INFORMATION SHEET FOR PROCUREMENT GENERATOR SETS

Reference No.: FNK-I/IUL/2021/177

Issued on 26th April 2021

Issued by:

Fenaka Corporation Limited

Male', Republic of Maldives

Section I: Instruction to Bidders

A. General		
1. Scope of Bid	1.1	Fenaka Corporation Limited requests quotations for generator sets in accordance with *Section III, Technical Specifications*
	1.2	It is in Fenaka Corporation Limited's discretion to cancel the bid invitation mentioned in 1.1 at any time.
2. Eligible Participants	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		
3. Bid Prices	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 *Section III, Technical Specifications* for the details of required items)
	3.3	Quotation shall separately indicate the additional charges such as freight charges, insurance, etc.
	3.4	The bidder shall submit quotation on CIF basis to Male' port
4. Currency	4.1	The bidder shall quote entirely in Maldivian Rufiyaa
5. Alternative Bids	5.1	Bidders can submit a maximum of two (2) options
6. Validity of Bids	6.1	Quotation shall remain valid for minimum sixty (60) days from the date of bid opening
7. Bid Security	7.1	All bids should be accompanied with a bid security of USD 10,000 (Ten Thousand US Dollars) or its equivalent in Maldivian Rufiyaa
	7.2	The bid security should be: - Original bank guarantee letter (or) - Bank guaranteed and stamped check (or)

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		- An insurance policy from an insurance company registered at Maldives Monetary Authority. 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
8. Technical Compliance	8.1	All relevant information including the brand shall be given to enable technical evaluation of quoted items 8.2 The documents required for technical evaluation are: - Technical data sheets of engine and the alternator - Datasheets specifying cooling system rated at ambient temperature 50ºC - Certificate of Authenticity specifying manufacturer/assembler is an OEM or a genuine reputed international engine brand 8.3 If the manufacturer or assembler is not the same as the bidder, a document indicating that manufacturer or assembler is willing to sell the generator set to the bidder is required 8.4 Technical compliance letter will be required to enable technical evaluation 8.5 If the goods do not comply with the requirements mentioned in *Section III, Technical Specifications*, the bid will be rejected during evaluation. 8.6 Generator set should comply with our requirements, if not the bid will be rejected
9. Documents Comprising the Bid	9.1	Quotation (inclusive of the delivery period and payment terms) 9.2 Specifications of the offered product 9.3 Certificate of Authenticity specifying that manufacturer / assembler is an OEM of a genuine reputed international engine brand

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	9.4	Details of the company - Company profile/background - Company registration certificate - GST registration certificate (for local bidders only) - TAX clearance report (6 months validity) - Contact details (name, designation, mobile number and e-mail address)
	9.5	Experience letters, if available - Letters within past five (5) years - Relevant experience letters - Letters with project name and value
	9.6	One (1) compact disc with original bid document scanned and written
	9.7	Bids lacking the documents above are subjected to be rejected during the bid opening
10. Format of Bid	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)
C. Bid Submission		
11. Sealing and Marking Bid Document	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/2021/177)
12. Bid Opening	12.1	The bids will be opened on 04th May 2021, 11:30am in the presence of bidders
	12.2	Bids will be opened at: Fenaka Corporation Limited

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		Hilaalee Magu, K. Male', Republic of Maldives
	12.3	Bids received electronically will not be accepted
13. Bid Rejection	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. Documents Comprising the Bid* (except *9.5 Experience letters*) and that do not comply with *10. Format of Bid* are subjected to be rejected
D. Awarding of Contract		
14. Payment Terms	14.1	An advance will not be released for this project
	14.2	5% retention will be released 01 month after expiry of the warranty period and after issuing of certificate of completion.
	14.3	All necessary repairs shall be done to the satisfaction of the Client's consultant or engineers before this payment is released.
	14.4	Payment plan should not be less than 18 months
15. Factory Acceptance Testing	15.1	The generator shall be fully tested at the manufacturer workshop in the presence of Client's appointees via video conferencing.
	15.2	The testing shall be conducted at internationally accepted testing standards
	15.3	The generator shall be checked for dimension, the supplier shall provide that dimensions of the panel during the virtual factory acceptance testing.
	15.4	Generator should be tested to run at 25%, 50%, 75%, 100%, and 110% of rated load and power factor until the engine temperature stabilized for 30 minutes, and should check the protections below: - Lub oil low level (alarm testing) - Lub oil low pressure (alarm testing)

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	- Earth fault (alarm testing) - Over current (alarm testing) - High temperature (alarm testing) - Cooling system (alarm testing) - High voltage pressure (alarm testing) - All the functioning tests and routine tests should be done
	15.3 All the protections should work properly, it should be examined for oil and coolant leaks, and it should be visually tested and secured
	15.4 The remote radiator should operate continuously 100% in a 50-degree ambient temperature - It should be designed with vertical air discharge remote radiator with motor and fan - It should include all the generator connection pipes, accessories, joints and diagrams - The radiator should be developed remotely from the engine providing an added flexibility cooling system, and to be installed at the desired location - It should be designed with lower power consumption, and high efficiency aero foil designed fans are used - It must be designed with lower noise levels - The radiator core should be formed using high efficiency fin profile - The thickness of connection pipes must be in a range of 2mm to 4mm

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Section II: Evaluation Criteria

Proposal Cost: 70 points for the lowest price

- *(Lowest price / proposed price) x 70*

Delivery: 20 points for the lowest delivery period

- *(Lowest delivery period / proposed delivery period) x 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

- *(Proposed credit period / longest credit period) x 10*

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Section III: Technical Specifications

#	DESCRIPTION	QTY
1	350kW Generator set	01
2	400kW Generator set	04

*Please note that the below specifications are for one unit only.

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SPECIFICATION FOR 350 kW Generator Set(2019)

S/N:	Description	Unit	Qty
1	350 kW prime rated diesel generator set with parameters 0.8 P.F, 415kV, 3 Phase, 4 wires, 50 Hz at 1500 r.p.m. Powered by Internationally reputed brand engine coupled with internationally reputed brand Alternator. The Generator set shall be powered by a Branded engine origin or assembled/manufactured by an Original Company's Licenced OEM manufactured/assembler. The engine must produce a mechanical power output (kW_m) which should meet the required electric power (kW_e) of 350kW and must be coupled with a 350kW Alternator with pre-installed Droop CT and a control connection box.(termination box to connect control cables and power cables) **Engine to be complete with following auxilliary items :** • Heavy electrical flywheel • SAE flywheel housing • Air filters, Lubricating Oil Filters, Fuel Filters and all other such filter required for operation of the engine • Low lubricating oil pressure switch • High engine temperature switch • lub oil sender • Water Temperature Sender • All necessary items to run and to protect the engine • **Starting equipment fitted to engine, consisting of :** ▪ 24 Volt charging altenator (Brushless) ▪ 24 Volt starting motor ▪ Fuel Shut-off solenoid ▪ Heavy duty lead acid batteries, supplied in a dry charged condition • **Governing System** The engine to be fitted with a close tolerance Electronic Governing system, which should include efc, actuators, magnetic pickups, etc, including wiring • **Cooling Equipment** Cooling equipment compromising a heavy-duty tropical radiator, together with pusher type cooling fan and guards to be fitted. The radiator core should be elecroplated with silver solder tin plated to prevent early failure due to corrosion. Coupon plated radiators are acceptable. Radiator has to be mounted on vibration mounts with enough strength to withstand the radiator and vibrations. Radiator must be designed to adequately cool the generator at an ambient temperature of 50ºC • **Exhaust system** 450 mm of stainless steel bellow type flexible exhaust, together with suitable flanges and fittings shall be supplied for each silencer. • **Alternator**	1	No

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	The alternator shall be brushless revolving type altenator, having class H insulation on both the stator and field windings. It shall be built and rated to BS 5000, tropically impregnated with voltage regulation being in the order of +/- 1.5% from no load to full load under the steady state conditions assuming a speed variation not exceeding 4% on the engine. Anti-Condensation Coil to be fitted in the Alternator. • **Generator arrangement and drive** The simplex type base plate is of heavy duty rolled steel constructed, bolted and electrically welded, drilled on the underside to allow the fitting of foundation bolts. The engine and the alternator are to be mounted on a base plate and vibration mounts to be mounted underside of the base plate. The vibration mounts are to be supplied as loose item. • **Finishing** After assembling the genset zinc coated self-etching primer should be applied to the complete set.		
1.2	**Fuel system** A fuel day tank of 12 hours capacity complete with level indicator, drain plug, filler, fuel return with fuel outlet connections and a fuel filter fitted with outlet connection is to be mounted.These mounts are are to be suuplied as loose item. All necessary fittings to be supplied in conformity with fuel flow diagram.	1	No
1.3	**Factory testing** The generator should be fully tested at the manufacturer workshop in the presence of client/apointees to check the ratings,overload,functional tests on a dummy load prior to dispatch ***in case the bidder is unable to provide factory test*** as required the bidder shall provide an extended warranty of one extra year than mentioned in iteme no 1.6 of this document.	1	No
1.4	**Literature and drawings consisting of :** • 1 No x Manual on How to handle the generation equipment • 1 Nos x Electrical wiring diagram • 1 No x Engine operation and maintenance manual • 1 No x Engine parts catalogue • 1 No x Generator parts catalogue • 1 No x Generator operation and maintenace manual • 1 No x Generator AVR manual • 1 No x Governor control unit manual • 1 No x Engine shop manual	1	Lot
1.5	**Accessories**		
	The Components shall meet the British Standard and ISO standards. Items are for the above mentioned generator sets.		
1.5.1	Primary silencer barrel **(to match engine exhaust)**	1	No
1.5.2	Secondary silencer barrel **(to match engine exhaust)**	1	No
1.5.3	3m Exhaust pipe dia **(to match engine exhaust)**	2	No
1.5.4	Elbows having dia **(to match the engine exhaust)**	6	No
1.5.5	Flanges having dia **(to match the engine exhaust)**	4	No
1.5.6	Bolts, Nuts and Washers for the Flanges. (Each set shall include 1 bolt, 2 washers,1spring washer 2 Nuts)	1	Lot
1.5.7	Split type rockwool insulation lagging suitable for 75 to 125mm dia. Exhaust pipes. The lagging shall be covered with High Quality Aluminium foil.	1	Lot
1.6	**Warranty**		

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	Generator set should carry a warranty of one year from the date of commisioning	1	Lot

Documents Required for technical evaluation

- technical data sheets of engine
- technical data sheets of Alternator
- datasheets specifying cooling system rated at ambient temperature 50ºC
- Certificate of Authenticity specifying manufacturer /Assembler is an OEM of a genuine reputed international Engine Brand

Note : Proposal that do not conform to the given technical specification shall be rejected.

Prepared and checked by :

Technical Services & Green Energy Department

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SPECIFICATION FOR 400Kw Generator Set

S/N:	Description	Unit	Qty
1	400 kW prime rated diesel generator set with parameters 0.8 P.F, 415 Volts, 3 Phase, 4 wires, 50 Hz at 1500 r.p.m. Powered by Cummins engine coupled with Stamford Alternator. The Generator set shall be powered by a Cummins engine origin (UK, USA) or assembled/manufactured by an Original Cummin's Licenced OEM manufactured/assembler. The engine must produce a mechanical power output (kW_m) which should meet the required electric power (kW_e) of 400kW and must be coupled with a400kW Stamford Alternator with pre-installed Droop CT and remote mounted control panel. The controller should be Deepsea model: 8810 engine controller. Motorised TP, 800A ACB c/w UVT Coil AC 230 V, brand "MERLIN GERIN") or equivalent. **Engine to be complete with following auxilliary items :** • Heavy electrical flywheel • SAE flywheel housing • Air filters, Lubricating Oil Filters, Fuel Filters and all other such filter required for operation of the engine • Low lubricating oil pressure switch • High engine temperature switch • lub oil sender • Water Temperature Sender • All necessary items to run and to protect the engine • **Starting equipment fitted to engine, consisting of :**	1	No
	▪ 24 Volt charging altenator (Brushless) ▪ 24 Volt starting motor ▪ Fuel Shut-off solenoid ▪ Heavy duty lead acid batteries, supplied in a dry charged condition • **Governing System** The engine to be fitted with a close tolerance Cummins Electronic Governing system, which should include efc, actuators, magnetic pickups, etc, including wiring • **Cooling Equipment**		
	Cooling equipment compromising a heavy-duty tropical radiator, together with pusher type cooling fan and guards to be fitted. The radiator core should be elecroplated with silver solder tin plated to prevent early failure due to corrosion. Coupon plated radiators are acceptable. Radiator has to be mounted on vibration mounts with enough strength to withstand the radiator and vibrations. Radiator must be designed to adequately cool the generator at an ambient temperature of 50ºC. • **Exhaust system** 450 mm of stainless steel below type flexible exhaust, together with suitable flanges and fittings shall be supplied for each silencer. • **Alternator** The alternator shall be brushless revolving type altenator, having class H insulation on both the stator and field windings. It shall be built and rated to BS 5000, tropically impregnated with voltage regulation being in the order of +/- 1.5% from no load to full load under the steady state conditions assuming a speed variation not exceeding 4% on the engine. Anti-Condensation Coil to be fitted in the Alternator. • **Generator arrangement and drive**		

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	The simplex type base plate is of heavy duty rolled steel constructed, bolted and electrically welded, drilled on the underside to allow the fitting of foundation bolts. The engine and the alternator are to be mounted on a base plate and vibration mounts to be mounted underside of the base plate. The vibration mounts are to be supplied as loose item. • **Finishing** After assembling the genset zinc coated self-etching primer should be applied to the complete set.		
1.2	**Fuel system** A fuel day tank of 12 hours capacity complete with level indicator, drain plug, filler, fuel return with fuel outlet connections and a fuel filter fitted with outlet connection is to be mounted.These mounts are are to be suuplied as loose item. All necessary fittings to be supplied in conformity with fuel flow diagram.	1	No
1.3	**Factory testing** The generator should be fully tested at the manufacturer workshop in the presence of client/apointees to check the ratings,overload,functional tests on a dummy load prior to dispatch *in case the bidder is unable to provide factory test* as required the bidder shall provide an extended warranty of one extra year than mentioned in iteme no 10 of this document.	1	No
1.4	**Literature and drawings consisting of :** • 1 No x Manual on How to handle the generation equipment • 1 Nos x Electrical wiring diagram • 1 No x Engine operation and maintenance manual • 1 No x Engine parts catalogue • 1 No x Generator parts catalogue • 1 No x Generator operation and maintenace manual • 1 No x Generator AVR manual • 1 No x Governor control unit manual • 1 No x Engine shop manual	1	Lot
1.5	Accessories		
	The Components shall meet the British Standard and ISO standards. Items are for the above mentioned generator sets.		
1.5.1	Primary silencer barrel (to match engine exhaust)	1	No
1.5.2	Secondary silencer barrel (to match engine exhaust)	1	No
1.5.3	3m Exhaust pipe dia (to match engine exhaust)	2	No
1.5.4	Elbows having dia (to match the engine exhaust)	6	No
1.5.5	Flanges having dia (to match the engine exhaust)	4	No
1.5.6	Bolts, Nuts and Washers for the Flanges. (Each set shall include 1 bolt, 2 washers,1spring washer 2 Nuts)	1	Lot
1.5.7	Split type rockwool insulation lagging suitable for 75 to 125mm dia. Exhaust pipes. The lagging shall be covered with High Quality Aluminium foil.	1	Lot
1.6	**Warranty** Generator set should carry a warranty of one year from the date of commisioning	1	Lot

Documents Required for technical evaluation

- technical data sheets of engine
- technical data sheets of Alternator
- datasheets specifying cooling system rated at ambient temperature 50ºC
- Certificate of Authenticity specifying Assembler is a Cummins OEM

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