Clarification Questions from Prospective Bidders

Q.1 “A local distribution board, connected to a back-up emergency generator, shall be installed to supply all power in the plantroom. This includes room general lighting, three plugs, central alarm system, three vacuum pumps, two desiccant dryers, blowdowns and two medical air compressors”

Please confirm availability of existing generators.
Positions and specifications of generators are required, to calculate wiring costs and suitability of the hospital’s generators to supply the proposed equipment. Do the generators have change over contactors?

R: The electrical reticulation was not surveyed during the scoping visit. It can be assumed that insufficient emergency generator capacity will be available at the facility to drive the required medical gas plant. We suggest allowing a new medical gas DB inside the plantroom with a single cable to the main LT room. If sufficient generator capability is available, this new supply cable should be connected to the generator section of the main LT DB. If not, the supply should be connected to the normal section. Please look on Google Earth for likely position of main LT room based on visible bulk electrical supply. If the hospital needs a larger generator, it is recommended that this be done under separate tender.

Q.2 Confirm whether project engineer needs to be on site or can be the design engineer who is available remotely. Our project manager has a Wood Sciences Degree which is mostly engineering and applied materials science and has sufficient experience in medical gas piping design and installation. Confirm this will qualify for the lead engineer. The design engineer will also be available remotely and at times on site. Confirm whether this meets the criteria.

R: The Lead Engineer does not need to be on site. We need to verify the credentials and experience of the design engineer and if the design engineer will be available and responsible for overall oversight.

Q.3 How much of an upfront deposit can be made available as this will guide on whether a guarantee is feasible?

R: Please refer to Section 9 of the tender document. Any amount can be requested however, a bank security for the sum will be required. If you need US$1m as an upfront deposit, we will need guarantees from your bank for this amount. The cost of providing this guarantee must be inserted into Section B5 of the Bid price. The higher deposit you require, the higher the security guarantee will be and the higher the bid price. If no deposit is required, no guarantee costs will be required, making your bid lower than your competitor.

Q.4 Can we assume that milestone payments can be done as per the previous contracts which includes al signing fee?

R: We are not aware of how previous contracts were managed. We are not aware of a signing fee. Once a section of work is completed, the contractor may ask for the section to be signed off and you will get paid for that section minus retention

Q.5 Please provide more details and specifications on the bed head trunking. Scope does not include linear metres of trunking required, as this cannot be determined without a site inspection.

R: We recommend allowing 1 linear meter of trunking per bed. The trunking should have two compartments, one for electrics and one for medical gas according to the example in the Concept Design Report Section 7.11 Bedhead Trunking

Q.6 What are the specifications of the installed PRS from the existing VIE systems at each site to the plant rooms?
R: You may assume that the Pressure Regulation System will be able to provide the required flow from the VIE. Any upgrading of the VIE and its associated Pressure Control System will be done under a separate contract.

Q.7 Are locations of AVSUs in departments based on visibility for departmental staff or on the street side of entrance doors to departments?
R: The AVSU should be inside the ward/unit for security purposes and just inside the main passage door out of the ward/unit to turn off.

Q.8 All theatre departments have only been allocated one 4T AVSU. The standard is one per operating theatre/room. Please confirm.
R: The 4-tier AVSU is for all four gasses as the entrance to the theatre complex, however, should one be required to comply with ISO7391, please note such in your covering letter that deals with deviations from the concept design.

Q.9 The majority of the operating theatres only have one O2 and one NO2 terminal unit. The standard is for two per theatre. Please confirm.
R: All Theatres have to have 1xMA, 1xO2, 1xVAC and 1xN20 except where caesarean procedures are done where an additional O2 and Vac is installed. The number of TUs are based on a needs assessment as is allowed for in ISO7396 rather than any standard.

Q.10 Due to existing pipelines leaking, are there any hospital specific risk assessment requirements to prepare obsolete pipelines for safe removal?
R: No, not that we are aware of. One obviously need to install the new pipes to endure continuity of supply before taking the old ones out or provide a temporary supply via a flexible hose.

Q.11 Scope does not state requirement for building repairs after removal of existing and or obsolete pipelines. Please clarify.
R: Any damage needs to be repaired to best match the existing finish.

Q.12 TU standard in tender is BS EN ISO 9179-1:2020. We are currently installing TUs in Mozambique, as per MISAU, that adhere to the SANS 1409 standard. Please clarify.
R: Per the footnote in the Concept Design under TU standards, if the required standard is SANS1409, then this standard needs to be adhered to.

Q.13 Confirm whether 30 Nov is the delivery date for all sites.
R: Correct.

Q.14 Medical air compressors for all tenders. The ratings vary between 75% and 120%. Often these percentages vary within the same tender document (for example

Quelimane/Tete). Please confirm if all are supposed to be 120% or 75%. If there are variances, then confirm where there are inconsistencies in the same tender.
R: Air compressors need to be 120% of diversified flow each and vacuum pumps at 75% of diversified flow each.

Q.15 Please clarify that 'dial control Haier (?) fitting with screw on fitting for humidifier', is as per images below (male thread on flowmeter and female coupler on humidifier):
R: Correct.

MAPUTO

Q.16 The tender document is not consistent in its numbers. The Scope of Work seems to cite the Beira numbers. We assume that the Bid Submission document is correct - please confirm.
R: This correct. It appears that a previous version of the tender document has slipped into document that was published. We have updated and published the corrected document. Thank you for picking this up.

Q.17 In the Bid Price Schedule, there are inconsistencies with the Bid Submission Summary.
R: Yes, there would be however, this has been corrected in the update.

Q.18 Confirm whether there are to be 164 Medical Air TU's or 181 TUs to be removed.
R: Please refer to the updated document

Q.19 Confirm whether there will be 1376 or 1375 new oxygen TUs to be installed
R: Please refer to the updated document

Q.20 Confirm whether there will be 1334 or 1333 Vacuum TU's to be installed
R: Please refer to the updated document

Q.21 Confirm whether the TU's that remain are to be serviced. If so, please confirm the numbers
R: Please refer to the updated document

Q.22 Confirm whether there should be 4 or 25 Nitrous Oxide AVSU's installed
R: Please refer to the updated document

Q.23 Confirm which is correct - Medical Gas and Vacuum Equipment - Supply of 375 dual flow meters, 1125 single oxygen flowmeters, 1470 vacuum flow regulators, 35 Oxygen blenders, 25 Oxygen trolleys and 25 Oxygen regulators for moving patients OR 1383 single oxygen flow meters and 1341 vacuum flow regulators
R: Please refer to the updated document

Q.24 Confirm ENT Consulting: 1. No peak flow rate / 2. AVSU should be 4T, NO2 terminal listed in Addendum 1
R: Thank you, this has been corrected in the Update

Q.25 AVSU quantities in tender document are 31, 226 in the Concept Design total and 60 if calculated from Addendum 2.
R: Please refer to the updated document, 52 AVSUs

NAMPULA

Q.26 Confirm whether there should be 283 or 383 Oxygen TU's installed
R: The number is 383 TUs

Q.27 Confirm whether the diversified flow rate for the Vacuum pump should be 3736 or 3320
R: We confirm 3320 l/min

TETE

Q.28 Bid price schedule; confirm whether 222 Single Oxygen flow meters and 187 Vacuum flow regulators are required.
R: We confirm 222 Oxygen and 187 vacuum regulators.

BEIRA

Q.29 Confirm whether the Nitrous Oxide change-over system should be 4x2 (bid price schedule) or 2x2 (scope)
R: Please price for a 4x2 Nitrous Oxide

Q.30 Qty of NO2 TUs: 4 or 7?
R: Seven please, this can be reference in Addendum 1

Q.31 Confirm that the correct number is 112 below.
R: Again, the number of flow regulators can easily be reference in Addendum 1 as being 112.

Supply and installation of 112 vacuum flow regulators and liquid containers with Gabler type clips.	172	$

Q.32 Confirm that 243 is correct and not 276.
R: Confirmed that 243 is the correct amount.

Item	Type	Description	Qty	Total Price
8.1	Equipment	Medical Gas and Vacuum Flow Regulators: Supply and installation of 243 single oxygen flowmeters with humidifier bottles.	276	$
8.2		Supply and installation of 112 vacuum flow regulators and liquid containers with Gabler type clips.	172	$
9		Electrical DB and connections of all plant to a suitable electrical source	PC	$
SECTION A SUB TOTAL				$

CHIMOIO

Q.33 Confirm whether the rails are (100) 300mm and (44) 600mm OR (144) 300mm and (2) 600mm.
R: The correct numbers are reflected in Addendum 1

Q.34 Confirm that the number of O2 TUs are 270 + 6 (TB) = 276.
R: The correct numbers are reflected in Addendum 1

Q.35 No 4T AVSU in theatre.
R: Apology, typo in the table, thank you for correcting. There should ab a 4-tier AVSU in theatre.

Q.36 Is a separate diesel generator needed for each of the gas plant as stated under the various section or a single power supply will be sufficient for each site. Also, this was not included in the pricing sheet. Confirm if it falls under our scope of work.
R: No separate generator will be required. A single supply from the closest appropriate electrical source will be acceptable. If an emergency supply with sufficient spare capacity is available, it should be connected there. If no emergency supply is available, it should be connected to the closest normal supply of sufficient capacity.

Q.37 Kindly clarify if only hand written submission forms will be accepted. If hand written, are we required to handwrite only portions to be filled out?
R: Any writing is acceptable as long as “the reasonable person” can read it. What is critical is that the bid price is filled in the format given to ensure the correct price is

evaluated. If a separate pricing schedule is provided, we cannot accept responsibility if the incorrect pricing was evaluated.

Q.38 For the removal & servicing of the existing piping systems do we charge as a gross total or per meter/unit?
R: Gross total (PC amount) please as indicated in the pricing schedule.

Q.39 Site named **Quelimane does not** have the tender drawing attached as part of the documents.
R: Drawings were uploaded in the Box folder

Q.40 The quantity listed under No. 8.1 -9 for Tete site does not tally. Kindly check
R: Thank you, the amount should be as per the Addendums 1 and 2 in the Concept design report and the Scope of Work i.e. 222 oxygen and 187 Vacuum.

Q.41 Should the air compressor of the air plant be oil free or oil injected?
R: Bidder's choice, if an oil lubricated compressor is used, the filtration needs to be such that MA at the correct purity is still delivered.

Q.42 In the price quotation , P& G is stated , kindly help us understand what it means.
R: This refers to "Preliminaries and General". This relates to costs associated to establish works, permits, travel and accommodation, food and any other costs that are associated with the entire works rather than a specific section.

Q.43 "Cost of Security Bond if a Deposit is required. State Deposit value required" kindly explain what this is as we did not see any request for bid security amount or % in the document.
R: Please refer to Section 9 of the Tender Document.

Q.44 For certification, do you mean third party inspection?
R: Certification to be done according to ISO7396 please. It will have to be a third party if someone with the correct accreditation does not exist within the company.

Q.45 Also for health and safety, kindly clarify what is required.
This refers to the usual H&S requirements such as providing your staff with the correct PPE and safe working environment, needs to be priced for. Please just make sure there are no local health and safety inspections required for such works that you would not be prepared for.

Q.46 Is each hospital considered a separate lot and is evaluated separately?
R: Yes

Q.47 What is the required warranty period.
R: One year from taking over of works in line with the retention.

Q.48 Who bears customs and clearance charges
R: CHAI and MoH

Q.49 Is maintenance service (after sales services) required? If yes, for how many years.
R: All repairs during the first year (during retention) as a result of installation defects will be borne by the contractor. Abuse is obviously excluded.

Q.50 Line Valve Assembly
There is no line valve assembly mentioned in the tender document, but it is mandatory as per HTM standards. Should we add it to the BOQ to ensure compliance?
R: There is a lot of detail that is not mentioned in the Concept Design as there is no need to repeat what is already required by the standards. The tender requires that the MGPS installation shall comply to ISO7396, the costing should provide for everything that is required to comply.

Q.51 CAD Drawings
There is no CAD version of the drawings, which is required for submitting design drawings. Can you provide them?
R: We have not received CAD drawings of the detail either. As clarified previously, a detail design is not required for Bidding and will only be required by the winning bidder.

Q.52 Terminal Units Mounting
The tender states that Terminal Units shall be surface mounted (except in ICU, Theatre, NNU, and Nursery). Can you clarify how the terminal units will be mounted in these departments, particularly in the operating theatres?
R: In Nursery, the TUs shall be mounted in new bedhead trunking as indicated in Section 7.11 of the Concept Design. In theatre, there are usually provision for TUs in a Theatre Control Panel. In ICU and NNU, bedhead trunking is usually already installed with TUs that has to be replaced in the same place.

Q.53 Terminal Units in Quelimane Central Hospital
The existing 123 Terminal Units need to be serviced and increased by 181, making a total of 304 oxygen terminal units. However, the existing terminal units follow the Japanese standard, which requires removal and full replacement with British Standard (BS) units for all gases, not just oxygen.
Please confirm if this approach is correct.
R: Excellent question, thank you. Yes, I agree with the approach. By extension, male probes of the existing medical equipment will have to be replaced to fit into the new TUs. Please price a PC amount in the “Other” section of the submission document as an allowance for this to be done. Suggest allowance for 10 ventilators and 5 anaesthetic machines on flexible hoses for all gasses as well as 181 vacuum regulators.

Q.54 Oxygen Supply in Hospital Central de Maputo
The tender states that the three existing LOX bulk supplies should be retained. However, due to their age and associated control valves, replacement should be considered. Oxygen should be distributed at high pressure (7-10 bar) to each building, where the primary source will be supported by automatic change-over

cylinder manifolds as secondary and reserve supplies. Does this mean we need to add a VIE tank to the BOQ?
R: We concur that the VIEs needs to be replaced however, this is done under a separate tender process.

Q.55 Surgical Air (SA) for Operating Theatres
There is no provision for Surgical Air (SA) in the operating theatre, which is used as a power source for surgical tools. Should this be included?
R: No provision for HP MA is required.

Q.56 AVSU Integration with Alarm Panels
AVSUs should be integrated with the local alarm panel as one unit, with NIST connectors for each gas (except Vacuum), and installed at the nurses' station in each ward. Please confirm if this approach is acceptable.
R: The AVSU should be installed at the entrance to the ward, and it is acceptable to have the local line failure alarm located at the AVSU rather than the nurse station. NIST of a TU point are both acceptable even though a TU point is preferable due to the availability of male probes.

Q.57 Liquid Trap Installation for AVSU with Vacuum Supply
Regarding your request to install a liquid trap inside the ward/unit, we would like to highlight that there are alternative options:
Installed on the main vacuum pipeline (inside the plant), OR
Integrated with bacteria filters to collect liquid, OR
Fitted with a vacuum regulator safety trap to prevent liquid ingress into the vacuum network.
Please confirm which solution is preferred.
R: The installation of a trap at the AVSU at the entrance to the ward is preferred. Bacterial filters and liquid traps should be installed in the plantroom.

Q.58 Manifold Flow Rate Requirement
Please specify the required volumetric flow rate (in m^3/hr) for the manifolds.
R: The volumetric flowrate should support the diversified flow of the area that it will supply.

Q.59 Vacuum Regulators for Neonatal & Pediatric Departments
The quantity of vacuum regulators (0-250 mbar) should be allocated based on the number of terminal units in neonatal and pediatric departments.
Please confirm the required quantity.
R: Please refer to Addendum 1 of each Concept Design for the quantities.

Q.60 Pressure Regulation for Oxygen Reticulation
The old system depends on second-stage pressure regulators for oxygen reticulation. Should we include a pressure-reducing set instead, to regulate the pressure more effectively?
R: That is what will differentiate between the Bidder's designs. It would be prudent to distribute at High Pressure to each manifold and from there at LP into the ward. The issue with a local PRV set is that if it fails, there is no automatic back-up from a cylinder manifold.

Q.61 Clarify regarding the requirements for Design, supply, installation and commissioning of medical air, oxygen, nitrous oxide and Vacuum Installation at all sites.
The tender document appears to contradict itself.
30% of the submission is assessed upon the design completeness (engineering submission – drawings design and calculations), however later in the document it states that the contractor will be required to complete the detailed design drawings within 21 days of being awarded the tender. Please confirm whether engineering drawings are part of the submission requirements. See below excepts from the documentation for your reference.

Description	Percentage	Scoring
Competency	20% (twenty)	Each previous medical gas project = 2% (two percent) (max 10% (ten percent)), Table not completed = 0% (zero percent) Competent chief engineer = 10% (ten percent), No chief Engineer = 0% (nil percent)
Design	30% (thirty)	Score of a panel of engineers for design completeness based on engineering submission i.e. drawings, design report, calculations. Best = 30% (Thirty), Worst = 0% and the rest ranked and awarded points pro-rata according to rank.
Price	50% (fifty)	Prices scored according to the formula: $Price\ Score = 50 \times (1 - \frac{Bid\ Price - Lowest\ Price}{Lowest\ Price})$
TOTAL	**100% (one hundred percent)**	

R: Most Bidders do not have access to the facilities to enable them to do a detail design before submitting a Bid.

The idea is a basic design that shows all the elements and equipment that they intend using. The diversified flowrates that were provided together with the plans, would enable Bidders to do a basic design that includes pipe size calculations. I am interested to see:

1. Is the Bidder able to do pipe sizing calculations. This will be determined if the pipe size makes sense.
2. Do they know where to place AVSUs, alarm panels.
3. Are they able to get to a more efficient design than the Concept by choosing different pipe routes, different pressure systems etc.
4. What equipment is being offered.

The more information the Bidder can provide on the drawing, the better. We need to see that a Bidder looks at the site and the flowrate required, indicate that a certain pipe size (based on experience/initial calculations) is required and do the calculation of the cost. We expect the price to be within 10% of the actual price at this point, hence allow a contingency.

We do not want an extraordinary design effort of calculating out the entire hospital pipework and the Bidder do not get the work.

Once the adjudication team indicates that the ability is there (demonstrated by the level of drawing) and the price is competitive, we will appoint. Only at this stage, is it worthwhile for the appointed contractor to spend money to travel to site, confirm the measurements and pipe routes and to do a DETAIL DESIGN to be approved for construction within the indicated time.

This approach is has an advantage to the Bidders of not being overly cumbersome to Bid and they appreciate not incurring a huge design cost and then not getting the appointment. It gives the CHAI the opportunity to determine the correct company to appoint and because the outcome specification (and standards) are clearly specified in the tender, the quality of installation is going to be top quality.

In conclusion, we find the balance of effort vs outcome acceptable yet have a robust adjudication process.

Q.62 Requirement for Registered Company: The ITB mentions that the bidder must be a **"registered company"**. Could you please confirm whether this means the bidder must be a **company registered in Mozambique**?
R: Being registered in Mozambique is not mandatory, however is mandatory to be recognized in your own country and Have relevant experience among other countries.

Q.63 In the case where the bidder is not a locally registered company, would a **partnership or joint venture (JV) with a local registered company** be acceptable to fulfill this requirement?
R: This should be an advantage to joint venture with a local company, however is not mandatory.

Q.64 Alternatively, if a local company registration is required, can it be completed after the contract award, or must it be in place at the time of bid submission?
R: This is an option as per the Vendors, not mandatory for this tender.

Q.65 Site Visit Requirement: We would also like to clarify whether a **site visit is mandatory** before submitting the bid. If so, we request information on the following:

- The scheduled date and location for the site visit.
- If a local partner or representative can attend the site visit on behalf of the bidder.
- Any specific requirements or procedures for participating in the site visit.

R: The Site Visit is not mandatory as CHAI provided all technical drawing and BOQ, the site Visit should be carried after award to confirm the BoQ and sign of the drawings.