



Request for Sealed Quotations for the

**Supply and Delivery of End Suction Pump-Motor Sets for Omafo – Oshikango
PS.**

Procurement Reference No: G/RFQ/NW-081/2024

Name of Bidder		
Contact Person		
E-mail Address		
Postal Address		
Total Amount N\$ (Excl. VAT)		
Contact Phone number	Work:	Mobile:

Documents must be posted / delivered to:

The Quotation/Bid Box

Att: Procurement Management Unit (+264 61 71 2015, bids@namwater.com.na)

Namibia Water Corporation Ltd.

Private Bag 13389

176 Iscor Street, Aigams Building

Windhoek

Closing Date: Thursday, 07 March 2024 at 11h00

NO LATE BIDS WILL BE ACCEPTED!



Namibia Water Corporation Ltd.
Private Bag 13389, Windhoek, Namibia
Tel: +264 61 71 2066
Fax: +264 61 21 0741

Letter of Invitation

Name and Address of Bidder _____

Procurement Reference Number: G/RFQ/NW-081/2024

19 February 2024

Dear Sir/Madam

Supply and Delivery of End Suction Pump-Motor Sets for Omafo – Oshikango PS.

NamWater invites you to submit your best quote for the items described in detail hereunder. Any resulting contract shall be subject to the terms and conditions referred to in the document. Queries, if any, should be addressed to Procurement Management Unit E-mail: bids@namwater.com.na, Private Bag 13389 Windhoek, Namibia.

Please prepare and submit your Bid in accordance with the instructions given or inform the undersigned if you will not be submitting a quotation.

Yours faithfully,

Procurement Management Unit

SECTION I: INSTRUCTIONS TO BIDDERS

1. Rights of Public Entity

NamWater Ltd reserves the right:

- (a) to split the contract as per the lowest evaluated cost per item, and
- (b) to accept or reject any quotation; and
- (c) to cancel the quotation process and reject all quotations at any time prior to contract award.

2. Preparation of Quotations

You are requested to quote for the items mentioned in Section III by completing, signing and returning:

- (a) the Quotation Letter in Section II;
- (b) the List of Goods and Price Schedule Section III;
- (c) the Specifications and Compliance Sheet in Section V; and
- (d) any other attachment deemed appropriate.

You are advised to carefully read the complete bidding document, including the Special Conditions of Contract in Section VII, before preparing your quotation. The standard forms in this document may be retyped for completion but the Bidder is responsible for their accurate reproduction.

3. Validity of Quotations

The Quotation validity period shall be **90** days from the date of submission deadline.

The tenderer shall initial each page after having read and completed this document. Any alterations made to any of the information contained in this document shall also be initialled.

4. Eligibility Criteria

To be eligible to participate in this Quotation exercise, you should:

- (a) Have a valid company Registration Certificate;
- (b) have an original valid good standing Tax Certificate;
- (c) have an original valid good Standing Social Security Certificate;
- (d) have a valid Affirmative Action Compliance Certificate, proof from Employment Equity Commissioner that bidder is not a relevant employer, or exemption issued in terms of Section 42 of the Affirmative Action Act, 1998;
- (e) Submit signed Bid-securing Declaration.
- (f) Submit the documentary evidence of the Bidder's qualifications to perform the contract if its bid is accepted shall establish to the Purchaser's satisfaction that:

- i. submit the Manufacturer's Authorization to demonstrate that it has been duly authorized by the manufacturer or producer of the Goods to supply these Goods in Namibia and that the Bidder is equipped and able to carry out the Supplier's maintenance, repair and spare parts-stocking obligations prescribed in the Conditions of Contract and/or Technical Specifications.
- (g) An undertaking on the part of the Bidder that the salaries and wages payable to its personnel in respect of this proposal are compliant to the relevant laws, Remuneration Order, and Award, where applicable and that it will abide to sub-clause 4.6 of the General conditions of Contract if it is awarded the contract or part thereof; and;

The obligatory documents indicated above, are acceptable as follows:

- A valid original document; or
- A valid original document; or a valid certified copy of an original document, as certified by a Commissioner of Oath appointed in terms of the Justices of the Peace and Commissioners of Oaths Act, 1963 (Act No. 16 of 1963) as amended.

5. Bid Securing Declaration

Bidders are required to subscribe to a Bid Securing Declaration for this procurement process.

6. Delivery

Delivery shall be **8 to 10 weeks** after acceptance/issue of Purchase Order. Deviation in delivery period *shall not be accepted/shall be considered if such deviation is reasonable*.

- 6.1. All items shall be delivered to 176 Iscor Street Namwater at the Aigams Building, Northern Industrial Area in Windhoek.
- 6.2. Delivery will only be considered completed once all equipment and documentation have been delivered, inspected, and found to be in accordance with the specifications.
- 6.3. A penalty of 1/14%, per day, of the total contract amount will be deducted from the tender amount for late deliveries.
- 6.4. In the event of costs being incurred due to late deliveries, this will be on the bidder's account and include the cost of overtime and any other such costs.

7. Sealing and Marking of Quotations

Quotations should be sealed in a single envelope, clearly marked with the Procurement Reference Number, addressed to NamWater with the Bidder's name and contact information at the back of the envelope.

8. Submission of Quotations

Quotations should be deposited in the Quotation/Bid Box located at Namibia Water Corporation Ltd Head office, Private Bag 13389, 176 Iscor Street, Aigams Building, Windhoek, not later than **Thursday, 07 March 2024 at 11h00**. Offers by post or hand delivered should reach Private Bag 13389 by the same date and time at latest. Late Offers will be rejected.

Offers received by e-mail will not be considered.

9. Opening of Quotations

Quotations will be opened internally by NamWater immediately after the closing time referred to in instruction 8 above. A record of the Quotation Opening stating the name of the bidders, the amount quoted, the presence or absence of a Bid Security/Bid Securing Declaration, will be posted on the website of the Public Entity and available to any bidder on request within three working days of the Opening.

10. Evaluation of Quotations

NamWater shall have the right to request for clarifications in writing during evaluation. Offers that are substantially responsive shall be compared on the basis of price or ownership cost, subject to Margin of Preference where applicable, to determine the lowest evaluated quotation.

11. Technical Compliance

Bidders shall submit along with their quotations documents, catalogues and any other literature to substantiate compliance with the required specifications and to qualify deviations if any with respect to NamWater's requirements.

The Specifications, Performance Requirements and Compliance Sheet details the minimum specifications of the goods/items to be supplied. The specifications have to be met but no credit will be given for exceeding the specifications.

12. Prices and Currency of Payment

Prices shall be fixed in Namibian Dollars.

13. Award of Contract

The Bidder having submitted the lowest evaluated responsive quotation and qualified to supply the goods/items and related services shall be selected for award of contract. Award of contract shall be by issue of a Purchase Order/Letter of Acceptance in accordance with terms and conditions contained in Section VI: Contract Agreement and General Conditions of Contract.

14. Notification of Award and Debriefing

The Public Entity shall after award of contract promptly inform all unsuccessful bidders in writing of the name and address of the successful bidder and the contract amount and post a notice of award on its website within seven days. Furthermore, the Public Entity shall attend to all requests for debriefing made in writing within 7 days of the unsuccessful bidders being informed of the award.

SECTION II: QUOTATION LETTER

[Complete this form with all the requested details and submit it as the first page of your quotation with the Price list and documents requested above. A signature and authorisation on this form will confirm that the terms and conditions of the RFQ prevail over any attachments. **If your quotation is not authorised, it will be rejected.**]

Quotation addressed to:	Namibia Water Corporation Ltd
Procurement Reference Number:	G/RFQ/NW-081/2024
Subject matter of Procurement:	Supply and Delivery of End Suction Pump-Motor Sets for Omafo – Oshikango PS.

We offer to supply the items listed in the attached List of Goods and Price Schedule as per the defined specifications, *except for the qualified deviations [Bidder may delete this phrase in case of no deviation]* and, in accordance with the terms and conditions stated in your Request for Quotations referenced above.

We confirm that we are eligible to participate in this Quotation exercise and meet the eligibility criteria specified in Section 1: Instruction to Bidders.

We undertake to abide ethical conduct during the procurement process and the execution of any resulting contract.

We have read and understood the content of the Bid Securing Declaration (BSD) attached hereto and subscribe fully to the terms and conditions contained therein. We further understand that this subscription could lead to disqualification on the grounds mentioned in the BD].

The validity period of the Quotation is**days** from the date of the bid submission deadline.

We confirm that the prices quoted in the List of Goods and Price Schedule are fixed and firm and will not be subject to revision or variation, if we are awarded the contract prior to the expiry date of the quotation validity.

The delivery period offered from the date of issue of Purchaser Order/ Letter of Acceptance is as shown in the List of Goods items and Price Schedule.

Quotation Authorised by:

Name of Bidder		Company's Address and seal	
Contact Person			
Name of Person Authorising the Quotation:		Position:	Signature:
Date		Phone No./Fax	

BID SECURING DECLARATION
(Section 45 of Act)
(Regulation 37(1)(b) and 37(5))

Date:

Procurement Ref No.:

To:

I/We* understand that in terms of section 45 of the Act a public entity must include in the bidding document the requirement for a declaration as an alternative form of bid security.

I/We* accept that under section 45 of the Act, I/we* may be suspended or disqualified in the event of

- (a) a modification or withdrawal of a bid after the deadline for submission of bids during the period of validity;**
- (b) refusal by a bidder to accept a correction of an error appearing on the face of a bid;**
- (c) failure to sign a procurement contract in accordance with the terms and conditions set forth in the bidding document, should I/We* be successful bidder; or**
- (d) failure to provide security for the performance of the procurement contract if required to do so by the bidding document.**

I/We* understand this bid securing declaration ceases to be valid if I am/We are* not the successful Bidder

Signed:
[insert signature of person whose name and capacity are shown]

Capacity of:
[indicate legal capacity of person(s) signing the Bid Securing Declaration]

Name:
[insert complete name of person signing the Bid Securing Declaration]

Duly authorized to sign the bid for and on behalf of: *[insert complete name of Bidder]*

Dated on _____ day of _____, _____
[insert date of signing]

Corporate Seal (where appropriate)

[Note*: In case of a joint venture, the bid securing declaration must be in the name of all partners to the joint venture that submits the bid.]

****delete if not applicable / appropriate***



Republic of Namibia

Ministry of Labour, Industrial Relations and Employment Creation

Written undertaking in terms of section 138 of the Labour Act, 2015 and section 50(2)(D) of the Public Procurement Act, 2015

1. EMPLOYERS DETAILS

Company Trade Name:.....

Registration Number :.....

VAT Number:

Industry/Sector:

Place of Business:.....

Physical Address:.....

Tel No.:.....

Fax No.:.....

Email Address:.....

Postal Address:.....

Full name of Owner/Accounting Officer:.....

.....

Email Address:.....

2. PROCUREMENT DETAILS

Procurement Reference No.:.....

Procurement Description:

.....

.....

Anticipated Contract Duration:

Location where work will be done, good/services will be delivered:

.....

3. UNDERTAKING

I *[insert full name]*, owner/representative

of*[insert full name of company]*

hereby undertake in writing that my company will at all relevant times comply fully with the relevant provisions of the Labour Act and the Terms and Conditions of Collective Agreements as applicable.

I am fully aware that failure to abide to such shall lead to the action as stipulated in section 138 of the labour Act, 2007, which include but not limited to the cancellation of the contract/licence/grant/permit or concession.

Signature:

Date:

Seal:.....

Please take note:

1. *A labour inspector may conduct unannounced inspections to assess the level of compliance*
2. *This undertaking must be displayed at the workplace where it will be readily accessible and visible by the employees rendering service(s) in relations to the goods and services being procured under this contract.*

NAME:	POSITION:	SIGNATURE:	DATE:
NAME OF BIDDER:		ADDRESS:	

1. If Price quoted is subject to change in rate of exchange at the time of delivery of goods provide details hereunder:

Currency: Exchange Rate:

If no base rate of exchange is given, the price shall be treated as firm in Namibian Dollars for all intent and purpose.

Key notes: **NA**=NOT APPLICABLE, **NQ**=NO QUOTE

SECTION IV: SPECIFICATIONS AND PERFORMANCE REQUIREMENTS

4.1 General

This tender call for the Supply and Delivery of Pump Sets (End Suction): Omafo – Oshikango PS.

The whole pump components must be supplied by the same pump Manufacturer including the pump body, pump cover, impeller, shaft, shaft sleeve, and seals. Well drillers, distributors or other fabrication shops will not be allowed to furnish equipment built in their local fabrication shop.

Except as modified or supplemented herein, all the pumps shall conform to the applicable requirements of **ANSI/AWWA E101** and the Hydraulic Institute (H.I) Standards.

Supplier shall be certified to the **ISO 9001 standard** for design and manufacture of end suction pumps.

Equipment shall be manufactured in a facility that recognizes its impact on the environment, and has demonstrated a commitment to minimizing that impact by achieving **ISO 14001 certification**.

4.2 Mounting

The pump-motor sets will be mounted on top of a design specific steel base frame for the offered pump. **The steel base frame is part of this offer. The motors and couplings are part of this tender.**

4.3 After Sales Services

An authorised service agent capable of servicing the offered pumps and motors must be located in Namibia. The service agent must be able to supply wear items including pump impellers to NamWater Head office within 30 working days of receipt of an order for such items.

4.4 Warranty

The tenderer must provide a warranty of minimum 12 months on performance and mechanical wear from the day of delivery as a commitment on quality of offered items.

4.5 Importance of Efficiency & Guaranteed Value

Suppliers must guarantee their offered pump efficiency percentage at the specified duty points. Tenderers shall accept an in situ pump efficiency test by reservoir drawdown measurement, certified motor efficiency and certified dual electrical kW meters.

Tenderers shall specify the standard factory efficiency of the pump at the required duty points.

Following technical compliance verification, NamWater will determine the life cycle cost of each offer with regards to power consumption and capital expenditure over a period of 15 years to identify the most financially viable offer.

Lot 1 - PUMP SETs FOR Omafo - Oshikango PS

1.1 General

Potable water will be pumped from the Omafo reservoir to the Oshikango ground reservoir and the Omafo Tower.

The pump set units will be installed inside an enclosed building with ambient temperatures of up to 45°C. The maximum allowable operating altitude of the motors shall be 1650 m above sea level. The pump set units shall be suitable for variable speed (frequency) drives (VSD/VFD) start-up. The two (2) Centrifugal End-Suction Pumps and Non-derated AC Motors for the Omafo - Oshikango Pump Station will operate in 1 duty plus 1 standby.

The motor units shall be selected to operate at 50 Hz while operating the pump at 1500 ± 100 rpm.

The pump/motor units shall not have a critical vibration speed within the specified operating range.

1.2 Pump Impeller Welding and Shaft Sealing

All impeller and diffuser vanes shall be continuously weld along the full length of the vane. **No spot-welding will be acceptable.**

Shaft sealing on pump shall be by means of a high quality mechanical seal suitable for potable water with a maximum of 2 ppm chlorine content.

1.3 Pump Performance & Efficiency

The pumps shall be selected to operate at 50Hz. Detailed pump curves at the rated motor speed shall be included in the offer.

The following information, detailed in SI units, must be included as part of the offer:

- A Pump Head vs. Flow curve,
- NPSH vs. Flow curve.
- Efficiency vs. Flow curve,
- Pump Power consumption vs. Flow curve.

NamWater reserves the right to fully reject the offer on failure of the tenderer to submit this information.

1.4 Pump Duty

The pumps shall be selected according to operate at a speed not exceeding 1500 rpm in a 1 duty plus 1 standby configuration in a parallel arrangement. Detailed H-Q (head – flow) curves of the pumps at the different flows for the duty points given in the table hereunder down to a shut-off and up to a run-off head pressure shall be included in the offer.

The H-Q curves of the pumps at varying flows shall pass through or within 10% of pressure head above the primary point.

The H-Q curves of the pumps at varying flows shall pass below the secondary points.

Point No.	Pump Curve Characteristics of One Pump		
	Flow (m ³ /h)	Head (mWh)	Speed (rpm)
<i>Secondary Points 1</i>	<i>90</i>	<i>72</i>	<i>1500</i>
<i>Primary</i>	<i>110</i>	<i>60</i>	<i>1500</i>
<i>Secondary Points 2</i>	<i>130</i>	<i>65</i>	<i>1500</i>

The **pump efficiency** at the primary duty flow shall be no less than **60%**.

The **primary duty point** of the offered pump shall be on the **left of** or **at the best efficiency point** on the reduced impeller pump curve.

The rotational direction of pump when viewed from the drive end side must be clockwise.

The NPSH requirement of the pumps shall not exceed **6 mWh** at the specified duty point. The pumps will operate at an approximate altitude of 1650 masl.

1.5 Suction and Discharge

The rated operating pressure of the pump suction flanges is 1000 kPa and for the discharge flanges is 1600kPa. The flange number of holes, PCD of holes and holes diameters shall be drilled to SANS 1123 and according to their respective pressure rating. The tenderer must provide all information indicating the dimensions of the suction and discharge flanges for the offered pump. The pump shall be able to fit on the existing pipework which has a suction and discharge nominal diameter of DN100 and DN80 respectively.

1.6 Materials of Construction

The parts of the pumps indicated in the table below shall be constructed of the following materials:

Materials of Construction		
Component	Material Type/Make	Material Specifications
Volute Casing	Grey Cast Iron	JL 1040/ A 48 CL 35B
Discharge Cover	Grey Cast Iron	JL 1040/ A 48 CL 35B
Cooling Cover	Grey Cast Iron	JL 1040/ A 48 CL 35B
Shaft	Stainless Steel	304/316
Impeller	Stainless Steel	316
Bearings	Stainless Steel. Oil lubricated.	
Bearing Bracket or Pedestal	Grey Cast Iron	JL 1040/ A 48 CL 35B
O-ring	FKM	
Body Sealing	KLINGERSIL	C4243
Shaft Sealing	Mechanical Seal	AESSEAL® EagleBurgmann® John Crane®
Casing Wearing Ring (Suction and Discharge side)	Grey Cast Iron	JL 1040/ A 48 CL 35B
Shaft Sleeve	Stainless Steel	304/316

Internal/External Fasteners and Impeller Nut	Medium Carbon Steel	Grade 8.8
External/Internal coating	Carboline® Carboguard® 891	250 micron dry film thickness

1.7 Internal Housing & Impeller Finish

All surfaces and castings shall be free of any casting cavities and properly finished to be free of metal warts, protrusions, lumps etc. No cavities or voids shall be putty filled to imitate a smooth surface.

1.8 Internal & External Coating

The entire pump body shall be internally coated with a minimum of three coats of Carboline® Carboguard® 891. The entire pump body shall be externally coated with a minimum of two coats of Carboline® Carboguard® 891. The minimum dry film thickness shall be 250 micron. Surface preparation and coating shall be done strictly according to the manufacturer's specifications. Application shall be by means of spraying, **not** by means of brushes or rollers.

Equivalent or superior coatings will be acceptable provided the quality of the coating can be authenticated by means of supplementary literature to be provided as part of the offer.

1.9 Drawings of Pump

The height between the pump main shaft's axis and the bottom of the base frame should be 342mm. The Tenderer shall submit with his Tender, a scaled drawing showing all relevant dimensions of the pump such that the engineer can confirm that the offered pump-motor assembly **fit the proposed foundation on site.** The dimensions shall be accurate to within 3 millimetres. The drawings shall include certified side elevations and plane view outline drawings and a cross section drawing. **Failure to submit drawings will result in automatic disqualification.**

1.10 Factory Specification Sheet

The Tenderer shall submit with his tender complete factory specification sheets of the units offered.

1.11 Information Plates

Each pump shall be fitted with durable metal plate clearly marked with the following minimum information:

- Pump make & model
- Best efficiency point (flow & pressure)
- Full impeller diameter
- Installed impeller diameter
- Shaft power required at best efficiency point for installed impeller diameter
- Nominal operating speed
- Pump mass
- Serial number

1.12 Performance & Vibration Testing

1.12.1 General

Performance testing is a separate section of this tender and Tenderers must familiarise themselves with the tests to be executed and accept the procedures and results from the respective testing authorities as well as the liability for any rectification which may arise as a result of the tests.

The cost of rectification as well as further testing to prove compliance with the specifications will be for the tenderer's own account.

NamWater may decide to send a technical person to the factory to witness the tests. The expenses will be for NamWater's own account.

1.12.2 Pump Performance

The pumps performance and NPSH testing shall be in accordance with **ISO 9906 Grade 2** specification and shall comply with the error limits therein. Factory test certificates are required for all the pumps supplied.

The pump tests will include a set of stable readings confirming flow versus head, power, efficiency and NPSH characteristics. These test certificates shall be supplied to NamWater before shipping the units.

1.12.3 Vibration Testing

The supplier will perform vibration testing of the pumps in accordance with **H.I. standards** at rated design condition. These results shall be supplied to NamWater before shipping the units.

The testing shall be continuous for the duration of the performance test and shall give overall vibration level and full frequency analysis of the set's vibration level at the various performance test points. The following minimum values will be allowed:

Parameter	Value
Overall vibration level	2.5 mm/s
First harmonic frequency	2.2 mm/s
Second harmonic frequency	1.25 mm/s
Third harmonic frequency	1.0 mm/s
First vane pass frequency at duty point	1.5 mm/s
Bearing defect frequencies	none

Failure of the pumps to meet these limit will result in the rejection of the units where after the Contractor must correct the faults and arrange for further testing.

1.13 Supporting Data and Delivery

A tender will be **disqualified** if the following information is not included with the offer:

- Pump information in SI units
- Pump H-Q curves indicating power requirements at operating speeds
- Pump efficiency curve at operating speeds
- Scaled sectional drawings showing relevant dimensions of the pump
- Pump components list including materials of construction of components
- Bearing data sheets

Delivery will only be deemed complete if NamWater received the following data, certified by the manufacturer:

- A complete operating manual including technical information of all equipment supplied
- A workshop/maintenance manual containing detailed tolerances required for servicing
- A guide to troubleshooting
- A sectional view of the pump with parts list including the predicted life of parts subject to wear
- Pump performance certificates at the **Motor Rated Speed**

The above data can be submitted in PDF software format.

The pumps shall be adequately packaged and supported during transit to ensure the pumping unit is not subjected to undue damages or stresses.

1.14 Electric Motors

1.14.1 General Requirements

The electric motors required shall be designed, rated and manufactured in accordance with the applicable sections of **IEC 60034-1 34** with specific reference to the following requirements.

Type	:	Squirrel cage
IE Rating	:	IE 3 (Supreme Efficiency)
Operating Speed	:	1500 ± 100 rpm
Pole	:	4
Shaft Direction	:	Bi Directional
Drive Details	:	Motor will be coupled directly to a centrifugal pump.
Mounting	:	IM B3
Power Supply	:	3 phase, 50 Hz ± 5% at 400 V
Rated Output Power	:	At least 110% of maximum pump shaft power required (at any point on the pump H-Q curve) at 50Hz.
Method of Starting	:	Variable Speed Drive

Type of enclosure	:	Minimum IP 55
Insulation	:	Insulation according to class H, but for temperature rise under full load according to class B only.
Duty Cycle	:	Continuous duty, S1 type.
Pump Building	:	Open with natural ventilation with temperature from -10 ⁰ C up to 50 ⁰ C
Operating Altitude	:	1650 masl

Preferred makes : Actom, Siemens, WEG, etc...

1.14.2 Cooling

The motor must be designed for external air-cooling from natural ventilation in an environment whose temperature can range from -10⁰ to 45⁰C. Therefore cooling method is IC 411.

1.14.3 Earthing and Terminal Box

Visible earthing studs must be provided and the earthing terminal must be externally mounted on the motor frame below the terminal box.

The cable terminal box of the motor must be fitted on the right side of the motor when facing the drive-end side of the motor. Cable entry shall be from the bottom.

1.14.4 Factory Tests

The following factory tests shall be carried out in accordance with IEC 34:

- (a) Routine and quality control tests during manufacture.
- (b) Dielectric (Insulation) test
- (c) No-load test
- (d) Full-load, temperature rise and efficiency test.
- (e) Noise level test
- (f) Vibration test.
- (g) Torque speed test.
- (h) Peak torque.

1.14.5 Particular Requirements

a) De-rating

Please note: **derating of motors below 1650 masl is not allowed.**

b) Power Factor

The operating power factor at nominal load shall be as high as possible (close to 0.85) and shall be proven.

c) Efficiency

Efficiencies shall be calculated and all performance figures shall be subjected to tolerances. The efficiency of the machine offered should be not less than 90%, calculated at the duty of power demand (at rated speed) required by the pump offered.

d) Insulation System

The insulation system shall conform to class H insulation requirements including for temperature rise under full load. Particular attention shall be paid to the bracing of stator winding ends in view of the starting method employed.

e) Bearings

Stainless steel roller bearings shall be provided. The bearings shall be grease bearings. The bearing must be able to withstand VSD operation of the motor and thus shall be **insulated bearings**.

The bearings shall be suitable for reverse rotation in case of reverse flow through the pumps.

f) Rotor Balancing

All rotating elements of the motor shall be statically and dynamically balanced. Dynamic imbalance shall not exceed 6.3-mm sec^{-2} as defined by G6.3 in ISO 1940.

Rotor balancing shall be done in order to achieve a reduction of vibration to the lowest possible levels. An improvement on the vibration limits of IEC34-14 is required and the extent of such improvement shall be stated in the Schedule of Technical Particulars and Guarantees.

1.14.6 Supporting Data and Delivery

a) Mounting

The tenderer shall provide for all mounting base-frames in the offer required for the mounting to the pump offered. These items shall be provided with adequate lifting lugs for handling purposes.

b) Transport Pedestal

The motor shall be supplied complete with adapter stool or flange, mounted on a pedestal suitable for the transportation thereof. The bearings, which are installed to transport the motors, shall not be used for operation. These bearings shall be packed in such a condition that it can be transported over a long distance.

c) Rating Plates

The motor shall be provided with durable metal rating plates securely screwed in a ready visible position and clearly marked in accordance with the requirements of IEC34-1 Section 10. These identification labels shall at least, include the:

- Motor make & model
- Best efficiency flow & pressure
- Rate shaft power
- Rated current
- 50 Hz full-load operating speed
- Motor mass
- Serial number

d) Test Certificate

Certificates of tests carried out in accordance with the specification shall be provided before the delivery date of the motor. The test certificate shall include three phase voltage readings, three phase current readings, input power, output power, and temperature readings every 15 min's, for a total period of 4 hours. NamWater shall determine specific motors to be subjected to a heat-run (performance) test according SABS standards. The cost of the test certificate for each motor shall be separate/optional.

e) Drawings

NamWater Ltd shall approve all drawings and detailed specifications of the motor prior to manufacture. Pdf of all manufacturing drawings and detailed specifications of the motor shall be provided to NamWater Ltd before delivery.

f) Manuals

Three copies of maintenance manuals shall be supplied with the motors. These manuals shall contain adequate information regarding routine and major maintenance/replacement/repair procedures, recommended lubricants, permissible operating temperatures and vibration levels at specified points of measurement etc.

1.14.7 Vibration Testing

Additional to the Heat-run test, vibration analysis should also be performed on all the motors to be tested. Vibration should be measured in velocity (mm/s) peak values, on each bearing cap in the horizontal, vertical and axial direction and shall comply with the following levels:

FREQUENCY RANGE	FULL LOAD
OVERALL	2.4 mm/s
1 – 600 CPM	0.5 mm/s
600 – 4800 CPM	2.5 mm/s
4800 – 12000 CPM	2.0 mm/s
12000 – 120 000 CPM	0.5 mm/s

The manufacturer shall supply a test certificate for each motor, the cost of which shall be separate/optional.

1.14.8 Performance Testing

Performance testing is a separate section of this tender and the Tenderers must familiarise themselves with the tests to be executed and accept the procedures and results from the respective testing authorities as well as the liability for any rectification which may arise as a result of the tests. The cost of rectification as well as further testing to prove compliance with the specifications will be for the tenderer's account. Pump and motor performance testing will include full performance testing of both machines as well as vibration testing.

1.14.9 Acceptance Tests

In the event that 50% of the pump and motor sets ordered against this tender fail any test, the tenderer must then test all the units to be delivered at no cost to NamWater Ltd and must provide the test certificates. NamWater Ltd will accept no unit, which fails any test, unless subsequently re-tested and certified as complying with the specification prior to delivery. This provision is additional to those relating to the guarantee period. Payment will only be made for the acceptance tests specified. The cost of any additional tests, which the tenderer may wish to execute, must be included in the unit price of the pump and motors sets.

1.15 Pump/Motor Coupling

The pump/motor coupling shall be suitable for connecting the shaft of the offered motor to the offered pumps at the rated operating speed. The preferred pump/motor coupling is a Fenner Fenaflex tyre coupling for direct coupling.

Description	Technical & Performance Data
Type of prime mover, or driving m/c	AC Electric Motor
Electric motor starting arrangement	VSD
Rotational speed of prime mover	1500 ± 100 rpm
Power rating of prime motor	~ 37kW
Type of coupled machine	Hydraulic Pump
Hours/day duty & start/stop frequency	Class 1 with over 20 hour operation
Coupling Cover	Colour - Light Orange to SABS 1091 No.B26.

1.16 Base Frame

The pump-motor unit shall be suitable for installation on a base frame. The requirements for the base frame are indicated in the table below. **Provision for pump alignment for horizontal movements should be done when designing the base frame.**

The height between the pump main shaft's axis and the bottom of the base frame should be 342mm.

Table 8.1: Summary of Base Frame Dimensions

Description	Technical & Performance Data
Material	Mild Steel
Primer	Two coats of Metal Primer
Colour	Black High Enamel gloss Paint
Lifting Points	Four Points, the pre-assembled unit must not tilt in any direction.

1.17 Pump Laser alignment

The pump-motor unit shall be pre-aligned and the alignment certificates submitted during delivery. The followings are requirement for provision of alignment:

- The motor base frame should include at least four (4) grub screws (Allen key screws) next to the motor mounting screws (bolts) to make provision for the motor's vertical motion during alignment (especially when changing shims). The provision should be at least 10mm vertical movement without shims.
- The motor base's mounting screws (bolts) should be machined to make provision for horizontal plane motion during alignment. The provision should be at least 5mm horizontal linear movement in any direction.
- The pump-motor unit base frame's must have a set of bolt & female threaded steel piece make provision to push the motor on a horizontal plane in all 4 cardinal directions relative to the motor. The provision should be at least 5mm horizontal linear movement in any direction. The provision should be at least 15mm horizontal linear movement in any direction.
- The pump-motor unit base frame' must have at least Four lifting points to unsure no bending (and tilting) of the pre-assembled unit in any direction.

1.18 Inspections

NamWater will inspect all items upon delivery to ascertain if dimensions, pressure flange rating and coating are correct. So NamWater will not send a technical person to go inspect the items at the factory, the onus thus rest with the supplier to ensure that all items are to specifications before delivery is made to NamWater.

Payment will only be made if all the delivered items are to specifications.

1.19 Labelling

The supplier may use the item numbers already allocated or an appropriate method consistent with the order of the items numbers in this document.

1.20 Supporting Literature

A tender will be **disqualified** if the following information/literature is not included with the offer:

- Pump and motor information in SI units
- Pump H-Q curves indicating power requirement
- Pump efficiency curve
- Motor information and curves indicating all relevant information

Delivery will only be deemed complete if NamWater received the following data, certified by the manufacturer:

- A complete operating manual including technical information of all equipment supplied.
- A workshop/maintenance manual containing detailed tolerances required for servicing.
- A sectional view of the pump and motor with parts list.
- Pump and motor performance certificates at the **Motor Rated Speed**.

The above data can be submitted in PDF software format.

Specifications Authorized by:

Name:		Signature:	
Position:		Date:	
Authorized for and on behalf of:		Company	

SECTION V: SPECIFICATIONS AND COMPLIANCE SHEET

Procurement Reference Number: **G/RFQ/NW-081/2024**

Item No	Technical Specification Required	Compliance of Specification or Information Offered	Details of Non-Compliance/ Deviation (if applicable)
<i>A*</i>	<i>B*</i>	<i>C</i>	<i>D</i>
A	General Information		
	Is the assembly mounted on base frame (where applicable) and pre-aligned ?	Yes/No	
	Are extra shims included in the delivery?	Yes/No	
	Name of authorised service agent in Namibia.		N/A
	Warranty Period: 12 months	Yes/No	
	Warranty conditions:		

	Provision made for pump & motor alignment	Yes/No	
	Four lifting points included on the assembly?	Yes/No	
	Is the specifications and compliance sheet fully completed?	Yes/No	
	Are technical supporting literature marked for specific item models where applicable?	Yes/No	
	Are compulsory documents (original where applicable) attached as requested in “ SECTION I: INSTRUCTIONS TO BIDDERS ”?	Yes/No	
B	Lot 1 PUMP SET FOR Omafo - Oshikango PS		
	The pump-motor unit is a long - coupled set with an end - suction centrifugal pump element and a squirrel cage, 4-pole, 50 Hz electric motor.	Yes / No	
	The pump-motor set units shall be suitable for variable speed (frequency) drives (VSD/VFD) start-up an outside environment under a roof with ambient temperatures of up to 45°C and at altitude of 1650 m above sea level.	Yes / No	
	The pump/motor units shall not have a critical vibration speed within the specified operating range.	Yes / No	

	Pump Make & Model	
	Duty pressure head of at least 60mWh at a duty flow of 110m ³ /h.	Yes / No	
	What is the duty flow at a pressure head of 60mWh? m ³ /h	
	Pump efficiency at duty head (above) is at least 60%.	Yes / No	
	The flow ratio (Q/Q _{BEP}) at the duty flow shall be between 70% and 120%.	Yes / No	
	The NPSH required at the duty point shall be no more than 6mWh.	Yes / No	
	Pump suction and discharge shall be DN100 and DN80 respectively	Yes / No	
	The pumps will confirm with testing of ISO 9906 Grade 3B and comply with the tolerance limits as stated in ISO 9906 Grade 3B respectively.	Yes / No	
	Pump shaft, impellers, bolts & nuts and Intermediate chambers are made of Stainless Steel 304/316.	Yes / No	
	Volute Casing, Discharge Cover, Cooling Cover and Bearing Pedestal are made of grey cast iron	Yes / no	
	Impeller vanes continuously welded along the vane length	Yes /No	
	Bearings are grease lubricated	Yes /No	

	Mechanical seal suitable for potable water with a maximum of 2 ppm chlorine content.	Yes / No	
	Coating (except stainless components) - Epoxy	Yes / No	
	Motor Make & Model	
	<u>The motor is de-rated at 1650masl and below.</u>	<u>Yes / No</u>	
	Electric motor designed, rated and manufactured in accordance with SANS 1804-1/2 / IEC 60034-1	Yes / No	
	Power supply - 400 V AC, 3-phase, 50 Hz \pm 5%	Yes / No	
	Motor shaft power rating – At least 110% pump power requirement at any point on the H-Q curve	Yes / No	
	Maximum power on the power curve kW	
	Maximum power on the power curve plus 10% power reserve \leq Motor power rating	Yes / No kW	
	Motor recommended is at least 37kW Minimum motor rating (based on the 10% power reserve on maximum power on the curve)	Yes / No	
	Motor direction of rotation from driver end is bi-direction	Yes / No	

	IE 3 (Supreme Efficiency) Rating Suitable for continuous duty - S1 Type of motor enclosure - minimum IP66 Method of motor cooling - IC 411, totally enclosed fan cooled (TEFC) Method of motor mounting - IM B3, on motor stool, flanged to pump head	Yes / No	
	Class H insulation Class B temperature rise	Yes / No	
	Suitable for continuous full load operation at 45°C and 1650masl.	Yes / No	
	Vibration testing of the pump-sets shall be in accordance with H.I. standards at rated design condition.	Yes / No	
	Provision for vertical and horizontal movements on the motor for alignment purposes	Yes / No	

[Bidders should complete columns C and D with the specification of the goods offered. Also state “comply” or “not comply” and give details of any non-compliance/deviation to the specification required. Attach detailed technical literature if required. Authorise the specification offered in the signature block below.]

All bids shall be accompanied with detailed supporting literature for the valves to enable Namwater to evaluate the conformity to specification and include additional features.

Offers with insufficient details or information will not be considered.

NOTE:

Bids will be disqualified if this information is not included in the tender documents. Only original documentation is acceptable and faxed copies of literature are unacceptable. Information supplied in an electronic format will be accepted if in PDF format on a CD.

Specifications and Compliance Sheet Authorised By:

Name:		Signature:	
Position:		Date:	
Authorised for and on behalf of:	Company		

SECTION VI: GENERAL CONDITIONS OF CONTRACT AND CONTRACT AGREEMENT

Any resulting contract shall be placed by means of a Purchase Order/Letter of Acceptance and shall be subject to the General Conditions of Contract (GCC) for the Procurement of Goods (Ref. **G/RFQ-GCC**) available at Namibia Water Corporation Ltd., physical address, 176 Iscor Street, Aigams Building, Windhoek, except where modified by the Special Conditions below

SECTION VI: CONTRACT AGREEMENT

Any resulting contract shall be placed by means of a Purchase Order/Letter of Acceptance and shall be subject to the General Conditions of Contract (GCC) for the Procurement of Goods except where modified by the Special Conditions below.

SECTION VII: SPECIAL CONDITIONS OF CONTRACT

Procurement Reference Number: **G/RFQ/NW-081/2024**

The clause numbers given in the first column correspond to the relevant clause number of the GCC.

Subject and GCC clause reference	Special Conditions
Site GCC 1.1(m)	The Site/final destination for delivery of the Goods is: NamWater STORES, Windhoek Store
Incoterms Edition GCC 4.2(b)	Incoterms shall be governed by the rules prescribed in Incoterms 2010.
Notices GCC 8.1	Any notice shall be sent to the following addresses: For NamWater Ltd the address and the contact name shall be: Procurement Management Unit (Tel: +264 61 71 2015), E-mail: bids@namwater.com.na Private Bag 13389 Windhoek, Namibia For the Supplier, the address and contact name shall be: _____
Delivery and Documents GCC 13.1	The Goods are to be delivered within 8-10 Weeks from the date of Purchase Order or Letter of Acceptance. The documents to be furnished by the Supplier are: (a) signed delivery note; (b) invoice
Terms of Payment GCC 16.1	The structure of payments shall be: full payment following delivery of the Supplies and submission of an invoice and the documents listed in clause 13.1
Terms of Payment GCC 16.3	Payments shall be made not later than thirty days after submission of an invoice and its certification by the Purchaser. Payment will only be made if all the delivered items are to specifications
Terms of Payment GCC 16.4	The currency of payment shall be the currency of order specified in the List of Goods, Price Schedule and Product details in the Statement of Requirements.
Transportation GCC 25	The Goods shall be delivered: Delivery Duty Paid (DDP)
Inspection and Tests GCC 26.	NamWater will inspect all items upon delivery to ascertain if goods conform to specifications. Payment will only be made if all the delivered items are to specifications.

Subject and GCC clause reference	Special Conditions
Liquidated Damages GCC 27	Liquidated damages for the whole contract are 0.5% per day. The maximum amount of liquidated damages for the whole contract is 10% of the final contract price.
Warranty GCC 28.3	The period of validity of the warranty shall be: as per manufacturer specifications
Repair and Replacement GCC 28.5	The period for repair or replacement shall be : 4 weeks

SCHEDULE 3: QUOTATION CHECKLIST SCHEDULE**Procurement Reference No.: G/RFQ/NW-081/2024**

Description	Attached	Not Attached
List of Goods and Price Schedule		
Specification and Compliance Sheet		
Evidences for conformity of Goods		
Valid company Registration Certificate Copy from Ministry of Trade and Industry		
Original valid good standing Tax Certificate from Inland Revenue		
Original valid good Standing Certificate from Social Security Commission		
Valid Affirmative Action Compliance Certificate, proof from Employment Equity Commissioner that bidder is not a relevant employer, or exemption issued in terms of Section 42 of the Affirmative Action Act, 1998;		
Submit Supporting literature		

Disclaimer: *The list defined above is meant to assist the Bidder in submitting the relevant documents and shall not be a ground for the bidder to justify its non-submission of major documents for its quotation to be responsive. The onus remains on the Bidder to ascertain that it has submitted all the documents that have been requested and are needed for its submission to be complete and responsive.*