Request for Sealed Quotations for the

Supply and Delivery of Pump Sets: End Suction Pump Sets for Omafo – Oshikango PS, Vertical Multistage Pump Sets for Windhoek Airport PS and Vertical Multistage and Submersible Pump Sets for Okondjatu WSS.

Procurement Reference No: G/RFQ/NW-067/2023

Name of Bidder			
Contact Person			
E-mail Address			
Postal Address			
Total Amount (Excl. VAT)			
Lot 1		**Lot 2**	
Lot 3		**Lot 4**	
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: Tuesday, 16 February 2023 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-067/2023

24 January 2022

Dear Sir/Madam

Supply and Delivery of Pump Sets: End Suction Pump Sets for Omafo – Oshikango PS, Vertical Multistage Pump Sets for Windhoek Airport PS and Vertical Multistage and Submersible Pump Sets for Okondjatu WSS.

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) 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 16 weeks** after acceptance/issue of Purchase Order. Deviation in delivery period s*hall 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 to be complete 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, 16 February 2023** 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

(to be completed by Bidders)

[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-067/2023**
Subject matter of Procurement:	**Supply and Delivery of Pump Sets: End Suction Pump Sets for Omafo – Oshikango PS, Vertical Multistage Pump Sets for Windhoek Airport PS and Vertical Multistage and Submersible Pump Sets for Okondjatu WSS.**

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	

Appendix to Quotation Letter

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.*

SECTION III: LIST OF GOODS AND PRICE SCHEDULE

Procurement Ref No: G/RFQ/NW-067/2022

INSTRUCTIONS TO THE PUBLIC BODY				INSTRUCTIONS TO BIDDERS				
Descriptions				Bidders shall fill-in columns F, G & H and fill the total F= Rate per unit G=Total price for one item (C x F) • If an equivalent is quoted, please attach to your quote appropriate technical information & specification • Bidders shall fill in and sign the bottom section of this page				
A	B	C	D	F	G	H	I	
Item no.	Description of Goods	Quantity required	Unit of measures	Price per unit NAD[1]	Total price without VAT NAD	VAT: NAD	Delivery (weeks)	Country of Origin
Lot 1	End Suction Centrifugal Pump with Non-Derated Motor on a Base Frame for Omafo - Oshikango PS – Duty of 110m³/h at 60 mWh	2	Set					
Lot 2	Vertical Multistage Pump with Non-	2	Set					

	Derated Motor on a Base Frame for Windhoek Airport PS – Duty of 41 m³/h at 41 mWh							

Lot 3	Vertical Multistage Pump with Non-Derated Motor on a Base Frame for Okondjatu PS – Duty of 12m3/h at 15 mWh	2	Set					
Lot 4	Submersible Pump with Encapsulated Motor Sets complete with Cables (and Cooling Sleeves if required) for Okondjatu Boreholes.	n/a	n/a	n/a	n/a	n/a	n/a	n/a
4.1	Borehole WW 24723 - 2.5m³/h at 38mWh Pump/Motor Unit c/w 86m long Submersible Cable	1	Set					
4.2	Borehole WW 25302 - 2.5m³/h at 48mWh Pump/Motor Unit c/w 92m long Submersible Cable	1	Set					
4.3	Borehole WW 25303 - 2.5m³/h at 45mWh Pump/Motor Unit c/w 86m long Submersible Cable	1	Set					
4.4	Borehole WW 32249 - 2.0m³/h at 68mWh	1	Set					

	Pump/Motor Unit c/w 110m long Submersible Cable							
Subtotal Of Lot 4								
TOTAL								

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 for Omafo - Oshikango PS, Vertical Multistage for Windhoek Airport PS, and Vertical Multistage and Submersible for Okondjatu 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 (except the submersible pump 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^{o}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 2900 ± 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 5% of pressure head above the primary point:

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

The **pump efficiency** at the primary duty flow shall be no less than **75%**.

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.

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. Grease 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 355mm. 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 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
Method of Starting	:	Variable Speed Drive
Type of enclosure	:	Minimum IP 55

Insulation	:	Insulation according to class F, 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 -10^0C up to 50^0C
Operating Altitude	:	1650 masl

1.14.2 Cooling

The motor must be designed for external air-cooling from natural ventilation in an environment whose temperature can range from -10^0 to 45^0C.

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) 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 F 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.

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 rpm
Power rating of prime mover	~ 34kW
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 vertical and 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 355mm.

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.

LOT 2 – VERTICAL MULTI-STAGE PUMP SETS FOR WINDHOEK AIRPORT PS

1.1 General

Potable water will be pumped from the Windhoek Airport ground reservoir to the Windhoek Airport Tower.

The pump set units will be installed outside under a roof with ambient temperatures of up to 45ºC. The maximum allowable operating altitude of the motors shall be a minimum of 1730m above sea level. The pump set units shall be suitable for direct-on-line (DOL) start-up. The two (2) vertical multistage tower pump-sets for the Windhoek airport Tower Pump station that will operate in 1 duty plus 1 standby.

1.2 Pump

The pump-motor unit shall be a close-coupled vertical multistage centrifugal pump element complete with a squirrel-cage motor, similar to the **Grundfos CR 45-2 Pump Set**. The motor units shall be selected to operate at 50 Hz while operating the pump at 2900 ± 100 rpm.

The pumps shall be of the vertical multistage, centrifugal type with in-line suction and discharge flanges located near the base of the pump.

Each pump will be mounted vertically onto a hot dip galvanized design specific base-frame.

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

1.2.1 Pump Stages and Shaft Sealing

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

1.2.2 Pump Performance & Efficiency

The pump/s 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.

Depending on the performance guarantee acceptance grade, the pump H-Q curve shall pass through or within 5% above the following duty points:

Point 1: **38 m^3/h @ 43 mWh**

Duty: **41 m^3/h @ 41 mWh**

Point 2: **43 m^3/h @ 39 mWh**

The standard factory pump efficiency at the duty point shall be **no less than 65%.** The flow ratio (Q/Q_{BEP}) at the duty flow shall be between 80% and 110%.

The NPSH required at the duty point shall be no more than **4mWh.**

The pumps shall be tested according to either **ISO 9906 Grade 2B** or **ISO 9906 Grade 3B** and comply with the tolerance limits as stated in ISO 9906 Grade 2B or ISO 9906 Grade 3B respectively. Factory test certificates are required for all pumps supplied. The pump tests will include a set of stable readings as confirmation of the flow versus head, power, efficiency and NPSH characteristics. The Manufacturer shall guarantee all performance and efficiency claims.
Offers for units guaranteed to perform within the tolerances prescribed by ISO 9906 Grade 2B shall receive preference over those for units guaranteed to perform within the tolerances prescribed by ISO 9906 Grade 3B.

1.2.3 Materials

The parts indicated shall be constructed of the following materials:

Pump housing (head & base):	Cast Iron
Pump shaft:	Stainless Steel 303/304/316
Bolts & nuts:	Stainless Steel 304/316
Impellers:	Stainless Steel 304/316
Intermediate chambers :	Stainless Steel 304/316

Painting (except stainless parts):		Epoxy Coating
Suction flange drilling	:	SABS 1123 PN10
Discharge flange drilling	:	SABS 1123 PN 10

Sectional drawings (showing component details), dimension sheets and material specifications shall be included as part of the offer.

1.3 Electric Motors

The electric motor required shall be designed, rated and manufactured in accordance with SANS 1804-1/2 / IEC 60034-1 for totally enclosed fan-cooled motors, similar to **Actom and Siemens motors**, with specific reference to the following:

Type:	Squirrel cage, 2-pole
Efficiency Class:	IE3
Duty:	S1
Type of Enclosure:	Minimum IP55
Method of Cooling:	IC 411, totally enclosed fan cooled (TEFC)
Method of Mounting:	IM V1, on motor stool, flanged to pump head
Frame Size:	Motor to fit on pump stool
Power Supply:	400 V AC, 3-phase, 50 Hz ± 5%
Rated Output Power:	At least **115%** of maximum pump shaft power required (at any point on the pump H-Q curve) at 50Hz.
Insulation Class:	Class F
Temperature Rise:	Class B under full load (rated motor output)
Starting Method:	Direct-on-line

The above shall be applicable at 1730m above mean sea level and at 45°C ambient temperature without de-rating.

1.4 Coupling & Coupling Guard

The pump and electric motor shall be direct coupled. All screws, bolts and pins shall be stainless steel 304 (A2).

The pump/motor coupling shall be covered by a standard stainless steel coupling guard complying with the Factories, Machinery and Building Works Regulations.

1.5 Vibration Testing

The supplier will perform vibration testing of the pump-sets 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. Tri-axial readings shall be made at each point of the pump set bearings and the following minimum values will be allowed:

Parameter	**Value**
Overall maximum vibration level	2.4 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 limits will result in the rejection of the units where after the Suppliers shall correct the faults and arrange for further testing at the Supplier's cost.

1.6 Information Plates

Each pump/motor unit shall be fitted with **identification labels as per DIN EN 19** clearly marked with the following minimum information:

- Pump & Motor make & model
- Best Efficiency Point (BEP)
- Operating point
- Power required at operating point
- Operating speed at 50 Hz
- Total weight

1.7 Delivery

The manufacturer shall indicate any special requirements with regard to the handling and installation of the pump-sets. The packing of the units shall be of sufficient quality and design as to protect the equipment against any undue damage or stresses during transportation.

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

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

The above data shall be submitted in PDF format and one hard copy for each unit.

No payment will be made unless all documentation has been received.

LOT 3 PUMP SETS FOR OKONDJATU WSS

1.1 Operation Conditions

Potable water will be pumped from the Okondjatu ground reservoir to Okondjatu tower reservoir. The pump set units will be installed outside under a roof with ambient temperatures of up to 45ºC. The maximum allowable operating altitude of the motors shall be 1650 m above sea level. The pump set units shall be suitable for direct-on-line (DOL) start-up. The two (2) vertical multistage for Okondjatu Pump station will operates in 1 duty and 1 standby configuration.

1.2 Pumps

The pump-motor unit shall be a close-coupled vertical multistage centrifugal pump element complete with a squirrel-cage motor, like the **Grundfos CR 32-4 or Similar**. The motor units shall be selected to operate at 50 Hz while operating the pump at 1425 ± 100 rpm.

The pumps shall be of the vertical multistage, centrifugal type with in-line suction and discharge flanges located near the base of the pump.

Each pump will be mounted vertically onto a hot dip galvanized design specific base-frame.

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

1.2.1 Pump Stages and Shaft Sealing

All impeller and diffuser vanes shall be continuously weld along the full length of the vane.

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.

1.2.2 Pump Performance & Efficiency

The pump/s 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.

Depending on the performance guarantee acceptance grade, the pump H-Q curve shall pass through or within 5% above the following duty points:

Point 1: 10 m^3/h @ 13 mWh

Duty: 12 m^3/h @ 15 mWh

Point 2: 13 m^3/h @ 17 mWh

The standard factory pump efficiency at the duty point shall be **no less than 65%.** The flow ratio (Q/Q_{BEP}) at the duty flow shall be between 80% and 110%.
The NPSH required at the duty point shall be no more than 4mWh.

The pumps shall be tested according to either **ISO 9906 Grade 2B** or **ISO 9906 Grade 3B** and comply with the tolerance limits as stated in ISO 9906 Grade 2B or ISO 9906 Grade 3B respectively. Factory test certificates are required for all pumps supplied. The pump tests will include a set of stable readings as confirmation of the flow versus head, power, efficiency and NPSH characteristics. The Manufacturer shall guarantee all performance and efficiency claims.
Offers for units guaranteed to perform within the tolerances prescribed by ISO 9906 Grade 2B shall receive preference over those for units guaranteed to perform within the tolerances prescribed by ISO 9906 Grade 3B.

1.2.3 Materials

The parts indicated shall be constructed of the following materials:

Pump housing (head & base):		Cast Iron / Stainless Steel
Pump shaft:		Stainless Steel 303/304/316
Bolts & nuts:		Stainless Steel 304/316
Impellers:		Stainless Steel 304/316
Intermediate chambers	:	Stainless Steel 304/316
Painting (except stainless parts):		Epoxy Coating
Suction flange drilling	:	SABS 1123 PN10
Discharge flange drilling	:	SABS 1123 PN 10

Sectional drawings (showing component details), dimension sheets and material specifications shall be included as part of the offer.

1.3 Electric Motors

The electric motor required shall be designed, rated and manufactured in accordance with SANS 1804-1/2 / IEC 60034-1 for totally enclosed fan-cooled motors, like Siemens, **Actom motors or similar**, with specific reference to the following:

Type:	Squirrel cage, 2-pole
Efficiency Class:	IE3
Duty:	S1
Type of Enclosure:	Minimum IP55
Method of Cooling:	IC 411, totally enclosed fan cooled (TEFC)
Method of Mounting:	IM V1, on motor stool, flanged to pump head
Frame Size:	Motor to fit on pump stool
Power Supply:	400 V AC, 3-phase, 50 Hz ± 5%
Rated Output Power:	At least **115%** of maximum pump shaft power required (at any point on the pump H-Q curve) at 50Hz.
Insulation Class:	Class F
Temperature Rise:	Class B under full load (rated motor output)
Starting Method:	Direct-on-line

The above shall be applicable at 1650m above mean sea level and at 45°C ambient temperature without de-rating.

1.3.1 Coupling & Coupling Guard

The pump and electric motor shall be direct coupled. All screws, bolts and pins shall be stainless steel 304 (A2).

The pump/motor coupling shall be covered by a standard stainless steel coupling guard complying with the Factories, Machinery and Building Works Regulations.

1.3.2 Vibration Testing

The supplier will perform vibration testing of the pump-sets 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. Tri-axial readings shall be made at each point of the pump set bearings and the following minimum values will be allowed:

Parameter	**Value**
Overall vibration level	2.4 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 limits will result in the rejection of the units where after the Suppliers shall correct the faults and arrange for further testing at the Supplier's cost.

1.3.3 Information Plates

Each pump/motor unit shall be fitted with **identification labels as per DIN EN 19** clearly marked with the following minimum information:

- Pump & Motor make & model
- Best efficiency point
- Operating point
- Power required at operating point
- Operating speed at 50 Hz
- Total weight

1.4 Delivery

The manufacturer shall indicate any special requirements with regard to the handling and installation of the pump-sets. The packing of the units shall be of sufficient quality and design as to protect the equipment against any undue damage or stresses during transportation.

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

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

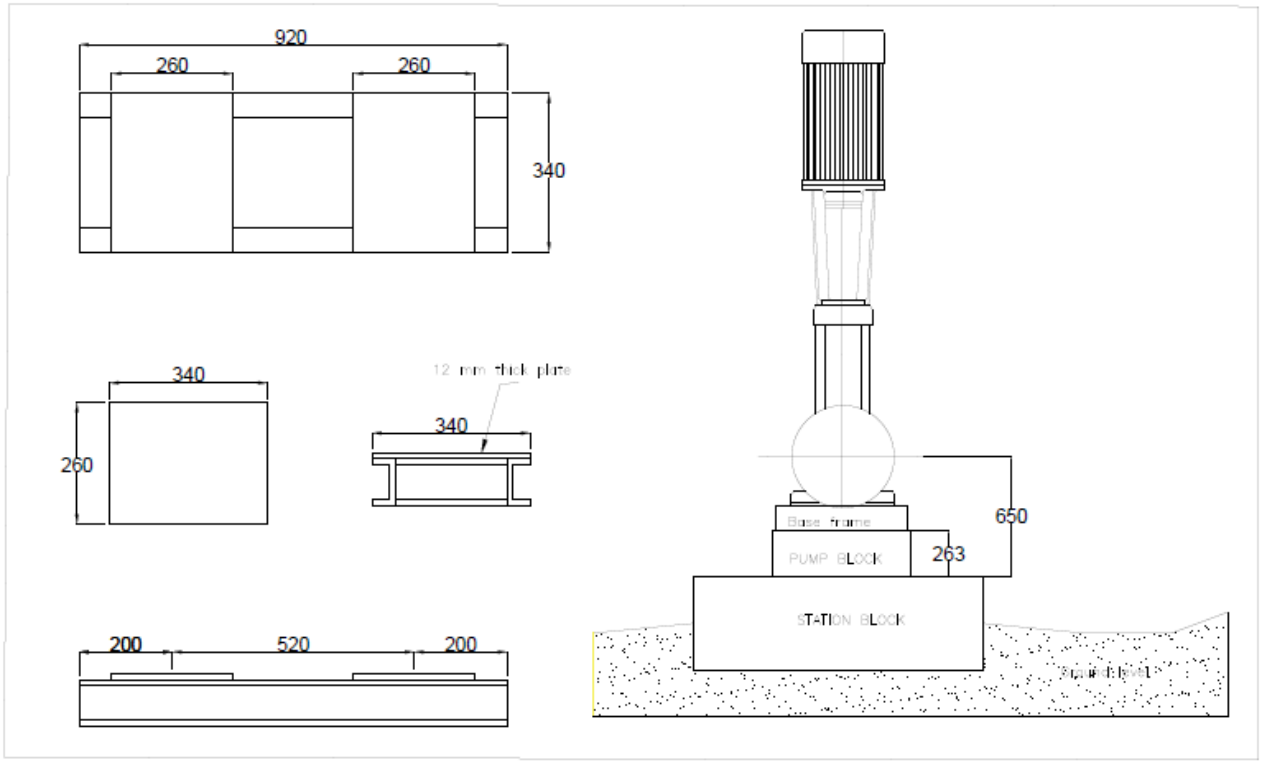
The above data shall be submitted in PDF format and one hard copy for each unit.

No payment will be made unless all documentation has been received.

1.5 Base Frame

Base frames shall be constructed of parallel flange channels. Welding shall be done along all contact seams as per SANS 10044. Partially welded items shall be returned to the manufacturer to complete welding and recoating. The bas plates

All steel shall be painted with two coats of metal primer and two fields coats of black enamel high-gloss paint. See the base frame detailed drawing.


920
260
260
340
340
260
12 mm thick plate
340
200
520
200
Base frame
PUMP BLOCK
263
650
STATION BLOCK

LOT 4 SUBMERSIBLE PUMP SET FOR OKONDJATU BOREHOLES

1.1 General Specifications

Underground water will be abstracted from the boreholes in Okondjatu and pumped to the Okondjatu ground reservoir.

Four (4) Submersible Pump-Motor Sets Complete with Cables (and Cooling Sleeves if required) will installed in for Okondjatu Boreholes.

The submersible pump-motor units shall be stainless steel, close-coupled as a multistage centrifugal pump element complete with a submersible squirrel-cage motor, preferably water filled. The units will be installed in boreholes and connected to a supply pipe network.

The operating speed of the pumps shall be 2900 ± 100 rpm.

Duty point flow rate and head for each pump must be within application range recommended by manufacturer.

NPSH required should be less than **7 mWh**.

The pumps performance testing and acceptance tolerances for flow, total head, efficiency and $NPSH_R$ shall be as per **ISO 9906 Grade 2B**.

NamWater will carry out a pump performance test during commissioning before full operation.

1.2 Pump Unit

1.2.1 Pump Curve Requirements

The specified duty point shall be at maximum pump efficiency (BEP – Best Efficiency Point). The selection of equipment must be done taking in consideration efficiency and standardization where possible.

All pumps shall be fitted with a built-in discharge non-return valve and the pump curves shall be for the pump including the non-return valve.

The Head/Flow-rate curve must pass (a) through or be within 8% above the primary point (Duty point) and (b) below the secondary points (Point 1 and Point 2).

Table 1:

Item No.	Borehole Number	Pump Curve Characteristics					
		Point 1		**Duty Point**		Point 2	
		m^3/h	mWh	**m^3/h**	**mWh**	m^3/h	mWh
1	WW 24723	2	48	**2.5**	**38**	3.0	40
2	WW 25302	2	64	**2.5**	**48**	2.7	54
3	WW 25303	2	65	**2.5**	**45**	2.7	40
4	WW 32249	1.6	90	**2**	**68**	2.4	60

The flow ratio (**Q/QBEP**) at the duty flow shall be between **75% and 105%.**

1.2.2 Pump Dimensions and Construction

The pump discharge connection shall be BSP female threaded.

The pump shall be provided with replaceable impellers and casing wear rings. The impeller vanes shall be continuous welded to the web. **Spot welding will not be acceptable.**

The impellers shall be located on the shaft by means of a positive locking device, e.g. key-ways and spacer/taper sleeves and secured with a locknut; **taper-locks will not be acceptable**.

The pumps will be coupled to flexible drop pipes with male couplings of thread connection as indicated below. The female parallel thread connections are of British Standard Pipe (BSP) parallel designation type.

If the pump discharge connection size is different from the listed size, then an applicable stainless steel reducing bushing (or applicable fittings) should be fitted on the pump discharge!

#	Borehole	Casing Inside Diameter (mm)	Discharge Size Connection: Female BSP Parallel Thread (inch)	Maximum outer diameter of pump and motor (including cable and/or cooling sleeve)
1	WW 24723	150	RP1 1/4	130 mm
2	WW 25302	150	RP1 1/4	130 mm
3	WW 25303	150	RP1 1/4	130 mm
4	WW 32249	206	RP1 1/4	186 mm

1.2.3 Materials of Construction

The parts indicated shall be constructed of the following materials:

Shaft:	Stainless Steel
Bearings:	Stainless Steel/Ceramics
Strainer:	Stainless Steel
Cable Protection Shield:	Stainless Steel
Tie-bolts or Tie-bands:	Stainless Steel
Casing/Bowls:	Stainless Steel
Impellers:	Stainless Steel
Diffusers:	Stainless Steel
Bolts, Nuts and Washers:	Stainless Steel

1.2.4 Information Plates

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

- Pump make & model
- Best efficiency point
- Full impeller diameter
- Installed impeller diameter
- Power required at best efficiency point
- Nominal operating speed

1.3 Submersible Motor

1.3.1 General

All electrical submersible motors shall be suitable for operating from the specified power supply. Motors shall comply in all respects with the relevant parts of BS 4999 and BS 5000, and shall be designed to run at high power factor and efficiency.

The canned submersible motors' (not rewindable), windings will be **enamel wire** (like in standard surface motor), hermitically sealed from surrounding and filled with embedding material in order to withhold the windings and to increase heat transfer.

The motors shall be selected to operate at 50 Hz. The operating speed of the motor shall be 2900 ± 100 rpm.

1.3.2 Motor Specifications

Type:	Squirrel cage
Enclosure Material:	SS 304/SS 316
No of poles:	2-pole
IP Rating:	IP 68
Insulation Class:	Class F minimum
Direction of rotation:	Bi-directional
NEMA Standards:	4” and 6” and 8” motor needs to conform with NEMA Standards
Drive details:	Motor will be coupled directly to the centrifugal pump
Method of starting:	Direct-on-line
Minimum Motor Efficiency:	As per table below

Table A:

Power Rating (kW)	Line Voltage (V)	Minimum Full Load Efficiency
3.7	400	74%
5.5	400	76%
7.5	400	76%

Number of Starts/H:	4 per hour (minimum)
Power supply:	380-415V; 3-Phase
Voltage tolerance lower limit:	380V -10%
Voltage tolerance higher limit:	415 + 6%
Frequency:	50 Hz

Inrush current during start-up (locked rotor): Maximum 6 times the full load

Winding Connection:	Delta
Installation orientation:	Vertical

Maximum motor power deration: 5 +/- 0.5 % power deration at 2% voltage unbalance

Maximum allowable current imbalance : 5%

Voltage unbalance can reduce the service live of the equipment by huge margins. **Bidders shall submit the information, that NamWater can derate the equipment accordingly.**

NOTE: Not submitting the above **Voltage imbalance information** will result in disqualification of offers.

NamWater will include electronic protection units in the MCC's to protect all motors.

The motor shall have a power reserve of at least **10%** at any point of the Head-Flow rate curve of the pump.

The submersible motors shall be filled with water/glycol filled. **Oil filed motor will not be acceptable.**

For the insulation Class specification, the requirements of BS4999 shall be met. The limit of temperature rise shall be for the appropriate Class of insulation quoted. A minimum of Class F insulation shall be provided.

1.3.3 Motor Cooling Sleeves

Water-cooling flow past the electrical motors shall be as per Manufacturer's specifications. **If not**, Bidders should include for the supply of cooling sleeves to be installed with pump sets in order to meet these specifications.

NOTE: The cooling sleeves are optional, but if not offered, Bidders should confirm that the flow past the motor is according to the manufacturer's specifications with the installed casing diameter.

However, if the inside diameter of the casing is too small for the cooling sleeves to fit the borehole casing, Bidders should still confirm whether the flow past the motor is still according to Manufacturer's specifications with the installed borehole casing inside diameter.

See applicable casing inside diameter in the bidding document regarding the pump dimensions, pump discharge sizes and casing diameters.

If offered, the cooling sleeves should be manufactured from the **same material** as the pump sets body and all fastening material should be included.

1.3.4 Motor Dimensions

The motor diameter may exceed pump diameter in order to meet the specifications of this tender or to improve overall pump-motor efficiency, but within the limitation that the maximum diameter of the motor, including the power cable shall not exceed a maximum diameter as specified in **6. PUMP UNIT**, paragraph **b)**. **It is preferred that the pump and motor is of the same diameter.**

1.3.5 Motor Shaft Seal and Bearings

The shaft seals for the motor shall be Silicon Carbide.

The thrust bearings shall be water lubricated Michel-type bearings.

The radial bearings shall be graphite type.

1.3.6 Information Plates

The motor shall be fitted with durable metal plate clearly marked with the following minimum information:

- Motor make & model
- Best efficiency point
- Amp ratings
- Voltage
- Cos ¬
- Bearing specifications
- Total weight

1.4 Submersible Cable

Each pump unit shall be fitted and supplied with a factory fitted lead-out cable of at least **0.5 meters** above pump discharge. An additional length of cable as indicated in the table below, shall be supplied as a 4-core, cylindrical type submersible motor cable adequately sized for direct-on-line starting and continuous duties complete with termination kits.

#	Borehole Number	Pump Installation Depth (m)	Cable Length (m)
1	WW 24723	76	86
2	WW 25302	82	92
3	WW 25303	76	86
4	WW 32249	100	110

A maximum voltage drop of 2.5% will be allowed at full load current and 15% at start-up.

The following values and formulas will be used to calculate the minimum size of the submersible cable:

$\Delta V = 1,73*I*L*t*R/1000$

I – Full load current, L – Cable length (meter), R – Conductor resistance at 45°C (Ohm/km) and t – Temperature correction factor, use t=1,12

1.5 9. 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.

1.6 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.

1.7 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-067/2023**

Item No	Technical Specification Required	Compliance of Specification or Information Offered	Details of Non-Compliance/ Deviation (if applicable)
A*	***B****	***C***	***D***
1	**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	
	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	
2	**LOT 1 PUMP SET FOR OMAFO - OSHIKANGO PS**		
	The pump-motor unit is a close-coupled set with a vertical multistage 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 45oC 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 75%.	Yes / No	
	The flow ratio (Q/Q_{BEP}) at the duty flow shall be between 80% and 110%.	Yes / No	
	The NPSH required at the duty point shall be no more than 4mWh.	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 ± 5%	Yes / No	
	Motor shaft power rating – At least 115% pump power requirement at any point on the H-Q curve	Yes / No	
	Maximum power on the power curve	…… kW	
	Motor shaft power rating	…… kW	
	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 F 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	
3	**LOT 2 PUMP SET FOR WINDHOEK AIRPORT PS**		
	The pump-motor unit is a close-coupled set with a vertical multistage centrifugal pump element and a squirrel cage, 2-pole, 50 Hz electric motor.	Yes / No	
	The pump-motor set units shall be suitable for direct-on-line (DOL) start-up an outside environment under a roof with ambient temperatures of up to 45oC and at altitude of 1730 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 **42mWh at a duty flow of 42m^3/h**.	Yes / No	
	What is the duty flow at a pressure head of **42mWh?**	…….. m^3/h	
	Pump efficiency at duty head (above) is at least 65%.	Yes / No	
	The flow ratio (Q/Q_{BEP}) at the duty flow shall be between 80% and 110%.	Yes / No	
	The NPSH required at the duty point shall be no more than 4mWh.	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	
	Impeller vanes continuously welded along the vane length	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 1730masl 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 ± 5%	Yes / No	
	Motor shaft power rating – At least 115% pump power requirement at any point on the H-Q curve	Yes / No	
	Maximum power on the power curve	…… kW	
	Motor shaft power rating	…… kW	
	Motor direction of rotation from driver end is bi-direction	Yes / No	
	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 V1, on motor stool, flanged to pump head	Yes / No	
	Class F insulation Class B temperature rise	Yes / No	
	Suitable for continuous full load operation at 45°C and 1730m a.s.l.	**Yes / No**	

	Vibration testing of the pump-sets shall be in accordance with H.I. standards at rated design condition.	Yes / No	
4	**LOT 3 PUMP SET FOR OKONDJATU PUMP STATION**		
	The pump-motor unit is a close-coupled set with a vertical multistage centrifugal pump element and a squirrel cage, 2-pole, 50 Hz electric motor.	Yes / No	
	The pump-motor set units shall be suitable for direct-on-line (DOL) start-up an outside environment under a roof with ambient temperatures of up to 45oC 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 **15mWh at a duty flow of 12m^3/h**.	Yes / No	
	What is the duty flow at a pressure head of **15mWh?**	…….. m^3/h	
	Pump efficiency at duty head (above) is at least 65%.	Yes / No	
	The flow ratio (Q/Q_{BEP}) at the duty flow shall be between 80% and 110%.	Yes / No	

	The NPSH required at the duty point shall be no more than 4mWh.	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	
	Impeller vanes continuously welded along the vane length	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		
	The motor is de-rated at 1730masl and below.	**Yes / No**	
	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 ± 5%	Yes / No	
	Motor shaft power rating – At least 115% pump power requirement at any point on the H-Q curve	Yes / No	
	Maximum power on the power curve	…… kW	
	Motor shaft power rating	…… kW	

	Motor direction of rotation from driver end is bi-direction	Yes / No	
	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 V1, on motor stool, flanged to pump head	Yes / No	
	Class F insulation Class B temperature rise	Yes / No	
	Suitable for continuous full load operation at 45°C and 1650m a.s.l.	**Yes / No**	
	Vibration testing of the pump-sets shall be in accordance with H.I. standards at rated design condition.	Yes / No	
5	**LOT 4 SUBMERSIBLE PUMP SET FOR OKONDJATU BOREHOLES**		
5.0	**General (Apply to all units)**		
	<u>Pump</u>		
	Pump Operating speed is 2900 ± 100 rpm.	Yes / No	
	Pump Discharge Size Female BSP is RP1-1/4 (	Yes / No	

	Performance testing and Performance tolerance acceptance for flow, total head and efficiency at duty flows according to standard ISO 9906 Gr. 2B	Yes / No	
	The impellers shall be located on the shaft by means of a positive locking device, e.g. key-ways and spacer/taper sleeves and secured with a locknut; taper-locks will not be acceptable.	Yes / No	
	The impeller vanes shall be continuous welded to the web.	Yes / No	
	Non-return valve fitted. Pump curve is specified with non-return valve fitted	Yes / No	
	Shaft, Bearings, Suction grid, Cable protection shield, Tie-bolts or Tie-bands, Casing/Bowls, Diffusers, Wear ring, Bolts, nuts & washers are made of stainless steel or equivalent material.	Yes / No	
	Motor		
	Canned submersible motors' (not rewindable).	Yes / No	
	At least, Class F insulation or superior and minimum of four (4) starts per hour required.	Yes / No	

	Motor enclosure standard is NEMA (National Electrical Manufacturers Association).	Yes / No	
	Inrush current, input surge current, or switch-on surge (during start-up) is at most 6 times the normal load current.	Yes / No	
	Delta Winding connection type	Yes / No	
	Maximum **5 ±0.5%** power deration at 2% voltage imbalance	Yes / No	
	Maximum of **5%** allowable current imbalance	Yes / No	
	Voltage imbalance information included for each unit	Yes / No	
	Shaft seal for motor material is **Silicon Carbide**	Yes / No	
	Thrust bearing cooling is by water cooling	Yes / No	
	Radial bearing material is of graphite type	Yes / No	
	Ingress Protection Code is IP 68 or better Rating.	Yes / No	
	Motor Rated speed is 2900rpm and Operating Voltage is 400V	Yes / No	
	Method of starting is direct-on-line	Yes / No	
	Motor power reserve (%) at any point of the Head-Flow curve of the pump is at least 10%.	Yes / No	

	Lower limit of **380V -10%** voltage tolerance at 50Hz	Yes / No	
	Higher limit of **415V +6%** voltage tolerance at 50Hz	Yes / No	
	Voltage unbalance de-rating charts submitted	Yes / No	
	Is the motor water/glycol filled?	Yes / No	
	Does the lead-out cable and submersible cable contain the earth?	Yes / No	
	If not, is a stud provided?	Yes or N/A	
5.1	**WW24723**		
	Make and Model of Pump		**N/A**
	Flow rate @ 38 mWh is **2.5 to 3.0 m^3/h**.	Yes / No	
	Head @ 2.**5 m^3/h is 38 to 44 mWh.**	Yes / No	
	Pump efficiency at duty point is **at least 53%.**	Yes / No	
	Duty flow ratio (Q/Q_{BEP}) is **75% - 105%.**	Yes / No	
	Make and Model of the motor		
	Minimum motor efficiency **as specified** for motor rated output power [shaft power] (**See PART 2 – Supply Requirements**)	**Specify power ……..…… kW and efficiency …….%**	**N/A**
	Motor rated output power [shaft power]		
	Rated current at 400 V [Ampere]		**N/A**

	Motor efficiency @ full load [%]	**As per requirement: …… Specify.**	
	Motor efficiency @ 75% load [%]		N/A
	Motor efficiency @ 50% load [%]		N/A
	Full load current [Ampere]		N/A
	Power factor at full load []		N/A
	Minimum cooling flow velocity past the motor [m/s]		N/A
	Actual calculated cooling flow velocity past the motor with installed borehole casing [m/s]		N/A
	Is cooling sleeve required?	**Yes/No**	
	Cooling sleeve material is **Stainless Steel (if required)**	Yes / No	
	Maximum diameter of pump/motor unit without cooling sleeve is **at most 130mm**	Yes/No	
	Weight of pump/motor unit [kg]		**N/A**
	Total length of submersible cable **is at least 86m.**	Yes / No	
	Size of submersible cable [mm^2]		**N/A**
	Calculated voltage drop for submersible cable @ full load current of motor		**N/A**
5.2	**WW25302**		
	Make and Model of Pump		**N/A**

	Flow rate @ 48 mWh is **2.5 to 3.2 m^3/h**.	Yes / No	
	Head @ 2.**5 m^3/h is 48 to 69 mWh.**	Yes / No	
	Pump efficiency at duty point is **at least 53%.**	Yes / No	
	Duty flow ratio (Q/Q_{BEP}) is **75% - 105%.**	Yes / No	
	Make and Model of the motor		
	Minimum motor efficiency **as specified** for motor rated output power [shaft power] (**See PART 2 – Supply Requirements**)	**Specify power ……..…… kW and efficiency …….%**	**N/A**
	Motor rated output power [shaft power]		
	Rated current at 400 V [Ampere]		**N/A**
	Motor efficiency @ full load [%]	**As per requirement: …… Specify.**	
	Motor efficiency @ 75% load [%]		N/A
	Motor efficiency @ 50% load [%]		N/A
	Full load current [Ampere]		N/A
	Power factor at full load []		N/A
	Minimum cooling flow velocity past the motor [m/s]		
	Actual calculated cooling flow velocity past the motor with installed borehole casing [m/s]		
	Is cooling sleeve required?	**Yes/No**	

	Cooling sleeve material is **Stainless Steel (if required)**	Yes / No	
	Maximum diameter of pump/motor unit without cooling sleev**e is at most 130mm**	Yes/No	
	Weight of pump/motor unit [kg]		**N/A**
	Total length of submersible cable **is at least 92m.**	Yes / No	
	Size of submersible cable [mm^2]		**N/A**
	Calculated voltage drop for submersible cable @ full load current of motor		**N/A**
5.3	**WW25303**		
	Make and Model of Pump		**N/A**
	Flow rate @ 48 mWh is **2.5 to 3.0 m^3/h**.	Yes / No	
	Head @ **2.5 m^3/h is 38 to 44 mWh.**	Yes / No	
	Pump efficiency at duty point is **at least 55%.**	Yes / No	
	Duty flow ratio (Q/Q_{BEP}) is **75% - 105%.**	Yes / No	
	Make and Model of the motor		
	Minimum motor efficiency **as specified** for motor rated output power [shaft power] (**See PART 2 – Supply Requirements**)	**Specify power ……..…… kW and efficiency …….%**	**N/A**

	Motor rated output power [shaft power]		
	Rated current at 400 V [Ampere]		**N/A**
	Motor efficiency @ full load [%]	**As per requirement: …… Specify.**	
	Motor efficiency @ 75% load [%]		N/A
	Motor efficiency @ 50% load [%]		N/A
	Full load current [Ampere]		N/A
	Power factor at full load []		N/A
	Minimum cooling flow velocity past the motor [m/s]		
	Actual calculated cooling flow velocity past the motor with installed borehole casing [m/s]		
	Is cooling sleeve required?	**Yes/No**	
	Cooling sleeve material is **Stainless Steel (if required)**	Yes / No	
	Maximum diameter of pump/motor unit without cooling sleeve **is at most 130mm**	Yes/No	
	Weight of pump/motor unit [kg]		**N/A**
	Total length of submersible cable **is at least 86m.**	Yes / No	
	Size of submersible cable [mm^2]		**N/A**
	Calculated voltage drop for submersible cable @ full load current of motor		**N/A**

5.4	**WW32249**		
	Make and Model of Pump		**N/A**
	Flow rate @ 48 mWh is 2 to 2.5 m^3/h.	Yes / No	
	Head @ 2.5 m^3/h is 68 to 74 mWh.	Yes / No	
	Pump efficiency at duty point is **at least 47%.**	Yes / No	
	Duty flow ratio (Q/Q_{BEP}) is **75% - 105%.**	Yes / No	
	Make and Model of the motor		
	Minimum motor efficiency **as specified** for motor rated output power [shaft power] (**See PART 2 – Supply Requirements**)	**Specify power ……..…… kW and efficiency …….%**	**N/A**
	Motor rated output power [shaft power]		
	Rated current at 400 V [Ampere]		**N/A**
	Motor efficiency @ full load [%]	**As per requirement: …… Specify.**	
	Motor efficiency @ 75% load [%]		N/A
	Motor efficiency @ 50% load [%]		N/A
	Full load current [Ampere]		N/A
	Power factor at full load []		N/A
	Minimum cooling flow velocity past the motor [m/s]		N/A

	Actual calculated cooling flow velocity past the motor with installed borehole casing [m/s]		N/A
	Is cooling sleeve required?	**Yes/No**	
	Cooling sleeve material is **Stainless Steel (if required)**	Yes / No	
	Maximum diameter of pump/motor unit without cooling sleeve **is at most 186mm**	Yes/No	
	Weight of pump/motor unit [kg]		**N/A**
	Total length of submersible cable is **at least 100m.**	Yes / No	
	Size of submersible cable [mm^2]		**N/A**
	Calculated voltage drop for submersible cable @ full load current of motor		**N/A**

[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-067/2023**

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 **8-16 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

Subject and GCC clause reference	Special Conditions
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.
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-067/2023

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;		

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.*