



Request for Quotations For Goods

**Supply and Delivery of two (2) Close-Coupled End-Suction Volute
Casing Pump-sets c/w Base Frames and two (2) 11kW Variable Speed
Drives for the Noordoewer Raw water abstraction**

Procurement Reference No: G/RFQ/NW-024/2027

Name of Bidder		
Contact Person		
E-mail Address		
Postal Address		
Total Amount (Excl. VAT)	LOT 1:	LOT 2:
Contact Phone number	Work:	Mobile:

The Quotation/Bid Box

Att: Procurement Management Unit (+264 61 71 2009, bids@namwater.com.na)

Namibia Water Corporation Ltd.

Private Bag 13389

176 Iscor Street, Aigams Building

Windhoek

**Closing Date: Thursday, 23 July 2026 at 11h00
NO LATE BIDS WILL BE ACCEPTED!**

Namibia Water Corporation Ltd.
Private Bag 13389, Windhoek, Namibia
Tel: +264 61 71 2081
Fax: +264 61 21 0741

Letter of Invitation

Name and Address of Bidder _____

Procurement Reference Number: G/RFQ/NW-024/2027

13 July 2026

Dear Bidder,

Supply and Delivery of two (2) Close-Coupled End-Suction Volute Casing Pump-sets c/w Base Frames and two (2) 11kW Variable Speed Drives for the Noordoewer Raw water abstraction

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 quotation 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

The NamWater Ltd reserves the right:

- (a) to split the contract as per the lowest evaluated cost per item, or
- (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 with its annex for Bid Securing Declaration;
- (b) the List of Goods and Price Schedule Section III;
- (c) the Specifications and Compliance Sheet in Section V; and
- (d) Supporting information/literature requested under Section IV, number 8

You are advised to carefully read the complete Request for Sealed Quotations 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 **120** days from the date of submission deadline.

4. Eligibility Criteria

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

- (a) Have a certified copy (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)), of a valid company Registration Document;;
- (b) Have an original or a certified copy (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)), of a valid Good Standing Tax Certificate, as certified by the Commissioner of Oath;
- (c) have an original valid good Standing Social Security Certificate;
- (d) Have a valid certified copy (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)), of 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 or a valid certified copy of the original document, as certified by the Commissioner of Oath; (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;
- (g) Submit Supporting information/literature to substantiate compliance. These documents must be from the manufacturer or an authorized manufacturer's representative of the offered goods. Representatives must provide an authorization letter from the manufacturer confirming their status.
- (h) A Bidder that is under a declaration of ineligibility by the Government of Namibia in accordance with applicable laws at the date of the deadline for bid submission or thereafter, shall be disqualified. Bids from service providers appearing on the ineligibility lists of African Development Bank, Asian Development Bank, European Bank for Reconstruction and Development, Inter-American Development Bank Group and World Bank Group shall be rejected. Links for checking the ineligibility lists are available at: • Republic of Namibia, Procurement Policy Unit <https://egp2.gov.na/forms/SearchSuspendedBidders.jsf> • African Development Bank <https://www.afdb.org/en/projects-operations/debarment-and-sanctions-procedures> • Asian Development Bank <http://lnadbg4.adb.org/oga0009p.nsf/sancALLPublic?OpenView&count=999> • European Bank for Reconstruction and Development <http://www.ebrd.com/pages/about/integrity/list.shtml> • Inter-American Development Bank Group <http://www.iadb.org/en/topics/transparency/integrity-at-the-idb-group/sanctioned-firms-and-individuals,1293.html> • World Bank Group <http://www.worldbank.org/en/projects-operations/procurement/debarred-firms>

5. Bid Securing Declaration

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

6. Delivery

Delivery shall be to a maximum of **5 weeks** after acceptance/issue of Purchase Order. Deviation in delivery period **shall not be accepted**.

7. Sealing and Marking of Quotations

Quotations should be sealed in a single envelope, clearly marked with the Procurement Reference Number, addressed to NamWater Ltd 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 23 July 2026 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

Quotations received by e-mail will not be considered.

9. Opening of Quotations

Quotations will be opened internally by NamWater Ltd 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 Securing Declaration, will be posted on the website of NamWater Ltd 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.

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 Public Entity'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 unless otherwise stated.

12. Prices and Currency of Payment

Prices shall be fixed in Namibian Dollars.

13. Margin of Preference

14. The applicable margins of preference and their application methodology are as follows:

Not applicable Award of Contract

The Bidder having submitted the lowest evaluated responsive quotation and qualified to supply the goods/items and related services of each Lot shall be selected for award of contract. Partial award of differing Lots is thus allowed. 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.

15. Notification of Award and Debriefing

NamWater Ltd 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 (7) days. Furthermore, NamWater Ltd shall end to all requests for debriefing made in writing within seven (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-024/2027
Subject matter of Procurement:	Supply and Delivery of two (2) Close-Coupled End-Suction Volute Casing Pump-sets c/w Base Frames and two (2) 11kW Variable Speed Drives for the Noordoewer Raw water abstraction

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.*

Manufacturer's Authorization

[The Bidder shall require the Manufacturer to fill in this Form in accordance with the instructions indicated. This letter of authorization should be on the letterhead of the Manufacturer and should be signed by a person with the proper authority to sign documents that are binding on the Manufacturer. The Bidder shall include it in its bid, if so indicated in the BDS.]

Date: *[insert date (as day, month and year) of Bid Submission]*

Procurement Ref. No.: *[insert number of bidding process]*

Alternative No.: *[insert identification No if this is a Bid for an alternative]*

To: *[insert complete name of Purchaser]*

WHEREAS

We *[insert complete name of Manufacturer]*, who are official manufacturers of *[insert type of goods manufactured]*, having factories at *[insert full address of Manufacturer's factories]*, do hereby authorize *[insert complete name of Bidder]* to submit a bid the purpose of which is to provide the following Goods, manufactured by us *[insert name and or brief description of the Goods]*, and to subsequently negotiate and sign the Contract.

We hereby extend our full guarantee and warranty in accordance with Clause 28 of the General Conditions of Contract, with respect to the Goods offered by the above firm. We furthermore confirm that the above firm is authorized to provide after-sales services and conduct repairs under warrantee without voiding such warrantee.

Signed: *[insert signature(s) of authorized representative(s) of the Manufacturer]*

Name: *[insert complete name(s) of authorized representative(s) of the Manufacturer]*

Title: *[insert title]*

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

SECTION III: LIST OF GOODS AND PRICE SCHEDULE

QUOTATION FOR: *[to be completed by Public Entity]*.....

Procurement Ref No.

INSTRUCTIONS TO THE PUBLIC BODY					INSTRUCTIONS TO BIDDERS					
At time of preparation of the RFQ, Columns A to I shall be filled in by the Public Entity. [To be filled by the Public Entity]					<u>Bidders shall fill-in columns F, G & H and fill the total</u> E= mark with a *if an equivalent is quoted 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	E	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) (days/month)	Country of Origin	
LOT 1										
1.	Close-Coupled End-Suction Volute Casing Pump-sets	2	Each							
2.	Base frame	2	Each							
					TOTAL					
LOT 2										
1.	11kW Variable Speed Drive (VSD)	2								
					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 LOT 1

4.1 GENERAL

This RFQ calls for the supply and delivery of two (2) close-coupled end-suction volute casing pump-sets c/w base frames.

4.2 OPERATION CONDITIONS

The pump set units will be installed inside a building. Ambient temperatures of up to 40°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-Drive (VSD) start-up and operation.

The Pump set will be installed for application of pumping raw water from a canal. There will be no fibrous material suspended in the pumping medium.

4.3 PUMPS

The pump/motor units shall be close-coupled end-suction volute casing pumps and suitable for Horizontal installation.

4.3.1 Shaft Sealing

Shaft sealing on pump shall be by means of a high-quality mechanical seal suitable for raw water.

4.3.2 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 bidder to submit this information.

The pump H-Q curve, at reduced speed if applicable, shall pass through the following duty point:

35m³/h @ 34mWh

The standard factory pump efficiency at the duty point shall be no less than 60%. The flow ratio (Q/Q_{BEP}) at the duty flow shall be between 80% and 105%.

The NPSH required at the duty point shall be no more than 5mWh.

The pump shall have a free passage of at least **8.5mm**

The Maximum Shaft Power required at **50Hz** shall be **6.5kW**

Motor Synchronous Speed Requirements:

The provided motor options shall be compatible with both 2-pole and 4-pole configurations.

At the standard rated grid frequency of 50 Hz, the motors must achieve the following theoretical synchronous speeds:

- 2-Pole Option: 3000 RPM.
- 4-Pole Option: 1500 RPM.

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 Supplier shall accept an in-situ pump performance test which will be conducted during commissioning. Failure of a pump to meet the performance requirements within the tolerance limits of the relevant ISO 9906 performance test grade shall result in the rejection of the relevant pump, where after the Supplier shall correct the faults at the Supplier's cost.

4.3.3 Materials

The parts indicated shall be constructed of the following materials:

Volute casing	: Cast iron
Pump shaft	: Carbon iron
Shaft Sleeve	: Stainless Steel 304/316
Impellers	: Stainless Steel 304/316
Painting (except stainless parts)	: Internal -Belzona Coating External – pump OEM recommended coating
Suction flange	: SABS 1123
Discharge flange	: SABS 1123

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

Corrosion Protection

All steel surfaces shall be blast clean to SABS 064 and the final finishing shall

comply with S.I.S. 05 5900 grade Sa 2.5. before coating or as prescribed by the coating manufacturer.

The The pumps shall be internally coated with either **Belzona® 3141** or **Carboline® Carbogaurd® 550** as per product data sheets. Alternative coatings may be proposed for consideration. NamWater, however, reserves the right to order that the above coatings be applied.

The pumps shall be externally coated with the **pump OEM recommended coating**. The colour of the external topcoat shall be specified by NamWater after award. Stainless steel or bronze components may be left uncoated as required.

4.4 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, with specific reference to the following:

Type:	Squirrel cage, 2-pole or 4-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:	400V $\pm$ 10% AC, 3-phase, 50Hz $\pm$ 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:	Variable-Speed-Drive

The None Drive End (NDE) bearings shall be insulated and suitable for VSD operations

The above shall be applicable at **1650m above mean sea level and at 40°C ambient temperature without de-rating**.

The pump shall be fitted with a motor with a power rating of not greater than a **10kw**.

4.5 COUPLING & COUPLING GUARD

The pump and electric motor shall be direct coupled.

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

4.6 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
- Operating point
- Maximum power required
- Operating speed at 50 Hz
- Total weight

4.7 BASE FRAMES

The pumps will be mounted Horizontally onto a hot dip galvanized design specific base frame, with the pumps suction ports centreline 245mm $\pm$ 5mm from the bottom of the base frame. The lower section of each base frame shall be drilled with Six (6) Ø18 mm holes, three (3) on either side of the base frame, with one exactly at the centre and the other two (2) 50mm from the edge on both opposite ends of the base frame. The holes shall be suitable for M16 chemical anchor studs.

All welding shall be done in accordance with SANS 10044 for steel fusion welding. Mating surfaces shall be continuously welded all around their mating periphery.

All welding and fabrication shall be done prior to galvanizing.

All steel surfaces shall be blast clean to SABS 064 and the final finishing shall comply with S.I.S. 05 5900 grade Sa 2.5. before galvanizing.

The base frame shall be hot dip galvanized to SABS ISO 1461:1999. The average galvanizing layer thickness shall furthermore not be less than 150 micron and the minimum thickness at any spot not less than 100 micron.

LOT 2

5.1. GENERAL

This RFQ calls for the supply and delivery of two (2) variable speed drives will be used to drive **11kW** squirrel cage induction motors (variable torque applications), which in turn will drive centrifugal pumps.

All variable speed drives shall be wall mounted inside the control room area.

Please note:

Evaluation on the drive offers will be on efficiency and reflected power factor. Low efficiency drives will be penalized on the cost of kWh/MD used (20 hours operation, 365 days of the year, at 80% load, and the maximum demand charge). The period of evaluation will be 15 years. The cost of kWh and MD charge that will be used is the current tariff structure of NamPower.

5.2. PERFORMANCE REQUIREMENTS

The The drive shall be of the type suitable for controlling the speed of 3-phase, 400 V induction motors rated at 11kW.

The drive shall be capable of continuous operation at full load in an ambient temperature of 45 °C.

The drive shall be of the open chassis type and shall be mounted inside the main switchboard (This shall be done by the contractor who will build the switchboard). An IP 21 rating are required.

Drives shall have metal enclosures to prevent the radiated radio frequency interference noise (RFI) from affecting the operation of other equipment. The metal enclosures must be earthed with a low impedance connection to the switchboard's earthing system.

The drive shall be manufactured to quality assurance and manufacturing standards according to ISO-9001.

The VSD shall be capable of continuous duty at full rating (i.e. 24 hours/day, 365 days/annum). The VSD shall operate indoors but under damp and dusty conditions.

The VSD shall be capable of operation without damage under the following power supply distortions:

- Total interruption and restoration after 2 seconds
- Loss of one phase and restoration after 2 seconds
- Supply voltage total harmonic distortion 3% with individual harmonic distortion of 1%.

5.3. PERFORMANCE

The drive shall be specifically designed for variable torque operation but shall also incorporate a choice of pre-set starting speed torque curves to give the converter flexibility over a wide application area.

The input voltage to the drive will be between 380 – 460Vac, with a tolerance of –15 % to +10%.

The drive shall be used for variable torque applications.

The drive shall be capable of supplying 120% of rated current for 1 minute.

The control mode shall be V/F (Voltage/Frequency), and the drive shall be of the type utilising advanced digital PWM (Pulse Width Modulation) technology with microprocessor-based control. IGBT (Isolated Gate Bipolar Transistors) technology should be utilized on the output bridge. It would be preferred that the output waveform is sinusoidal at all frequencies, such that the motor power is fully utilised at the motor's rated speed, and no motor de-rating is necessary.

The drive shall automatically correct the output voltage to the pre-set voltage level (ex. 400Vac) during main's voltage variations of +10% and -15% to prevent loss of torque and speed variations occurring during motor operation.

To prevent over-magnetisation of the motor at low speeds and light loads the drive shall incorporate automatic flux control of the motor

The drive shall automatically adjust the output frequency and voltage to maintain a stable motor speed of $\pm 3\%$ of the motor's pre-set speed. The accuracy shall be maintained over a speed and loading range of 10% to 100% without the use of a closed feedback loop.

The drive shall be fitted with an energy saving function whereby the inverter calculates the voltage at which motor efficiency will be the greatest and sets it as the output voltage.

The drive shall be programmed for automatic restart in the case of temporary power loss.

The drive shall be suitable for control of high inertia loads and be able to catch a rotating motor under any operating condition without tripping, e.g. whether through large supply interruptions or by the action of switching on and off the motor isolating switch when the motor is running.

The function shall also ensure that a motor on a high inertia load already pre-rotating, even in the reverse direction, can be switched onto, braked to zero speed by DC injection braking incorporated in the drive, and then accelerated to the pre-set speed in the correct direction.

The drive shall incorporate a PID regulator to enable closed-loop control of the process.

5.4. REQUIREMENTS

5.4.1 Digital Technology

The use of potentiometers for set up and calibration is not acceptable and equipment using these techniques will not be considered.

The drive will be fitted with a removable keypad to be flush-mounted on the front panel of the Variable Speed Drive cubicle.

5.4.2 Radio Frequency Interference

Suppliers are reminded that the plant contains equipment sensitive to RFI interference (such as PLCs and Computers). Full compliance to the standards is requested. The drive should be well protected and immune to electrical disturbance in order to ensure high reliability.

5.4.3 Separate RFI Filters

The separate RFI filters shall be mounted in metal enclosures with the same protection rating as the drive, and shall be located as close to the mains connection terminals of the drive as possible.

Ferrite cores mounted on the input cables will not be considered as RFI compliant.

5.4.4 Harmonic Distortion and Power Factor

Suppliers are reminded that the plant contains a high portion of harmonic producing loads.

Mains Harmonic currents generated by the converter must be limited by external mains reactors or reactors in the DC bus of the drive. Drives that include reactors in the DC bus circuit are preferred.

VSD's that do not include a reactor mounted in the DC bus shall be supplied with external three phase reactors connected on the mains side of the drive. The reactors shall be fitted to each phase and shall have a minimum voltage impedance of 5%.

5.5. MONITORING AND CONTROL

5.5.1 The Software Interface

The VSD shall be provided with an **Modbus TCP** interface facility. Full controls of the VSD shall be possible via this interface and shall include:

- Stop/start command
- Speed setting
- Drive output voltage, current, frequency, torque, kW, Running Hours, DC Link Voltage, last trip and drive temperature
- Diagnostic facility to monitor all-important above parameters with trip and alarm history records.

The Modbus TCP interface shall permit full control of the VSD without the use of external contact closing etc. Faults shall, however, be provided for by a hard-wired stop command.

5.5.2 Frequency Control

The VSD shall supply an output frequency in the range 10Hz to 75Hz. In the range 10 to 50Hz the device shall permit the motor to develop constant torque and above 50Hz

constant power.

Frequency control shall be within 3% of the set point. In the event of the loss of the speed reference the output frequency shall revert to a pre-set value. All analogue and digital control inputs and outputs shall be galvanically isolated from each other and from the mains supply and shall be capable of withstanding a test voltage of 2,5kVdc for 1sec. For safety reasons, only drives that have galvanic isolation as an integral part of the drive will be accepted.

5.5.3 Analogue and Digital Control

The drive shall also be able to respond to speed commands from a 4-20mA control signals, and their respective inverted signals.

For maximum noise immunity on the digital inputs the sink current shall be 8mA and 24Vdc for each input.

One programmable analogue output 4-20mA shall be provided for monitoring purposes.

Two programmable relays shall be provided for remote monitoring of the converter. The programmable options shall include as a minimum ready, run, and alarm. The contacts shall have a minimum rating of 1A and 250Vac or 30Vdc.

The run relay function shall initiate a run signal only when the frequency output from the converter is greater than 0.5Hz.

5.5.4 User Set/Read Parameters

The drive shall have a LCD display (**4 digits minimum**) and shall provide comprehensive information on the drive and the motor's condition. The following parameters shall be considered as the minimum requirements:

- Maximum and minimum output frequency in Hz
- Acceleration and deceleration ramp slope
- Current limit and current forcing limits
- Motor thermal overload protection
- Constant torque/square law torque curve selection
- Slip compensation
- Selection of switching frequency
- Motor voltage
- Current
- DC link temperature(Degrees Centigrade)

If the offered drives does not have this facility, then offer will be demmed as not to specification.

- Output voltage V
- DC link voltage V

In addition, a password protection facility shall be provided to prevent unauthorised alteration of the pre-set parameters.

5.5.5 Monitoring and Protection

The drive shall shut down safely with a fault condition, and operate the trip relay. The drive display shall indicate the nature of the fault. In addition, the interface panel shall provide fault signals on a FIFO basis.

The following fault conditions, as a minimum, shall be indicated on the operator's interface panel:

- Power device heat sink over temperature
- Loss of serial communication
- Stall prevention
- In and output phase loss detection
- Over voltage
- Over temperature
- Main and control circuit under voltage
- Inverter and motor overload
- Inverter load short-circuited

- Over current
- Earth fault
- Inverter fault
- Pre-charge resistor overheat fault
- Over torque detection
- Reverse run prohibit

The VSD shall have inherent current limiting to prevent over current tripping caused by transient shock.

The drive shall provide for both automatic and manual (remote) reset operation. In manual reset mode the reset shall be accomplished from both the keypad on the drive and by remote input signal to the drive.

For safety reasons the converter must have a trip lock function preventing an operator from resetting the drive under an extreme condition.

The drive shall be equipped with a data log (last ten trips) menu that will allow storage of the type of faults that have occurred. Last fault memory shall be required in the event of power failures.

5.5.6 Reliability and Availability

To maximise the availability of the VSD, the supplier shall also provide a breakdown repair facility, 365 days per annum.

5.5.7 Maintainability and Interchange Ability

Easy accessibility and interchange ability of the electronic modules is essential in order to facilitate the drives being maintained by the client's technical personnel. The supplier must state in his offer the availability of the commonly used spares and the level of backup he can provide in case of an emergency.

The supplier shall complete a comprehensive list of spares that they consider should be ordered. The client reserves the right to order either the whole or any quantity of the spares offered. The drive supplier shall check any spares ordered for interchange ability.

The supplier shall state whether full repair facilities are available, as well as where they are located.

6. 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

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.

SECTION V: TECHNICAL INFORMATION

LOT 1

Pump Technical Information

Pump	Technical Information
Make	
Model	
Total mass of pump/motor unit (kg)	
Impeller Diameter (mm)	
Min. allowable flow rate	
Min. allowable continuous flow rate	
Max. allowable continuous flow rate	
Power absorbed at Duty Point	
Max. power absorbed	
Operating speed	

Motor Technical Information

Motor	Technical Information
Make & Model	
Type	
Frame size	

LOT 2

VSD Schedule

Make and model:		
Country of origin		
Efficiency at 11kW		
Cooling Requirement of the drive at 11kW load.		
Power Factor at 11kW		
IP rating of the Drives		
IP rating of the Drives		
Rating		
Voltages (<i>Indicate variation e.g. 400V +10% -15% or 340V – 440V</i>)		
Starter mains supply voltage (3 Phase)		Vac
Starter control voltage (electronic circuitry)		Vac / dc
Starter digital input voltage		V AC / DC*
Starter frequency		Hz

SECTION VI: SPECIFICATIONS AND COMPLIANCE SHEET

Procurement Reference Number: _____

Lot 1

PUMP: MATERIALS OF CONSTRUCTION

<i>Item No</i>	<i>Technical Specification Required</i>	<i>Technical Specification Offered</i>	<i>Offer Complies</i>	
			<i>Yes</i>	<i>No</i>
<i>A*</i>	<i>B*</i>	<i>C</i>	<i>D</i>	<i>E</i>
1	Cast Iron volute casing of pump			
	Carbon iron shaft			
	Cast iron impeller			
	Epoxy coating			
	Suction flange rating - SABS 1123			
	Discharge flange rating - SABS 1123			

Performance Requirements

Item No	Technical Specification Required	Technical Specification Offered	Offer Complies	
			Yes	No
A *	B *	C	D	E
1	Close-coupled end-suction volute casing pump-sets			
	Duty point as specified			
	Duty flow between 80% and 105% BEP flow			
	Standard pump factory efficiency at duty point: $\geq 60\%$			
	NPSH required at duty point: $\leq 2\text{mWh}$			
	Mechanical shaft seal suitable for raw water			
	electric motor designed, rated and manufactured in accordance with SANS 1804-1/2 / IEC 60034-1			
	Suitable continuous duty – S1			
	Type of motor enclosure - minimum IP55			
	Method of motor cooling - IC 411, totally enclosed fan cooled (TEFC)			
	Method of motor mounting - IM V1, on motor stool, flanged to pump head			
	Power supply - $400\text{V} \pm 10\%$ AC, 3-phase, $50\text{Hz} \pm 5\%$			
	Motor shaft power rating – At least 115% pump power requirement at any point on the H-Q curve			
	Class F insulation			
	Class B temperature rise			
	Suitable for VSD Operation			
	Insulated NDE bearings			

Item No	Technical Specification Required	Technical Specification Offered	Offer Complies	
			Yes	No
<i>A*</i>	<i>B*</i>	<i>C</i>	<i>D</i>	<i>E</i>
	Suitable for continuous full load operation at 40°C and 1650m a.s.l.			
2	Base frame construction as specified			
	All welding shall be done in accordance with SANS 10044 for steel fusion welding			
	Base frame hot dip galvanized according to SABS ISO 1461:1999			

Lot 2

Are the following starter statuses indicated?		Display Format (if Yes)
Starter power on	Yes / No *	Text / Indication only *
Start cycle active	Yes / No *	Text / Indication only *
Run cycle active (Full speed)	Yes / No *	Text / Indication only *
Soft stop cycle active	Yes / No *	Text / Indication only *
Fault active	Yes / No *	Text / Indication only *
Are the following displayed as text on the operator interface?		
Actual current		Yes / No *
Type of fault / trip condition (if trip is active)		Yes / No *
Are the following statistical/logged data available and displayed on the interface?		
Duration of last start		Yes / No *
Maximum current on last start		Yes / No *
Total run time		Yes / No *
Total number of starts		Yes / No *
Cause of last trip		Yes / No *
Current on last trip		Yes / No *
Total number of trips		Yes / No *

Are the following protection features available?	
Power device / heat sink over temperature	Yes / No *
Shorted power device (e.g. SCR)	Yes / No *
Motor Instantaneous over current	Yes / No *
Motor Electronic overload (I^2t)	Yes / No *
Over Voltage Protection Range	Vac
Under Voltage Protection Range	Vac
Phase sequence	Yes / No *
Phase failure	Yes / No *
Number of starts per period	Yes / No *
Under Load	Yes / No *
Over and Under frequency	Yes / No *
Start-up time inhibit	Yes / No *
Faulty motor winding detection	Yes / No *
Are the following parameters settable via the operator interface?	
Motor running current limit	Yes / No *
Motor start-up current limit	Yes / No *
Motor under current limit	Yes / No *
Initial start-up voltage	Yes / No *
Start-up curve used	Yes / No *
Acceleration time limit	Yes / No *
Deceleration time	Yes / No *
Under voltage limit	Yes / No *
Over voltage limit	Yes / No *

Phase sequence enable/disable	Yes / No *
Soft stop time	Yes / No *
Allowable start time	Yes / No *
Serial communication parameters	Yes / No *
Delay time on trip conditions	Yes / No *
Output C Contacts	
Number of programmable relay contacts:	
Is the contacts voltage potential free	Yes / No *
Contact voltage rating	V
Contact current rating	A
Contact maximum VA rating	VA
Can the o Outputs be programmed to activate on the following conditions ?	
Trip or Fault active	Yes / No *
End of acceleration/start	Yes / No *
Digital co Control inputs : Are inputs available for the following control signals	
Start	Yes / No *
Immediate stop	Yes / No *
Soft stop	Yes / No *
Remote reset	Yes / No *
Analog co Control inputs :	
Number of 4-20 mA inputs	
Number of 4-20 mA outputs	

Serial communication detail	
Is a Modbus RTU protocol port available?	Yes / No *
Is it possible to operate on a Baud rate of 9600	Yes / No *
Is the drive number settable	Yes / No *
Type of port	RS232 *
Are the following data available via Modbus RTU protocol ?	
Actual current	Yes / No *
Actual output voltage	Yes / No *
Total run time	Yes / No *
Total number of starts	Yes / No *
Description of an active trip	Yes / No *
Ethernet communication detail	
Is a Modbus TCP protocol port available?	Yes / No *
Is all IP-related parameters settable	Yes / No *
Are the following data available via Modbus TCP protocol ?	
Actual current	Yes / No *
Actual output voltage	Yes / No *
Total run time	Yes / No *
Total number of starts	Yes / No *
Description of an active trip	Yes / No *

Operator interface detail:	
Is it a LCD type display	Yes / No *
If Yes : Amount of characters displayed	
If Yes : Amount of lines displayed	
Software protection:	
Is a type of software lock provided for protection of programmed parameters?:	Yes / No *
If Yes : State type	

MAINTENANCE DETAILS

Specify which manuals, tools, diagrams and spare parts will be supplied:

Details of guarantee given (specify if guarantee for different components differ), and give time until spares will be available:

Since when is Bidder an uninterrupted agent for supply?

Centre where services will be done: _____

Workshop area: _____

Is a field service available? (Yes/No) _____

Amount of teams: _____

Base station of maintenance team:

Areas where field service will be rendered: _____

Number of qualified artisans employed by bidder: _____

Value of spares in stock applicable to offered unit: _____

Spares agents in the Republic of Namibia: _____

To whom and how many units of the type and class offered were already sold in Namibia?

List of accessories not factory-fitted and name and location of company to do installation/fitting: _____

Additional general information: _____

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

Offers with insufficient details or information will be considered unresponsive and shall be disqualified as a result.

NOTE:

Bidders will be disqualified if this information is not included as part of the Offer. 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 VII: 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 public entities physical address/website: Insert Public Entity address/website)* except where modified by the Special Conditions below.

SECTION VIII: 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 VIII: SPECIAL CONDITIONS OF CONTRACT

Procurement Reference Number: **G/RFQ/NW-0xx//2021**

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 176 Iscor Street NamWater at the Aigams Building, Northern Industrial Area in Windhoek
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: _____

Subject and GCC clause reference	Special Conditions
Delivery and Documents GCC 13.1	The Goods are to be delivered within 5 weeks 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 month of invoice upon 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.
Packing GCC 23.2	The packing, marking and documentation within and outside the packages shall be: Addressed to NamWater and the Procurement reference No. clearly marked. Good should be in protective packaging for safety.
Insurance GCC 24	The insurance should be covered as described in Delivery Duty Paid (DDP)
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.

Subject and GCC clause reference	Special Conditions
Warranty GCC 28.3	The warranty period shall be 18 months from date of delivery or 12 months from date of commissioning, whichever occurs first. The Supplier shall rectify, free of charge, any defects developing under proper use and arising solely from faulty materials, faulty designs, faulty workmanship and unacceptable deviation from performance criteria as specified in this document. Should any repairs, rectifications and/or component replacements be conducted as warrantee claims, the warrantee period shall be extended equal to the duration required to complete the respective repairs, rectifications and/or component replacements as measured from the date of the claim submission until delivery to NamWater. All components affected by any repairs, rectifications and/or component replacements conducted as warrantee claims, shall, following the repair, rectification and/or component replacement, remain under warrantee for 12 months after delivery to NamWater or 6 months after reinstallation and commissioning, whichever occurs first. The Supplier shall transfer the benefit of any and all periods of warrantee by the manufacturer of the equipment, which may be un-expired at the end of the above warrantee period (s), to NamWater.
Repair and Replacement GCC 28.5	The period for repair or replacement shall be as soon as is reasonably practicable, but shall not exceed the offered delivery period.

SCHEDULE 1**QUOTATION CHECKLIST SCHEDULE****Procurement Reference No.: G/RFQ/NW-024/2027**

Description	Attached	Not Attached
Quotation Letter		
List of Goods and Price Schedule		
Specifications Compliance Sheet		
Evidences for conformity of Goods		
valid copy of company registration / founding statement. (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))		
Original or certified copy of valid good Standing TAX Certificate; (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))		
Valid good Standing Social Security Certificate;		
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; (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))		
Submit signed Bid-securing Declaration.		
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		
Supporting information/literature to substantiate compliance. These documents must be from the manufacturer or an authorized manufacturer's representative of the offered goods. Representatives must provide an authorization letter from the manufacturer confirming their status.		