycle. This includes the supply and delivery into the VIE of 30 metric ton of Medical Grade Liquid Oxygen (99.5 v/v O₂) compliant to SANS 532:2023 or equivalent as a first fill. The delivery shall be accompanied by a certificate of oxygen purity i.e. percentage oxygen volume/volume.
- 5) Installation of 4 (four) new back-up MA cylinder manifold banks with automatic change-over manifold that has pressure control station with two manifold Pressure Reducing Valves (PRVs) (one per bank) and two (2) line PRVs, including all valves, safeties, a primary source connection point and all alarm contact points.
- 6) Installation of 3 (three) new back-up Oxygen cylinder manifold banks with automatic change-over manifold that has pressure control station with two manifold Pressure Reducing Valves (PRVs) (one per bank) and two (2) line PRVs, including all valves, safeties, a primary source connection point and all alarm contact points.
- 7) Installation of all manifold banks will include the preparation and painting of the entire manifold room and all statutory signage and physical security.
- 8) Upgrading of the existing MA plant filtration system to provide MA at a flowrate of 2800L/min and in compliance with ISO8573-1.
- 9) Supply and installation of a central- and local medical gas alarm system for MA and oxygen alarms expandable to Nitrous Oxide and Vacuum. Integration of the Vacuum alarm where currently available.

- 10) Commissioning and certification of the entire MA and Oxygen reticulation of the Adult and Woman and Newborn hospitals.
- 11) Supply of OEM Manuals including the Operational Manual, Design and As-Build drawings of the entire installation.
- 12) Allowance for temporary medical gas supply to all effected sections when the change-over banks are serviced and the central reticulation is connected.

....according to the "Concept Design – University Teaching Hospitals (Adult- and Woman and Newborn Hospitals Version for Tender" dated 8 September 2024 at the UTH, Lusaka, Zambia.

The bidder shall allow in his bid price for all design, material, labour, supervision, transport, tests and all other items necessary to complete the contract in its entirety.

In the event where the supply and/or installation of any item, material or equipment do not form part of this Contract, it will be specifically indicated as such in its specification and/or the accompanying drawings.

3 EXCLUSIONS

The following is hereby excluded:

- 1) The VIE civil site preparation works.
- 2) All electrical works. The three-phase supply for the tanker pump and lighting as well as alarm electrical supplies will be provided to specification by others.
- 3) The reticulation of the new Surgical Ward- and the new Accident and Emergency Buildings.

4 TYPE OF CONTRACT

This contract will be a direct contract to be executed by the successful tenderer who will be the "Contractor", as referred to in this document and RtC who will be the "Client". The standard RtC contractor application/approval process will apply should the successful bidder not be a current RtC vendor.

The appointment will be according to the contract type i.e. International Federation of Consulting Engineers (FIDIC) Minor Works contract.

RtC will act as the Client, Engineer and Principal Agent.

The Principal Agent shall make provision for and purchase of the above documents.

5 TENDER ELIGIBILITY

The tender will be advertised in Zambia however, this is an open tender to competent contractors.

6 TENDER ADJUDICATION

The tender will be adjudicated by RtC according to their procurement policy. A tender adjudication committee will be appointed that consists of engineering-, finance-, legal- and procurement specialists. The adjudication committee's recommendation will be tested against their procurement policy and the Head of Procurement will issue a final appointment instruction to the Principal Agent.

The tender will be awarded based on completeness of document submission, proving competency and price according to the following formula:

Should any of the following not be included in the contiguous pdf document pack, the bid shall be marked as "technically incomplete"

1. A registered company
2. Good standing with their local revenue service
3. Bank stamped account confirmation letter
4. Completed supplier registration form together with documents on section B of the form

Description	Percentage	Scoring
Competency	10% (ten)	Each previous medical gas project =2% (two percent) (max 10% (ten percent)), Table not completed = 0% (zero percent)
Design	40% (forty)	Score of a panel of engineers for design completeness based on engineering submission i.e. drawings, design report, calculations. Best = 40% (Forty), Worst = 0% and the rest ranked and awarded points pro-rata according to rank.
Price	50% (fifty)	Prices scored according to the formula approved by South African National Treasury ¹ according to the formula: $Price\ Score = 50 * \left(1 - \frac{Bid\ Price - Lowest\ Price}{Lowest\ Price} \right)$
TOTAL	100% (one hundred percent)	

7 REQUIRED BIDDER COMPETANCY

Only submissions from companies with proof of the following will be considered. The contractor will be:

- 1) A registered company, with attached company registration document bearing proof of company name and registered address.
- 2) Be in good standing with the local revenue service.
- 3) Completed supplier registration form.
- 4) Bank stamped account confirmation letter

8 CONTRACT PRICE, ADJUSTMENT AND VARIATION ORDERS

This will be a fixed price contract based on the pricing schedule.

The contractor may request a Variation Order (VO) of up to 10% (ten percent) of the works value for eventualities outside the control of the contractor. VOs shall be approved at the sole discretion of the Principal Agent.

The tenderer shall make provision in his tender base price for possible fluctuations in all other costs.

A 10% (ten percent) retention shall be applicable according to the terms of the FIDIC standard agreement.

9 EXTRA PAYMENTS

Tenderers must acquaint themselves fully with the local conditions and the requirements of this specification. RtC will not consider any later claims by the successful tenderer for extra payment arising out of underestimating any of the requirements.

The contractor shall do their own measurements when ordering materials.

10 RATE OF EXCHANGE

This tender will not be subject to fluctuations in the rate of exchange. The tender will be priced in Zambian Kwacha.

¹ Implementation Guide: Preferential Procurement Regulations, 2022, National Treasury Department of South Africa

11 PROGRAMME AND COMPLETION

The period for completion of the work will be agreed on between the Principal Agent and the Contractor taking the operational requirements of the facility into account. The Principal Agent shall indicate on the FIDIC contract the days required to complete the project.

The tenderer shall state the time, in days, required for completion of the contract in the Price Schedule and such time will be used as contractual completion time of the project.

The contractor will not be penalised for late completion due to restriction in access due to patient needs.

The contractor will be required to submit a works program within 21 days of being awarded the tender.

12 METHOD STATEMENT AND DRAWINGS

The contractor will be required to complete a work method statement and full set of detail design drawings and supporting calculations to the satisfaction of the Oversight Team for the installation within 21 days of being awarded the tender.

13 HEALTH AND SAFETY

The contractor will adhere to all Health and Safety (H&S) requirement of the hospital.

The contractor shall supply and maintain all safety equipment, personal protective equipment and any other assistance and equipment required to gain access to work areas.

14 ACCESS AND CONTROL

The contractor and all other employees will be required to keep a register of time on site and handed to the Principal Agent on request.

15 SPECIFICATIONS, STANDARDS AND CODES

The installation shall be according to the following standards as far as practical.

- 1) Reticulation: ISO7396-1: Medical Gas Pipeline Systems
- 2) Liquid Oxygen: SANS 532:2023 or equivalent.
- 3) Medical Air: ISO 8573-1.
- 4) TUs: BS EN ISO 9179-1:2020
- 5) Local Building Regulations

16 SITE OFFICE

If required the contractor, in coordination with the Biomedical Engineer, shall provide his own site office.

The safekeeping of all equipment and tools shall be the responsibility of the contractor until the acceptance date.

17 HANDLING OF MATERIAL

The Contractor shall be responsible for providing all the required equipment for the off-loading and proper handling of the plant and material on site.

18 DOCUMENTS APPLICABLE

The following documents are available and will be provided on request:

- i. Concept Design Report – University Teaching Hospitals version for Tender dated 08 September 2024.

Any deviation from the concept design, must be declared in the covering letter of the tender submission.

19 INSPECTION AND TESTING

On completion of the installation, the contractor shall carry out his/her own inspections to ensure that the installation and equipment comply with safety standards before notifying the Engineer.

The Engineer will not act as the contractor's inspector or quality control official but to ensure that the work has been completed and to standard.

The Engineer should be notified no less than 10 (ten) days before completion for sign-off to enable travelling arrangements to be made.

No snagging procedure shall apply. Work completion shall be accepted or rejected per section as set out below.

20 CONTRACT COMPLETION MILESTONES

20.1 Sectional Completion

Sectional Completion Payment Certificates will be issued once the following has been achieved:

1. Monthly progress of reticulation based on actual progress.
2. Installation of LOX VIE with pressure control equipment.
3. First fill of LOX.
4. Practical Completion.

Payment Certification will include adjustment for all penalties incurred.

20.2 Works or Practical Completion

Works Taking Over Notice will be issued after:

1. All sectional completion payment certificates have been issued.

20.3 Final Completion

Final Completion will be reached once

1. Handover documentation, including Certificate of Compliance, has been received.

Retention of 5% on the reticulation component shall be kept for 3 months and shall be released once a final inspection was conducted.

21 PRICE SCHEDULES

Tenderers are required to submit unit prices as indicated in the "Bid Submission Document".

Price to hold firm for 90 (ninety) days from tender closing date.

22 PENALTIES

The following penalties shall be applicable:

1. Late completion (as defined in this document and the agreement to be concluded) of the project at 2.5% (two point five percent) of value per week or part thereof.

23 SITE VISIT FOR TENDERING PURPOSES

A compulsory tender brief will be held on **Wednesday the 22nd of January 2025** at 10h00 at the Administrative Boardroom of the Adult Hospital. An attendance register will be kept and only contractors who attend the compulsory site visit will be considered.

Unscheduled visits will not be allowed by the hospital.

24 GENERAL CONDITIONS

If successful, the contractor will follow the normal RtC procurement process. RtC Standard Procurement Terms and Conditions shall apply.

25 COMPULSORY SUBMITTABLE DOCUMENTS

The following documents needs to be submitted by the tender closing date:

1. Covering letter of introduction and deviation from the Concept Design.
2. Attached "Bid Submission Document" that is completed, initialed on each page and signed.
3. Concept Design with components and pipe sizing.
4. Company registration documentation
5. Value added Tax registration & Certificate of good standing documents
6. Bank Stamped Account confirmation letter
7. Completed and duly signed supplier registration form together with documents on section B of the form

26 SUBMISSION DATE AND TIME

The completed tender submission must be filled out by hand, scanned and submitted electronically in .pdf to the email address and by the closing date indicated on the front page of the returnable document.

No late submissions shall be accepted.



BID SUBMISSION DOCUMENT

DESIGN, SUPPLY, INSTALLATION AND COMMISSIONING OF:

Medical Air- and Medical Oxygen Reticulation

AT THE

University Teaching Hospital Adult- and Woman and Newborn Hospitals, Lusaka, Zambia

(Hereafter called **UTH Medical Air and Oxygen Project**)

DIRECT CONTRACT WITH

Right to Care NPC

(hereinafter referred to as "**RtC**")

CONTRACTOR NAME:

CLOSING DATE: 31 January 2025 at 12h00

Electronic submission in .pdf to: procurement@righttocare.org

Please scan this document, completed by hand, initialed on each page and signed

1 SCOPE OF WORK

This tender makes provision for a turnkey design and supply of the following:

- 1) Extension of the existing piped Medical Air (MA) installation of the Surgical Ward Building with the addition of 45 MA Terminal Units (TUs) in the Adult Hospital.
- 2) Design, Supply, Installation and Commissioning of a new piped Oxygen installation with 561 Oxygen TUs in the Adult Hospital and 88 Oxygen TUs in the Woman and Newborn Hospital.
- 3) Removing the existing piped Oxygen installation in the Adult Hospital.
- 4) Supply, Delivery, Installation, Commissioning and Operation of a 30t Liquid Oxygen (LOX) Vacuum Insulated Evaporator (VIE) tank with all pressure control- and safety equipment to supply Gaseous Medical Grade Oxygen at a minimum flow rate of 0 Liters per minute (L/min) and a maximum of 9 000 L/Min at a pressure of 10 Bar (1MPa) on a continuous duty cycle. This includes the supply and delivery into the VIE of 30 metric ton of Medical Grade Liquid Oxygen (99.5 v/v O₂) compliant to SANS 532:2023 or equivalent as a first fill. The delivery shall be accompanied by a certificate of oxygen purity i.e. percentage oxygen volume/volume.
- 5) Installation of 4 (four) new back-up MA cylinder manifold banks with automatic change-over manifold that has pressure control station with two manifold Pressure Reducing Valves (PRVs) (one per bank) and two (2) line PRVs, including all valves, safeties, a primary source connection point and all alarm contact points.
- 6) Installation of 3 (three) new back-up Oxygen cylinder manifold banks with automatic change-over manifold that has pressure control station with two manifold Pressure Reducing Valves (PRVs) (one per bank) and two (2) line PRVs, including all valves, safeties, a primary source connection point and all alarm contact points.
- 7) Installation of all manifold banks will include the preparation and painting of the entire manifold room and all statutory signage and physical security.
- 8) Upgrading of the existing MA plant filtration system to provide MA at a flowrate of 2800L/min and in compliance with ISO8573-1.
- 9) Supply and installation of a central- and local medical gas alarm system for MA and oxygen alarms expandable to Nitrous Oxide and Vacuum. Integration of the Vacuum alarm where currently available.
- 10) Commissioning and certification of the entire MA and Oxygen reticulation of the Adult and Woman and Newborn hospitals.
- 11) Supply of OEM Manuals including the Operational Manual, Design and As-Build drawings of the entire installation.
- 12) Allowance for temporary medical gas supply to all effected sections when the change-over banks are serviced and the central reticulation is connected.

....according to the "Concept Design – University Teaching Hospitals (Adult- and Woman and Newborn Hospitals Version for Tender" dated 8 September 2024 at the UTH, Lusaka, Zambia.

The bidder shall allow in his bid price for all material, labour, supervision, transport, tests and all other items necessary to complete the contract in its entirety.

2 REQUIRED DOCUMENTS

Please scan these documents, **in this order**, and submit in contiguous .pdf no larger than 20MB.

2.1 Bid Submission Document

The "Bid Submission Document", i.e. only page 9 to 14 of the Tender Document.

2.2 Attachments Covering Letter

Covering letter of introduction stating any intended deviations from the specification.

2.3 Concept Design Drawing

Basic drawings of the Concept Design, including all required system components and initial pipe sizing. Should the resolution be insufficient for a panel of engineers to reach a conclusion of the suitability of the design, single file of a high resolution drawing in .pdf may be attached to the submission.

2.4 Company Registration

The company is locally or regionally registered. Please attach a copy of registration.

2.5 Financial Compliance

Please attach

- a) Income Tax Certificate and/or Value Added Tax (if applicable) of Good Standing.
- b) Bank stamped account confirmation letter

2.6 Supplier Registration Document

Please attach

Completed and duly signed supplier registration form together with documents on section B of the form.

3 SCHEDULE OF SIMILAR WORK EXECUTED BY THE BIDDER

The Bidder must insert in the spaces provided below; a list of work completed during the past five (5) years. Only work of a similar nature to this Contract must be listed.

	Employer	Description of Work	Year Completed
1			
2			
3			
4			
5			

Please note that Right to Care may require a physical inspection of the works to confirm the quality thereof.

SIGNED ON BEHALF OF BIDDER:

UTH Medical Air and Oxygen Project
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4 SUB-CONTRACTORS

Please provide a list of qualified sub-contractors (if any) that will be deployed on the project:

Nr	Sub-Contractor	Scope
1		
2		
3		

4.1 Capacity

Number of Qualified staff in full time employment available for the project:

Number of Non-Qualified staff in full time employment available for the project:

5 PRICING

Our price schedule for achieving the scope of work is as follow:

5.1 Medical Gas Pipe and LOX Installation

Item	Description	Qty	Price
1	Extension of the existing piped Medical Air (MA) installation of the Surgical Ward Building with the addition of 45 MA Terminal Units (TUs) in the Adult Hospital.	1	ZMW
2	Design, Supply, Installation and Commissioning of a new piped <u>Oxygen</u> installation with 561 Oxygen TUs in the Adult Hospital and 88 Oxygen TUs in the Woman and Newborn Hospital.	1	ZMW
3	Removing the existing piped Oxygen installation in the Adult Hospital.	1	ZMW
4	Supply, delivery, installation, commissioning and operation of a 30t Liquid Oxygen (LOX) Vacuum Insulated Evaporator (<u>VIE</u>) tank with all pressure control- and safety equipment to supply Gaseous Medical Grade Oxygen at a minimum flow rate of 0 Liters per minute (L/min) and a maximum of 9 000 L/Min at a pressure of 10 Bar (1MPa) on a continuous duty cycle.	1	ZMW
5	Installation of 4 (four) new back-up <u>MA cylinder manifold banks</u> with automatic change-over manifold that has pressure control station with	1	ZMW

Item	Description	Qty	Price
	two manifold Pressure Reducing Valves (PRVs) (one per bank) and two (2) line PRVs, including all valves, safeties, a primary source connection point and all alarm contact points.		
6	Installation of 3 (three) new back-up <u>Oxygen cylinder manifold banks</u> with automatic change-over manifold that has pressure control station with two manifold Pressure Reducing Valves (PRVs) (one per bank) and two (2) line PRVs, including all valves, safeties, a primary source connection point and all alarm contact points.	1	ZMW
7	Preparation and painting of all manifold rooms and all statutory signage and physical security.	1	ZMW
8	Upgrading of the existing MA plant filtration system to provide MA at a flowrate of 2800L/min and in compliance with ISO8573-1.	1	ZMW
9	Supply and installation of a central- and local medical gas alarm system for MA and oxygen alarms expandable to Nitrous Oxide and Vacuum. Integration of the Vacuum alarm where currently available.	1	ZMW
SECTION A SUB TOTAL			ZMW

5.2 Other

Item	Description	Price
1	P&G	ZMW
2	Health and Safety	ZMW
3	Commissioning and certification of the entire MA and Oxygen reticulation of the Adult and Woman and Newborn hospitals.	ZMW
4	Handover file with Manuals, Pressure Test Certificates, As-built drawings and Certificate of Compliance.	ZMW
5	The supply and delivery into the VIE of 30 metric ton of Medical Grade Liquid Oxygen (99.5 v/v O ₂) compliant to SANS 532:2023 or equivalent as a first fill. The delivery shall be accompanied by a certificate of oxygen purity i.e. percentage oxygen volume/volume.	ZMW

Item	Description	Price
6	Allowance for temporary medical gas supply to all effected sections when the change-over banks are serviced and the central reticulation is connected.	
7	Other:	ZMW
SECTION B SUB TOTAL		ZMW

Total (Sub-section A+B) ZMW.....

Add V.A.T. ZMW.....

Add 10% Contingency ZMW.....

Total Tender Price ZMW.....

Tender price in words.....
.....

6 CONTRACT PERIOD

Lead time, in days, from appointment, required for manufacturing:days

Time, in days, required for delivery, placement, commissioning:days

7 TENDERER'S STATEMENT

I/We tender for the execution of the services as described herein:

TENDERER'S REGISTERED NAME AND ADDRESS (For FIDIC Appointment):

.....
.....

COMPANY/KEY PERSON CONTACT NUMBER:

COMPANY REGISTRATION NUMBER (For FIDIC Appointment):

COMPANY VAT NUMBER (For FIDIC Appointment):

Tenderer's Authorised Signatory

.....
(Signature)

Name:

Capacity:

Email Address.....

Date: