



PROCUREMENT SECTION
REVISED

FOREIGN ENQUIRY

M/s.

Ref. No.:

I HF-20157

Date:

23.08.2017

Due Date:

14.09.2017

Dear Sirs,

We require the following items for XXXVII Indian Antarctic Expedition. Manufacturers, dealers, Bonafide vendors, distributors/authorized agents are requested to quote for the following items as per the terms and conditions mentioned below.

SL. NO.	ITEM DESCRIPTION	QUANTITY
01	Spares for Reverse Osmosis System Brand: ProMinent, BWT, PURO, GRUNDFOS, ENPRESS LLC, SIEMENS, WTW, MOELLER, LEADER, HACH LANGE. (As per Appendix-I)	(As per Appendix-I)
02	Spares for Membrane Bio Reactor Brand: A3, SEEPEX, ABB, SKF, BECKER, ELOBAU, WURTH/BOSCH/EURECA FORBES (As per Appendix -II)	(As per Appendix -II)
03	Spares for Gray Water Brand: AQUACELL, GRUNDFOS (As per Appendix -III)	(As per Appendix -III)
04	Spares for Sea Water Intake Brand: ABB, PHOENIX CONTACTS, RELPOL, GRUNDFOS, JOHNSONS VALVES, WURTH, SPELSBERG ELS (As per Appendix -IV)	(As per Appendix -IV)
05	Spares for HVAC Brand: HELIOS, REGELGERAT, LUFTBEFEUCHTUNG ARNO KLOTZ OR EQUIVALENT, TROX TECHNIK, BRINKMANN PUMPS, FUJITSU, PUROLITE (As per Appendix -V)	(As per Appendix -V)
06	Spares for Combined Heat & Power (CHP) System Brand: MAN, MAN/MAHLE, YUASA, MOTORTEC, HAZET, ROTHEWALD (As per Appendix -VI)	(As per Appendix -VI)
07	Spares for Fuel Farm Brand: SCHISCHEK, EATON MOELLER, ROSEMOUNT (As per Appendix -VII)	(As per Appendix -VII)
08	Spares for Electrical Panels Brand: iEi, MASTER GUARDS, POWER SAFE SBS, SIEMENS, MBS AG, SOCOMEC, EFEN, ABB, PHOENIX CONTACT, INOTEC, BAJAJ/PHILIPS, NHP, FEBER KABEL, HERA, TRIDONIC ATCO, MX/CRABTREE/PRESTO, GEWIS, WONDERFLOOR OR EQUIVALENT (As per Appendix -VIII)	(As per Appendix -VIII)

Your offer should contain the following information:

1. **Submit your quotation on FOB basis. Indicate prices on CIF Goa and CIF Capetown basis.**
2. Delivery Period: Please confirm the exact date of delivery.
3. Validity of quotation:
4. Quantity/Trade discounts, if any. :
5. Guarantee/Warranty of the product:
6. Taxes applicable (VAT if any):
7. Enclose brochure/leaflet – Specification:
8. **No advance payment** will be made. Payment by irrevocable letter of credit after supply and acceptance of the material by NCAOR.
9. Overwriting and corrections should be attested properly. The quotation should be complete in all respects and should be duly signed. Incomplete and unsigned quotation will not be considered at all. Quotation should be submitted as per NCAOR terms and conditions.
10. All relevant technical literature pertain to items quoted **with full specifications** (Drawing, if any), information about the products quoted, including brochures if any should accompany the quotation.
11. A list of **reputed clients** to whom the firm has supplied similar items to be furnished along-with the quotation.
12. Quotation should be **valid for a period of 90 days** and the period of delivery required should also be clearly indicated. If the supplier fails to deliver the goods within the time to be agreed upon, for delayed deliveries and for delays in installation (wherever applicable) NCAOR reserves the right to **levy liquidated damages** at the rate of 0.5% per week or part their of upto maximum of 5%.
13. Please **specify the Make/Brand** and Name of the Manufacturer with address, country of origin and currency in which rates are quoted.
14. **Both FOB and CIF prices upto Goa/Cape Town basis should be indicated. However quotation should contain item-wise prices including total ex-works price and cost of packing forwarding, approx. cost of air-freight charges for delivery up to Goa/Cape Town.**
15. A technical Committee constituted by the Director will assess the product supplied/installed for their quality and their conformity to the specifications provided by the firm in their quotations. Any item(s) identified by the Committee to be not as per the specifications or are found to be of inferior quality will be rejected, and the bills towards the supply will not be processed for payment till proper replacements are provided.

Please enclose documentary proof such as latest purchase order copies/pricelist etc., to substantiate the reasonability of price.

Note: Please enclose a copy of valid Authorized Dealership/Distributor Certificate obtained from OEM.

The prices shall be quoted in freely convertible foreign currency in case of offers received for imported stores.

You have to confirm that the “the rates quoted by you are reasonable and lowest & not exceeding the lowest rates charged to any of your other client.

Director, NCAOR reserves the right to reject any quotation received without assigning any reasons.

Yours faithfully

**Head (Procurement & Stores)
For and on behalf of Director, NCAOR**

TENDER ACCEPTANCE UNDERTAKING

To

The Director,
NCAOR, Headland Sada,
Vasco – Goa.

Having examined the tender document for **Spares for Reverse Osmosis System, Spares for Membrane Bio Reactor, Spares for Gray Water, Spares for Sea Water Intake, Spares for HVAC, Spares for Combined Heat & Power (CHP) System, Spares for Fuel Farm & Spares for Electrical Panels,** we the undersigned hereby offer to supply the material in conformity with all specifications and conditions set out in the tender document.

We enclosed all the relevant documents as per the tender.

We understand that you are not bound to accept the lowest or any tender received.

Date :

(Signature of Bidder)

Name :
Designation :

Seal

Appendix-I

SPECIFICATIONS FOR SPARES FOR REVERSE OSMOSIS SYSTEM.

Sr. No.	Item Description			Brand	Qty.
	Part Name	Type	Model No.		
	Spares for Reverse Osmosis System				
1.1	pH sensor	pH: 1- 12 Temp: 0-60dC Pressure: 3bar	Dulcotest PHEs-112	ProMinent	2 No.
1.2	5micron 20inch Polypropylene Cartridge Filter				20 No.
1.3	50micron 20inch Polypropylene Cartridge Filter				50 No.
1.4	Quartz glass tube for 80W		D42x980x2 verp	BWT	2 No.
1.5	UV Tube with 4 terminal ports on one side	40W	UV-C 39-4P	PURO	3 No.
1.6	Shaft Seal Kit for Hydro Multi-E 2 CRIE 3-7 (Station Supply & Humidifier Supply pump)	HQQE 96441877	96455086	Grundfos	5 No.
1.7	Ultra Filtration Module	Pressure: 10Bar Temp: ~1-49 degC Vacuum: 127mmHg	0842UF	ENPRESS LLC	1 No.
1.8	16 Channel Digital Input Module	DI 16 x 24VDC	SM1221	Siemens	2 No.
1.9	16 Channel Digital Output Module	DQ 16 x 24VDC	SM1222	Siemens	1 No.
1.10	Universal multi-parameter portable handy meter for pH & Conductivity		Model: ProfiLine pH/Cond 3320 Order No: 2EA310	WTW	1 No.
1.11	Buffer solution pH 7.0	TPL7		WTW	1 No.
1.12	Buffer solution pH 4.1	TPL4		WTW	1 No.
1.13	Buffer solution pH 10.01	TPL10 Trace		WTW	1 No.
1.14	Control Transformer	Primary: 400V Secondary: 230V 0.7A	4AM3842-5AT10-0FA0	Siemens	1 No.
1.15	Control Transformer	Primary: 400V Secondary: 24V	STO0,16	Moeller	1 No.
1.16	Lifting Pump with Float Power cable plug & non return valve (Manufactured	1" Discharge 230VAC 50Hz, 1/2 HP, 750W	ECODIVER 750 A	Leader	2 No.

	with anti-corrosive and rust-proof materials.)				
1.17	Sodium Hypochloride (20Ltr)	12% active chlorine	UN1791		1 No.
1.18	Calcite Hardener (20kg)				2 No.
1.19	Ammonia		TNT832 NH3-N	Hach Lange	5 No.
1.20	Ammonium		LCK303 NH4-N	Hach Lange	5 No.
1.21	Chemical Oxygen Demand (COD)		LCK314	Hach Lange	5 No.

SPECIFICATIONS FOR SPARES FOR MEMBRANE BIO REACTOR.

Sr. No.	Item Description			Brand	Qty.
	Part Name	Type	Model No.		
	Spares for Membrane Bio Reactor				
2.1	Rubber Aerator membrane aeration		SRB420K	A3	6 No.
2.2	Rubber Aerator Bio Aeration		SRB950K	A3	5 No.
2.3	MBR membrane module		MC03 Plate distance 5.5mm 24 active memb plates	A3	2 No.
2.4	Stator	Commission-No : 255168	BN 60/02-6L NBR	Seepex	1 No.
2.5	Stator	Commission-No : 255170	BN 60/05-12 NBR	Seepex	1 No.
2.6	Decanter Motor (TEFC, 3-phase, squirrel cage induction motor) with Bearing assembly	Mounting: IM3001 B5(flange)	Code: 3GAA 111 312-BDE Type: M3AA 112 MB 2	ABB	1 No.
2.7	Signal Convertor		1SVR011718R2 500	ABB	1 No.
2.8	Roller bearing for Decanter Shaft		NU 216	SKF	2 No.
2.9	Deep Groove Ball Bearing for Decanter shaft		6216/C3	SKF	2 No.
2.10	Blower Filter	8404029000	PATRONE C1132	BECKER	4 No.
2.11	Float switch side mount With R 1/2 thread and Teflon hinge	230V, 50W, 1A	205KS120	Elobau	10 No.
2.12	Wet & Dry Vacuum Cleaner for Heavy Duty	30-40Ltr, 1200W-1500W, 230V, 1Ph, 50Hz		Wurth/Bosch/ Eureca Forbes	2 No.
2.13	Dry Bacteria	For Sewage Treatment Plant			5 KG

SPECIFICATIONS FOR SPARES FOR GRAY WATER.

Sr. No.	Item Description			Brand	Qty.
	Part Name	Type	Model No.		
	Spares for Gray Water				
3.1	Power clear aquacell membrane module	Prod. Nr. 96913060	Aquacell	Aquacell	2 No.
3.2	Circulating pump		UPS 25-40 N180	Grundfos	1 No.

SPECIFICATIONS FOR SPARES FOR SEA WATER INTAKE.

Sr. No.	Item Description			Brand	Qty.
	Part Name	Type	Model No.		
	Spares for Sea Water Intake System				
4.1	Machine Drive (VFD) for Submersible pump		ACS355-03E-02A4-4	ABB	2 No
4.2	Thermal Overload Relay		Type: TF42-2.3, Product ID: 1SAZ721201R1031	ABB	2 No.
4.3	Contactor		Type: AF09-30-10-11, Product ID: 1SBL137001R1110	ABB	2 No.
4.4	Redundancy Module	12-24 V DC, 2x 10 A, 1x 20 A	TRIO-DIODE/12-24DC/2X10/1X20	Phoenix Contacts	1 No.
4.5	Industrial Relay	4 C/O contacts, Coil: 24VAC, Rated load: 6A, LED	R4-2014-23-5024-WTL	Relpol	2 No.
4.6	Relay Base (Screw Terminal, Relpol Miniature Blade-Type Socket for R4N relays)		GZT4	Relpol	2 No.
4.7	Submersible drop cable (30Mtr)	TML-B 4G 1,5 qmm	Product Code: 00ID4063	Grundfos	3 No.
4.8	Submersible Pump Male Female Connector Cable (1.5mtr)	TML-B 4G 1,5 qmm	Part No: 795845	Grundfos	5 No.
4.9	DZR Brass Ball Valve both side internal threading SUITABLE FOR SEA WATER DUTY	Size:1 1/2" Ball: DZR Brass Hard Chrome Plated	BV100	Johnsons Valves	5 No.
4.10	Hexagon Nipple BSPT	Size: 1 1/2"	HN-112	Johnsons Valves	3 No.
4.11	Reducing Hexagon Nipple BSPT	Size: 1 1/2" x 1 1/4"	RHN-112/114	Johnsons Valves	3 No.
4.12	Reducing Hexagon Nipple BSPT	Size: 2" x 1 1/2"	RHN-2/112	Johnsons Valves	3 No.
4.13	Bush Male BSPT x Female BSPP	Size: 1 1/2" X 1"	RB-112/1	Johnsons Valves	3 No.
4.14	Bush Male BSPT x Female BSPP	Size: 1 1/2" X 1 1/4 "	RB-112/114	Johnsons Valves	3 No.
4.15	Bush Male BSPT x Female BSPP	Size: 2" X 1 1/2"	RB-2/112	Johnsons Valves	3 No.
4.16	Hot Air Blower	Art No: 0702 2022 X	HLG 2000	Wurth	2 No.
4.17	Terminal block 5-pole - 16 mm ²	Article number: 84001601	Abox 160 KLS-16 ²	Spelsberg els	5 No.
4.18	Junction box 180 x 180 x 91 mm	Article number: 49041601	Abox-i 160-16 ²	Spelsberg els	3 No.

SPECIFICATIONS FOR SPARES FOR HVAC.

Sr. No.	Item Description			Brand	Qty.
	Part Name	Type	Model No.		
	SPARES FOR HVAC				
5.1	Supply Air Fan for Medical room	230V, 50Hz, 0.17kW, 0.63A, 2200rpm, IP44, 50dC	Type: SB 160 D Art No: 09563 001	Helios	1 No
5.2	Supply Air Fan for Waste Water Blower	230C, 1ph, 50Hz, 61W, 0.27A, TN 80dC, 4uF, IP44	Type: SB 125 A Art No: 09506 001 PC06319	Helios	1 No.
5.3	Conductivity Meter	Sr No: 71948-1711-03198	LF-CC-K-EA	Regelgerat	1 No.
5.4	Humidifier Mesh	(HxWxD= 710x590x105)mm		Luftbefeuchtung Arno Klotz or Equivalent	1 No.
5.5	Humidifier Mesh	(HxWxD= 710x295x105)mm		Luftbefeuchtung Arno Klotz or Equivalent	1 No.
5.6	Volume flow controller	Control components for VAV terminal units	Part No: M546GA4, Type: VRD3 TR	Trox Technik	2 No.
5.7	Humidifier Pump		Type: KTF25/120 FXT+402	Brinkmann Pumps	1 No.
5.8	Air Filters for Split Ceiling AC	For MODELS : ABYA36LBTH	Part No: 9359739012	Fujitsu	24 No.
5.9	Intake Grille for Split Ceiling AC	For MODELS : ABYA36LBTH	Part No: 9359738015	Fujitsu	18 No.
5.10	Long Life Filters for Cassette AC	For UTG-UFYB-W Model: AUYP18LBL	Park No: 9375533014	Fujitsu	5 No.
5.11	Solid Resin for humidifier (25L per packet)		MB400	Purolite	25 No.

SPECIFICATIONS FOR SPARES FOR COMBINED HEAT & POWER (CHP) SYSTEM.

Sr. No.	Item Description			Brand	Qty.
	Part Name	Type	Model No.		
	Spares for Combined Heat & Power (CHP) System				
6.1	Air Filter		81.08304-0091	MAN	50 No.
6.2	Fuel Filter		51.12503-0059 / KC 297	MAN/MAH LE	80 No.
6.3	Lube Oil Filter		51.05504-0098 / OX 146D	MAN/MAH LE	24 No.
6.4	Gasket Asbestos-Free Cylinder Head Cover		51.03905-0135 829.803	MAN/FW 715 elring	200 No.
6.5	Valve Regulated Lead Acid Battery	12V 65 Ah	NP65-12I	YUASA	6 No.
6.6	Hex Shoulder Stud M10x70-110.9 - MAN 183-B1		06.01014-7219	MAN	25 No.
6.7	External Hex Round Bolt M15x2x144		51.90490-0023	MAN	40 No.
6.8	External Hex Round Bolt M15x2x168		51.90490-0022	MAN	50 No.
6.9	External Hex Round Bolt M15x2x109		51.90490-0024	MAN	30 No.
6.10	External Hex Round Bolt M10x145-1		51.90490-0040	MAN	24 No.
6.11	External Hex Round Bolt M10x103 -1.4980 -E14 -SD -HOCHWARM		51.90490-0054	MAN	50 No.
6.12	Fuel Injector		51.10100-7407	MAN	6 No.
6.13	Exhaust Gasket		51.08901-0150	MAN	6 No.
6.14	Exhaust turbo charger		51.09100-7605	MAN	2 No.
6.15	RPM Sensor		63.60.002-50	Motortec	8 No.
6.16	Universal Strap Wrench (Belt)	80-110 mm	Model No: 2170	Hazet	2 No.
6.17	Rothewald Socket Set	150-piece Socket Wrench Set	Order no. 10003583	Rothewald	1 No.

SPECIFICATIONS FOR SPARES FOR FUEL FARM.

Sr. No.	Item Description			Brand	Qty.
	Part Name	Type	Model No.		
	Spares for Fuel Farm				
7.1	Electric explosion proof actuator size M		ExMax-50.75-s	Schischek	2 No.
7.2	Jordfeilvarsler justerbar		Model: DMD2 Art No: 1656236	Eaton Moeller	1 No.
7.3	3051 / 3001 Pressure Transmitter with Display Indicator	Stat Pressure: 250Bar Range Limit: -2480/+2480mBar Span: 0-25/2480 mBar Ui: 30Vdc, Li: 200mA Pi: 0.9W, Ci: 0.012microF.	BAS97ATEX1089X 3051CG4A73A1A M5B411L4Q4	Rosemount	1 No.

SPECIFICATIONS FOR SPARES FOR ELECTRICAL PANELS SYSTEMS.

Sr. No.	Item Description			Brand	Qty.
	Part Name	Type	Model No.		
	Spares for Electrical Panels System				
8.1	Touch Panel with Windows XP Pro for Embedded Systems with OEM Software Product Key: QCH8W-BJHXD-KFMD9-M83YQ-HMJ9W		Model: AFL-12A-N270 FCC IDENTIFIER: VQF-RT3090-1T1R	iEi	1 No.
8.2	Control Panel for UPS Unit	UPS Rating: 60KVA, I/P: 400V AC, 50/60Hz, 104A Max, 3Ph 4W+PE O/P: 400V AC, 50/60Hz, 91/87/84A, 3Ph, 4W+PE, pF=0,9	Type: D Series 60KVA Sr No: 1008060063	Master Guards	1 No.
8.3	UPS Battery	Capacity: 12V 62Ah, Float Voltage: 2.29Vpc@20dC, 2,27Vpc@77dC, Connection Torque: 5, Weight: 19.1Kg	SBS B14	Power Safe SBS	6 No.
8.4	Unmanaged Industrial Ethernet Switch		SCALANCE XB005 6GK5 005-0BA00-1AB2	Siemens	1 No.
8.5	PLC SIMATIC S7-300		CPU317-2 DP 6ES7317-2AK14-0AB0	Siemens	1 No.
8.6	Communication Processor SIMATIC NET		CP 343-1 6GK7343-1EX30-0XE0	Siemens	1 No.
8.7	Digital Input Module DI32xDC24V	32DI, DC24V	SM 321 6ES7321-1BL00-0AA0	Siemens	2 No.
8.8	Digital Output Module DO32xDC24V/0/5A	32DO 24V DC, 0,5A	SM322 6ES7 322-1BL00-0AA0	Siemens	1 No.
8.9	Current Transformer	ASK 31.3 60/5A 1VA Cl.1	Art No: 7039	MBS AG	3 No.
8.10	Current Transformer	ASK 31.3 150/5A 2.5VA Cl.1	Art No: 7047	MBS AG	3 No.
8.11	Current Transformer	ASK 31.3 250/5A	Art No: 7053	MBS AG	3 No.

		5VA Cl.1			
8.12	Mains Rotary Switch		Sirco M63	Socomec	10 No.
8.13	Multifunction meters - PMD Multi-measurement meter		DIRIS A40 Ref No: 48250201	Socomec	2 No.
8.14	Functional Earth for DIRIS A40		Ref No: 48250087	Socomec	2 No.
8.15	D0 Fuse-Switches, vertical design, for busbar mounting – 60 mm system		Ord No: 56040-0010	EFEN	5 No.
8.16	NH Fuse Handle	16A, 400V AC, 1.5-36dC, 2.5-3Nm.	VDE 0636	EFEN	3 No.
8.17	NH Fuse-Switch		NH-LATR 00IN U5U5	EFEN	1 No.
8.18	D0-fuse disconnecter		ILTS-E3 Ord No: 4016779653503	ABB	2 No.
8.19	Modular socket (2pint Din Rail Mounted)		M1175 Product ID: 2CSM210000R072 1	ABB	10 No.
8.20	Type 1 surge protection plug		FLASHTRAB FLT-CP N/PE-350-ST 2859686	Phoenix Contact	1 No.
8.21	Overspanningsbeveiliging ssteker Type 1		FLASHTRAB FLT-CP 350-ST 2881887	Phoenix Contact	2 No.
8.22	Type 2 surge protection plug		VALVETRAB VAL-CP 350-ST 2859602	Phoenix Contact	2 No.
8.23	Emergency Lighting Control Mimic Panel		BNS MTB 880002	INOTEC	2 No.
8.24	Room Heater	2000W, 230V AC Tower Type With power selection option for heating Wheels-based		Bajaj/ Philips	4 No.
8.25	Power Supply SMPS 5A	Input: 230V Ac, Output: 12V DC		NHP	5 No.
8.26	Power Supply SMPS 10A	Input: 230V Ac, Output: 12V DC		NHP	5 No.
8.27	Power Supply SMPS 20A	Input: 230V Ac, Output: 12V DC		NHP	5 No.
8.28	Servo Stabilizer 10KVA	Input: 440V 3Ph, Output: 440V, 50Hz,			5 No.
8.29	5Core x 6sqmm Bare Copper Conductor cable	Low-smoke, zero-halogen flame	Art No: 011105 N2XH-J	feber kabel	1000 Meter

		retardant power cable. For outdoor use (-30 to +70dc)			
8.30	5Core x 4sqmm Bare Copper Conductor cable	Low-smoke, zero-halogen flame retardant power cable. For outdoor use (-30 to +70dc)	Art No: 011104 N2XH-J	feber kabel	1000 Meter
8.31	LED RGB Line	300 mm, DC 12V, 1.8W	Hera®	Hera®	12 No.
8.32	Power supply for comfortDIM systems (DALI protocol) for DIN rail		DALI PS	Tridonic.AT CO	2 No.
8.33	15A 3Pin Plug Top			MX / Crabtree / Presto	50 No.
8.34	Universal Sockets Chorus - Domestic range	For GW16821 support frame to convert 15A sockets with multiple use universal sockets	GW10310	Gewiss	300 No.
8.35	Miniature Lamps with Wired Lead with LED Lamp Chorus Range	230V AC - 0.6W, Red Cable, Color : Red	GW10883	Gewiss	20 No.
8.36	Insulation Rubber Mat (Black Color Electrical Safety Mat)	Size: 2 Feet x 20 Feet (approx.) Thickness: 3mm Fire Retardant		Wonderflo or or equivalent	1 No.