



# **INFORMATION SHEET FOR PROCUREMENT OF SEA WATER COOLING SYSTEM**

**Reference No.: FNK-I/IUL/2023/177**

Issued on: 17<sup>th</sup> May 2023

Issued by:

Fenaka Corporation Limited

Male', Republic of Maldives

## Section I: Instruction to Bidders

A. General	
<b>1. Scope of Bid</b>	1.1 Fenaka Corporation Limited requests quotations for sea water cooling system required for RO Plant in accordance with <i>Section III, Technical Specifications</i>
<b>2. Eligible Participants</b>	2.1 Local companies registered in Maldives are eligible to participate in the tender
	2.2 Foreign companies are eligible to participate in the tender only if the total bid value is above 2,500,000 Maldivian Rufiyaa.
B. Preparation of the Bid	
<b>3. Bid Prices</b>	3.1 The unit price of each item and the total price shall be clearly indicated in the quotation
	3.2 All items shall be quoted in the bid (please refer to <i>Section III, Technical Specifications</i> for the details of required items)
	3.3 Quotation shall separately indicate the additional charges such as freight charges and insurance. GST for mentioned charges should be omitted in grand total.
	3.4 The bidder shall submit quotation on CIF basis to Male' port
<b>4. Currency</b>	4.1 The bidder shall quote entirely in Maldivian Rufiyaa
<b>5. Alternative Bids</b>	5.1 Bidders can submit a maximum of two (2) options
<b>6. Validity of Bids</b>	6.1 Quotation shall remain valid for minimum sixty (60) days from the date of bid opening
<b>7. Bid Security</b>	7.1 All bids should be accompanied with a bid security of USD 5,000 (Five Thousand US Dollars) or its equivalent in Maldivian Rufiyaa
	7.2 The bid security should be: <ul style="list-style-type: none"> <li>- Original bank guarantee letter (or)</li> <li>- Bank guaranteed and stamped check (or)</li> <li>- An insurance policy from Maldives Monetary Authority (MMA) registered insurance company</li> </ul>
	7.3 Any bid not accompanied by a Bid Security shall be rejected during bid opening

	7.4	The bid security must be valid for a minimum of twenty (20) additional days beyond the validity of quotation
<b>8. Technical Compliance</b>	8.1	All relevant information including the brand shall be given to enable technical evaluation of quoted items
	8.2	If the manufacturer or assembler is not the same as the bidder, a document indicating that manufacturer or assembler is willing to sell the item to the bidder is required
	8.3	Manufacturer's Authorization letter will be required to enable technical evaluation
	8.4	If the goods do not comply with the requirements mentioned in <i>Section III, Technical Specifications</i> , the bid will be rejected during evaluation.
<b>9. Documents Comprising the Bid</b>	9.1	Quotation (inclusive of the delivery period and payment terms)
	9.2	Specifications of the offered product
	9.3	Details of the company <ul style="list-style-type: none"> <li>- Company profile/background</li> <li>- Company registration certificate</li> <li>- GST registration certificate (for local bidders only)</li> <li>- TAX clearance report (6 months validity)</li> <li>- Contact details (name, designation, mobile number and e-mail address)</li> </ul>
	9.4	Experience letters, if available <ul style="list-style-type: none"> <li>- Letters within past five (5) years</li> <li>- Relevant experience letters</li> <li>- Letters with project name and value</li> </ul>
	9.5	One (1) compact disc with original bid document scanned and written
	9.6	Bids lacking the documents above are subjected to be rejected during the bid opening
<b>10. Format of Bid</b>	10.1	The Bidder shall submit two (2) sets of the bid document (1 original and 1 copy), enclosed separately in two envelopes, and sealed with company stamp
	10.2	All pages of the bid document shall be stamped and bound properly (excluding the bid security)
<b>C. Bid Submission</b>		

<b>11. Sealing and Marking Bid Document</b>	11.1 The bid document shall be sealed properly in an envelope clearly marked ‘ORIGINAL’ or ‘COPY’, with the name of the company and the tender reference number (FNK-I/IUL/2023/177)
<b>12. Bid Opening</b>	12.1 The bids will be opened on 24 <sup>th</sup> May2023, 1300hrs in the presence of bidders 12.2 Bids will be opened at: Fenaka Corporation Limited Hilaalee Magu, K. Male’, Republic of Maldives 12.3 Bids received electronically will not be accepted
<b>13. Bid Rejection</b>	13.1 Bidders that arrive after bid submission deadline shall not be able to participate in the bid 13.2 Bidders that do not register for the tender are unable to participate in the bid opening 13.3 Bids lacking the documents mentioned in 9. <i>Documents Comprising the Bid</i> (except 9.4 <i>Experience letters</i> ) and that do not comply with 10. <i>Format of Bid</i> are subjected to be rejected
<b>D. Awarding of Contract</b>	
<b>14. Payment Terms</b>	14.1 An advance payment will not be released for this project 14.2 Proposed payment terms should not be tied with submission of Bill of Lading.
<b>15. Packing</b>	15.1 Materials must be packed in accordance with the packing list given in <i>Section III: Technical Specifications/Packing List</i> to avoid rejection
<b>16. Factory Acceptance Testing</b>	16.1 The generator(s) shall be fully tested at the manufacturer workshop in the presence of Client’s appointees.
	16.2 The testing shall be conducted at internationally accepted testing standards
	16.3 The transformer(s) shall undergo protection testing and operation testing

## Section II: Evaluation Criteria

**Proposal Cost:** 70 points for the lowest price

- $(\text{Lowest price} / \text{proposed price}) \times 70$

**Delivery:** 20 points for the lowest delivery period

- $(\text{Lowest delivery period} / \text{proposed delivery period}) \times 20$
- If the delivery period indicates 'ex-stock', it shall be taken same as the party offering the longest delivery period.

**Credit Period:** 10 points for the maximum credit period

- $(\text{Proposed credit period} / \text{longest credit period}) \times 10$

**Note:** Any discrepancy in technical details specified in quotation with technical specification document, the specification shall prevail.

## Section III: Technical Specifications

Description	Quantity
Sea water cooling system	01

Ref No: FNK-SP01 /R/2023/01

### Supply of Equipment for Sea Water Cooling System at GDh. Thinadhoo

Fenaka Corporation is looking for supply of main equipment to build a sea water cooling system for following generator sets installed in Gdh. Thinadhoo Powerhouse

2Nos x Cummins QSK60-G4 (prime power rating: 1800kW)

1Nos x Cummins QSK60- G3 (prime power rating: 1500kW)

1Nos x Cummins KTA50-G8i (prime power rating: 1200kW)

Below are required minimum specification of heat exchanger, pumps and accessories. Bidders are requested to propose the same or equivalent.

#### 1) Plate Heat Exchanger

Required Quantity: 4 Nos

Brand: Alpha Laval, Denfoss or equivalent

Specification:

Parameter	Hot Side	Cold Side
Heat Load (kW)	> 700	
Inlet Temperature (°C)	95 to 98	25 to 30
Outlet Temperature (°C)	87 to 75	45 to 65
Mass Flow Rate (kg/s)	22.4	13.68
Volumetric Flow Rate (L/min)	1300	800
Total Pressure Drop (kPa)	<41.97	<30
Fouling Factor (m <sup>2</sup> K/kW)	0.0232	0.0232
Logarithmic Mean Temperature Difference ( ΔK)	33.4 - 45	
HTC (W/m <sup>2</sup> .K)	>4798/ >3923	
Properties of Fluid		
Fluid	Raw Water	Sea Water
Liquid Density (kg/m <sup>3</sup> )	900 to 1020.00	900 to 1020.00
Liquid Heat Capacity (kJ/kgK)	4.0 – 4.2	4.0 – 4.2
Specification		
Number of Plates	30 -50	
Grouping	1 x 15 / 1x 15	
Plate Thickness (mm)	< 0.50	
Plate material	Titanium	
Gasket material	Rubber NBRH	
Weight, empty/ operating (kg)	292.34/314.52	
Paint Category	C4	
Connection: Inlet	DN100, PN16 studed end	
Connection: Outlet	DN100, PN16 studed end	
Minimum Design Temperature (°C)	50	
Maximum Design Temperature (°C)	90 - 100	
Maximum Design Pressure (Bar)	10	
Maximum Differential Pressure (Bar)	10	

## 2) Pumps

**Required Quantity : 8 Nos**

**Brand : Stanflo, Johnson or equivalent marine pump**

**Specification:**

Closed impeller according to DIN 24255

Material: Cast-iron, cast-iron or bronze impeller with SS shaft

Ports DN 50mm discharge x 65mm suction, flanged

Motor : 11kW, 15HP, 2Pole 2900RPM, 3 Phase, 50Hz, 400V, Class F, IP55, TEFC

Flow : 40m<sup>3</sup>/hr @ 52 differential head

## 3) Strainers

**Required Quantity : 8 Nos**

**Brand : tanflo, Johnson or equivalent compliance with DIN 87151D standard**

**Specification:**

Type : Straight pattern mud box strainer with removal filter basket for easy cleaning

Size: DN100 , PN10 flange

Material : Cast-iron (GG25) body; Stainless Steel (SS316) Filter; NBR Cover Gasket, Brass Drain plug

Pressure: max 4 bars

Temperature Range : 10°C to 120°C