



Ministry of Finance  
Ameenee Magu, Male', Republic of Maldives

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CLARIFICATION 01

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ނަންބަރު No:	TES/2021/G-013-R02	
ޕްރޮޖެކްޓް Project:	Design, Build and Supply of Solar Powered-Battery Operated GRP Made Catamaran Type Passenger Ferry including Support for Operation, Maintenance and Training - 2 <sup>nd</sup> Retender	
ޕްރޮޖެކްޓް Issued Date	19 <sup>th</sup> July 2022	
ސަފުހާގެ އަދަދު No. of Pages: -04	ޕްރޮޖެކްޓް Boq: -00	ޖަވާބު Drawings: -00

Please include this clarification when submitting the bid

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- Please find attached, answers to the queries received.

ނަންބަރު  
Name: Fathimath Rishfa Ahmed

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Signature:



**CLARIFICATION 01**

#	Document Name	Document Reference	Query	Response
1			<p>I suggest you to eliminate some limit at this BID.</p> <p>Example construction material (Fiber glass) is not the ideal for electric Boats, other can be used as Aluminium as example.</p> <p>Also, there are not other important specific:</p> <p>Dimension                      Passenger number                      Autonomy                      Example of trips (number per day each boat and trip distance with daily total distance)                      Operative speed requested</p>	<p>Please refer to Section 6 - Schedule of Supply in the bid document:</p> <p>Construction Materials: The vessel will be built as a GRP catamaran boat with GRP cross-structure of adequate strength. The superstructure will be constructed out of Marine grade GRP. Good quality glass mat and resin conforming to classification society standards will be used for the lay-up. Standard practices conforming to classification society rules will be adhered to during the moulding process. The hulls, cross-structure and main transverse bulkheads will be built of GRP complying with classification society requirements in general. Hull and cross-structure will be transversely framed with frame spacing as per classification society rules. The hull will be of single-bottom construction. All opening in decks/bulkheads will have rounded corners complying with classification society requirements. Continuity of structural members will be maintained. Bidder/Firm should optimize the vessel for low propulsive power and it must submit power curve for speed of 5,6,7,8 knots.</p> <p>Dimension: Size of the Ferry: 20m (L) x 7 m (W) equipped with seating arrangement for minimum 75 passengers and 3 crew members. The dimensions, quality and leg room of the seating arrangement will ensure a comfortable ride to the passengers.</p> <p>Passenger number: 75 Pax + 3 crews</p> <p>Autonomy: Lithium-iron phosphate type battery bank of minimum capacity 100 kWh (One hundred-kilowatt hour)</p>



				<p>Example of trips (number per day each boat and trip distance with daily total distance): It will be decided by the battery capacity, sunshine, current, wind and waves. It should be able to make 25 - 30 trips of 2 - 3 km distance ion a day</p> <p>Operative speed requested: The vessel shall be designed and constructed to operate at a speed of maximum 8 Knots.</p>
2			<p>Technical Specifications - Battery Bank</p> <p>We note that during the meeting NMC/NCA were suggested as alternatives to Lithium-ion phosphate battery banks as required in the specifications. We would note that Lithium-ion phosphate battery chemistry is one of the safest chemistries for marine applications compared to NMC/NCA which can suffer “thermal runaway” leading to fire or possibly explosion. We would not therefore recommend alternatives to Lithium-ion phosphate battery banks which are proven to be suitable for a marine environment and approved along with the suitable motors by one of the following leading classification societies (IRS/DNV/ABS/LR/NK/BV).</p> <p>Please therefore confirm that the requirement for only a Lithium iron phosphate battery bank will remain to ensure the safety of the product being supplied.</p>	<p>Please refer to Section 6 - Schedule of Supply in the bid document:</p> <p>Lithium-iron phosphate type battery bank of minimum capacity 100 kWh (One hundred-kilowatt hour) will be provided as the energy storage option.</p> <p>Marine grade Lithium–iron phosphate batteries with type approval from any of the following classification societies IRS/DNV GL/ABS/LR/NK/BV will be provided as the energy storage medium. Batteries will be certified in accordance to IEC standard 62133-2: 2017 and or UL1642.</p>
3			<p>Evaluation and Qualification Criteria - Proven Design 2.3.2 Technical Experience</p>	<p>2.3.2 will remain unchanged.</p>



			<p>Given the safety of the 75 PAX + 3 Crew with the ferry being used in marine conditions at a higher sea state then we feel it is important that the Experience Criteria is not diluted and the vessel design should be proven. We therefore would not recommend that 2.3.2 Technical Experience should not be changed but remain as a minimum requirement.</p> <p>Please therefore confirm that the requirement for 2.3.2 Technical Experience will remain to ensure the safety of the product being supplied.</p>	
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