



CLARIFICATION 1

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ނަންބަރ No:	TES/2023/G-012	
ފްރޮޖެކްޓް ނަންބަރ Project:	Design, Supply and Installation of Battery Energy Storage Systems and Energy Management Systems in 18 islands across Maldives	
ޕްރިންޓް ޖެޓް Issued Date	26 <sup>th</sup> September 2023	
ސަފުހާ ގެ އަދަދު No. of Pages: -22	ބޯޕް ގެ އަދަދު Boq: -00	ޑްރޯޕިންގް ގެ އަދަދު Drawings: -00

Please include this clarification when submitting the bid

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- Please find attached, answers to the queries received.

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Name: Fathimath Rishfa Ahmed

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Signature:





## CLARIFICATION 1

#	Document Name	Document Reference (Section no/page no etc)	Query	Response
1			<p>We refer to the announcement no. (IUL)13-K/13/2023/266, Project No. TES/2023/G-012.</p> <p>We would like to clarify the reference number to insert in the "Power of Attorney" &amp; "Bid Security" document template.</p> <p>We would like to know if the reference is (IUL)13-K/13/2023/266 or TES/2023/G-012 ?</p>	<b>TES/2023/G-012</b>
2			<p>We have registered with the Ministry of Finance for this project under our company name only, but we will participate the tender in the form of Joint Venture, kindly please clarify that shall we re-register in the name of the bidder (JV)?</p>	<b>Bidder need not re-register. But bidder should inform of this change to Ministry of Finance.</b>
3			<p>According to the technical requirements that some islands have low-voltage (400V) and medium-voltage (11kV) distribution grids, but some islands have only low-voltage (400V) distribution grids. So, is the energy storage system uniformly connected to the low-voltage (400V three-phase four-wire) distribution network?</p>	<b>Yes. Connect to low voltage distribution network.</b>
4			<p>The AC side of the storage inverter can output 400V (three-phase four-wire), is it necessary to configure an</p>	<b>Isolation transformer not required</b>

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		isolation transformer on the AC side of the inverter?	
5		As per the description in the BD that "A redundant inverter air-conditioning system shall be provided in which the failure of one system will not result in the complete failure of the battery system". Should this be configured as two full-power air-conditioning units?	<b>Two full-power air-conditioning units</b>
6		As per the description in the BD that "an additional fiber optic cable shall be installed between the power generation equipment room and the island committee." Is it for the Island committee on the corresponding island and the fiber optic cable will not cross the sea? Could you please provide the approximate distance between the power generation equipment room and the island committee? The actual distance will affect the usage and price.	<b>Fiber optic cable will not cross the sea.</b>  <b>Approximate distance between the power generation equipment room, on average less than 1km.</b>
7		Regarding the recycling certificate, when batteries reach the end of their life, they must participate in the manufacturer's recycling program. Transportation and shipment costs will be borne by the Owner. The bidder shall provide a certificate attesting to the manufacturer's agreement to receive and recycle lithium-ion batteries in accordance with applicable international standards. Is there a recycling certificate?	<b>The bidder is responsible to submit a recycling certificate.</b>
8		The PCMS will be fully compatible with the existing D-hybrid centralized SCADA located in Male,	<b>The winning bidder to identify the requirements</b>

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		what are the specific aspects that need to be compatible?	
9		Is there a scheduling relationship between PCMS and existing centralized SCADA?	<b>Yes</b>
10		Whether the main hybrid controller is the PCMS? If yes, is the control of power and voltage regulation determined by the PCMS itself or does it accept scheduling?	<b>Control the power and voltage by PCMS</b>
11		Is it necessary to supply programmable logic controllers (PLCs) ? Is it feasible not to use PLCs?	<b>Programmable logic controllers required</b>
12		Could you please provide the situational details and hydrology information of the islands to be constructed?	<b>For bidding purposes not required</b>
13		Details information of the Payment terms such as payment collection, percentage of the advance payment and interim payment application and measurement rules ...etc.	<b>Please refer to the bidding document</b>
14		For financial eligible criteria, do we need to provide contract performance on an equivalent project or scale volume?	<b>Please refer to the bidding document</b>
15		What is the total amount of payment certified?	<b>Please refer to the bidding document</b>
16		In the Bidding form, the Schedule No. 2: Plant and Mandatory Spare Parts Supplied from Within the Employer's country mean that have to be purchased in Maldives or can be purchased from other counties that have been approved by the Government of the Maldives?	<b>Employer's country means things purchased from Maldives.</b>





17	Evaluation and Qualification Criteria	SOC %: State of Charge, corresponding to remaining usable capacity of battery in % in kWh against initial capacity of battery in kWh, guaranteed after battery is charged and discharged Nc number of times	Bidder understands the given definition against State of Charge refers to State of Health & SOC must be changed to SOH in the formula of LUC	<b>State of Charge, corresponding to remaining usable capacity of battery in % in kWh against initial capacity of battery in kWh, guaranteed after battery is charged and discharged Nc number of times.</b>
18	Evaluation and Qualification Criteria	Pbid [USD] : Total bid price in USD	Bidder understands that Pbid is summation of Schedule 1 to 5 only Pbid = Price in Schedule 1 + Price in Schedule 2 + Price in Schedule 3 + Price in Schedule 4 + Price in Schedule 5 (O&M cost for first 2 Years)  Pbid doesn't not include Price in schedule 7 (Recommended Spare parts)  Client to advise on whether Price in Schedule 1 includes Taxes & Duties or not	<b>Bidder understanding is correct.</b>  <b>Price bid does not include price of schedule 7.</b>  <b>Price in schedule 1 does not include taxes and duties.</b>
19	Evaluation and Qualification Criteria	PBESS [USD] : The total price of "BESS and related equipment" in USD, put by the bidder including cost of Installation of BESS and related equipment and BESS housing	Bidder requests client to provide clear definition for BESS and related equipment  Client to advise on whether PBESS includes Taxes & Duties or not	<b>BESS means Battery Energy Storage System and equipment's required for installation and functioning of the system.</b>  <b>Supply component does not include Tax and duties but installation component includes.</b>
20	Evaluation and Qualification Criteria	Figure: Concept of SoC and Nc	Bidder understands SoC needs to be changed to SoH	<b>State of Charge, corresponding to remaining usable capacity of battery in % in kWh against initial capacity of battery in kWh, guaranteed after battery is charged and discharged Nc number of times.</b>
21	Evaluation and Qualification Criteria	Time to complete the plant and services from the effective date specified in Article 3 of the Contract Agreement for determining the time for completion of pre-	Bidder understands requirement for completing works & services is 360 days <b>from signing of contract (as per "effective date" definition provided in GCC).</b>	<b>Not possible</b>





		commissioning activities is: 360 days	Bidder requests client to revise the Time Schedule to 540 days.	
22	Evaluation and Qualification Criteria	Cycle of lithium-ion battery cells applied in BESS shall be a minimum of 6,000 cycles, at DOD (depth of discharge) 80% or above at rated power, and the remaining battery capacity (SOC, State of Charge) shall be equivalent or above 80% at the end of the above life cycle.	Bidder Proposes Cycle of lithium-ion battery cells applied in BESS shall be a minimum of 6,000 cycles, at DOD (depth of discharge) 80% or above at rated power, and the remaining battery capacity ( <b>SOH, State of Health</b> ) shall be equivalent or above <b>60%</b> at the end of the above life cycle.	<b>Lower SoC/SoH means higher LUC.</b>
23	Evaluation and Qualification Criteria	Participation as a contractor, Joint Venture partner, or Subcontractor, in at least two contracts that have been satisfactorily and substantially completed within the last 5 years and that are similar to the proposed contract, where the value of the Bidder's participation under each contract exceeds \$ 25,200,000. The similarity of the Bidder's participation shall be based on: 1. Physical Size of work 2. Nature of Work 3. Complexity of work 4. Methods 5. Technology or other characteristics as described in Section 6 (Employer's Requirements).	Bidder finds disparity between Qualification criteria mentioned in <b>Section 3 - 3.4.1 Contracts of Similar Size and Nature</b> and <b>Section 3 - 3.4.2 Experience in Key Activities (Table A)</b>  <b>Section 3 - Clause 3.4.2 (Table A)</b> asks for a minimum capacity of 500 kWh while <b>Section 3 - Clause 3.4.1</b> asks for each contract (at least 2) with value of 25.2 Million USD.  Bidder feels 25.2 Mn. USD per Contract is disproportionate against 500 kWh requirement & requests Client to clarify the following Point:  1. Can Bidder showcase Renewable projects (such as Solar PV) that have value \$25.2 Million or more as Contracts of Similar Size and Nature for Qualification purpose under <b>Section 3 - 3.4.2 (Table A)</b>	<b>Our requirement is correct.</b>  <b>1- Battery shall be included</b>
24	Evaluation and Qualification Criteria	For the above or other contracts executed during the period stipulated in 3.4.1 (5 Years), a minimum experience in the following key	Bidder requests client to change the requirement as follows  For the above or other contracts	<b>Not possible to change</b>





		<p>activities:</p> <p><b>Lithium-ion battery manufacturer:</b></p> <p>Must be in the relevant manufacturing business within the last five (5) years</p>	<p>executed during the last 3 Years, a minimum experience in the following key activities:</p> <p><b>Lithium-ion battery manufacturer:</b></p> <p>Must be in the relevant manufacturing business within the last three (3) years</p>	
25	Bidding Forms	<p>Schedule No. 1: Plant and Mandatory Spare Parts Supplied from Abroad</p> <p><i>"TOTAL Column 8 to be carried forward to Schedule No. 6: Grand Summary"</i></p>	<p>Bidder Understands Column 8 doesn't include Taxes &amp; Duties which are Quoted in column 9 (Taxes &amp; Duties of Schedule No. 1)</p> <p>Since Schedule 6 (b) indicates "Taxes and/or duties from Schedules 1 and 2 may be added to the contract price in accordance with GCC 14 (Taxes and Du-ties)"</p> <p>Bidder requests client to reframe the point <i>"TOTAL Column 8 to be carried forward to Schedule No. 6: Grand Summary"</i></p>	<b>Please follow as described in the schedules.</b>
26	General Conditions of Contract	<p>7.3 In addition to the supply of Mandatory Spare Parts included in the Contract, the Contractor agrees to supply spare parts required for the operation and maintenance of the Facilities for the period specified in the SCC and the provisions, if any, specified in the SCC. However, the identity, specifications, and quantities of such spare parts and the terms and conditions relating to the supply thereof are to be agreed between the Employer and the Contractor, and the price of such spare parts shall be that given in</p>	<p>Bidder requests client to change Price Schedule No. 6 to Price Schedule No. 7</p>	<b>Please follow schedules as provided.</b>





		Price Schedule No. 6, which shall be added to the Contract Price. The price of such spare parts shall include the purchase price therefore and other costs and expenses (including the Contractor's fees) relating to the supply of spare parts.		
27	General Conditions of Contract	9.3 The Contractor shall acquire and pay for all permits, approvals, and/or licenses from all local, state, or national government authorities or public service undertakings in the country where the Site is located, which such authorities or undertakings require the Contractor to obtain in its name and which are necessary for the performance of the Contract, including, without limitation, visas for the Contractor's and Subcontractor's personnel and entry permits for all imported Contractor's Equipment. The Contractor shall acquire all other permits, approvals, and/or licenses that are not the responsibility of the Employer under GCC Subclause 10.3 hereof and that are necessary for the performance of the Contract.	Bidder requests Client to detail on all the permits, approvals & licenses to be obtained by contractor	<b>It is the responsibility of the bidder.</b>
28	Contract Forms	The Contractor is free to choose the seaport of entrance. There are three of these seaports. Upon arrival at one of these ports <b>the Employer will take care of clearance.</b> After clearance it is the Contractor's obligation to continue delivery up to the final destination at the respective islands. The seaports have limited availability to rearrange the supply into smaller consignments suitable	Bidder requests client to elaborate the point " the Employer will take care of clearance"	<b>The client will only provide customs duty exemption letter. It is the responsibility of the bidder to pay the clearance charges and delivery to the project site.</b>





		for the islands. Some islands have limited lifting facilities.		
29	Contract Forms	O&M Payment Terms	Bidder request client to append the O&M payment terms for (A) Terms of Payment. Bidder understands that O&M payment terms will usually be on Quarterly/Monthly basis.  Kindly respond whether payment is made on Quarterly/Monthly basis during O&M.	<b>Quarterly based on the services provided.</b>
30	Contract Forms	The Contractor is free to choose the seaport of entrance. There are three of these seaports. Upon arrival at one of these ports <b>the Employer will take care of clearance.</b> After clearance it is the Contractor's obligation to continue delivery up to the final destination at the respective islands. The seaports have limited availability to rearrange the supply into smaller consignments suitable for the islands. Some islands have limited lifting facilities.	Bidder requests client to elaborate the point " the Employer will take care of clearance"	<b>The client will only provide customs duty exemption letter. It is the responsibility of the bidder to pay the clearance charges and delivery to the project site.</b>
31	Contract Forms	If the production capacity of the facilities attained in the guarantee test, pursuant to GCC Subclause 25.2, <b>is less than the guaranteed figure specified in para. 3.1</b> above, but the actual production capacity attained in the guarantee test is not less than the minimum level specified in para. 4.3 below, and the Contractor elects to pay liquidated damages to the Employer in lieu of making changes, modifications and/or additions to the Facilities, pursuant to GCC Subclause 28.3, then the Contractor shall pay	As per the para 3.1 of Section 9 - Appendix: 8 " 3.1 Production Capacity " is only provided but the maximum limit value (guaranteed figure) is missing.  Bidder requests client to provide maximum limit value (guaranteed figure)	<b>Section 9 4.3 Minimum Levels Notwithstanding the provisions of this paragraph, if as a result of the guarantee test(s), the following minimum levels of performance guarantees (and consumption guarantees) are not attained by the Contractor, the Contractor shall at its own cost make good any deficiencies until the Facilities reach any of such minimum performance levels, pursuant to GCC Subclause 28.2: (a) production capacity of the Facilities attained in the guarantee test: 95% of the guaranteed production capacity</b>

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		liquidated damages at the rate of 5% for every complete 1% of the deficiency in the production capacity of the Facilities, or at a proportionately reduced rate for any deficiency, or part thereof, of less than a complete 1%.		and/or <b>(b) average total cost of consumption of all the raw materials and utilities of the Facilities: 105% of the guaranteed figures.</b>
32	Contract Forms	If the production capacity of the facilities attained in the guarantee test, pursuant to GCC Subclause 25.2, is less than the guaranteed figure specified in para. 3.1 above, but the actual production capacity attained in the guarantee test is not less than the minimum level specified in para. 4.3 below, and the Contractor elects to pay liquidated damages to the Employer in lieu of making changes, modifications and/or additions to the Facilities, pursuant to GCC Subclause 28.3, then the Contractor shall pay liquidated damages at the rate of 5% for every complete 1% of the deficiency in the production capacity of the Facilities, or at a proportionately reduced rate for any deficiency, or part thereof, of less than a complete 1%.	Bidder requests Client to provide a formula Notation for better understanding of Liquidated Damages  "5% for every complete 1% of the deficiency in the production capacity of the Facilities, or at a proportionately reduced rate for any deficiency, or part thereof, of less than a complete 1%."	<b>The proposed wording for "Failure in Guarantees and Liquidated Damages" is intended to explain two cases: a) 5% for every 1% of deficiency in the production capacity and b) for deficiencies less than 1%, the contractor shall pay a proportional rate from 0% to 5% where the deficiencies vary from 0% to 1%. A deficiency of 0.5% implies a liquidated damaged of 2.5%.</b>
33	Contract Forms	If the actual measured figure of specified raw materials and utilities consumed per unit (or their average total cost of consumption) <b>exceeds the guaranteed figure</b> specified in para. 3.2 above (or their specified average total cost of consumption), but the actual consumption attained in the guarantee test, pursuant to GCC Subclause 25.2, is not more	As per the para 3.2 of Section 9 - Appendix: 8 " 3.2 Raw Materials and Utilities Consumption " is only provided but the maximum limit value (guaranteed figure) is missing.  Bidder requests client to provide maximum limit value (guaranteed figure)	<b>Functional Guarantees for Raw Materials and Utilities Consumption does not apply in this tender.</b>

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		than the maximum level specified in para. 4.3 below, and the Contractor elects to pay liquidated damages to the Employer in lieu of making changes, modifications and/or additions to the Facilities pursuant to GCC Subclause 28.3, then the Contractor shall pay liquidated damages at the rate of 5% for every complete 1% of the excess consumption of the Facilities, or part thereof, of less than a complete 1%.		
34	Contract Forms	If the actual measured figure of specified raw materials and utilities consumed per unit (or their average total cost of consumption) exceeds the guaranteed figure specified in para. 3.2 above (or their specified average total cost of consumption), but the actual consumption attained in the guarantee test, pursuant to GCC Subclause 25.2, is not more than the maximum level specified in para. 4.3 below, and the Contractor elects to pay liquidated damages to the Employer in lieu of making changes, modifications and/or additions to the Facilities pursuant to GCC Subclause 28.3, then the Contractor shall pay liquidated damages at the rate of <b>5% for every complete 1% of the excess consumption of the Facilities, or part thereof, of less than a complete 1%.</b>	Bidder requests Client to provide a formula Notation for better understanding of Liquidated Damages  "5% for every complete 1% of the excess consumption of the Facilities, or part thereof, of less than a complete 1%.."	<b>Section 9</b> <b>4.3 Minimum Levels</b> <b>Notwithstanding the provisions of this paragraph, if as a result of the guarantee test(s), the following minimum levels of performance guarantees (and consumption guarantees) are not attained by the Contractor, the Contractor shall at its own cost make good any deficiencies until the Facilities reach any of such minimum performance levels, pursuant to GCC Subclause 28.2:</b> <b>(a) production capacity of the Facilities attained in the guarantee test: 95% of the guaranteed production capacity and/or</b> <b>(b) average total cost of consumption of all the raw materials and utilities of the Facilities: 105% of the guaranteed figures.</b>
35	Employers Requirement	An ariel view of the islands are provided below	Please provide ariel view of Gaff aliu aftoll and Gaffu dhalu atfoll	<a href="https://maps.app.goo.gl/cny5V1AmRm7JSKnZ6">https://maps.app.goo.gl/cny5V1AmRm7JSKnZ6</a>

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36	Employers Requirement	Battery storage system with batteries, bi-directional battery inverters (if applicable grid building inverters), battery racks, battery management and monitoring system and controller, UPS, DC cabling, AC cabling, communication cables, earthing, AC distribution boards, DC distribution boards, electricity meters and sensors, electrical connection to the existing system. The system must have compatible provision to share live data with the centralised SCADA system.	Please provide existing electrical system/Grid SLD or evacuation information.	<b>Not required at bidding stage</b>
37	Employers Requirement	Energy Management System capable of integrating and synchronising the existing Diesel generators and it must be compatible with the centralised SCADA system to exchange live data.	Please provide the existing centralized SCADA system details for interconnection of BESS system.	<b>Not required at bidding stage</b>
38	Employers Requirement	Integration of the systems into the existing distribution grid. It is within the Contractors responsibility to modify the actual distribution grid to be compliant with the new BESS system.	Please provide the existing distribution system details for better analyzation.	<b>Not required at bidding stage</b>
39	Employers Requirement	During the day, the PV and battery system provides 100% of the load and charges the battery. If battery is fully charged and PV output power is higher than the loads in the system, the PV power can be curtailed by frequency droop control and additionally commands via FOC connection.	Please share. 1.Please share the detailed Hourly load profile of the Each island. 2.Please share Number of BESS operational cycles per day and per year ?	<b>Not required at bidding stage</b>
40	Employers Requirement	The communication between the hybrid system controller (located in the powerhouse) and the PV inverters can be performed via	Please provide the distance between Powerhouse and PV Inverters Location for each island.	<b>Less than 2km</b>



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		frequency droop to curtail the active power when needed. Additionally, a data communication cable between the inverters and the Hybrid System Controller shall be installed for command and SCADA purposes.		
41	Employers Requirement	Each island runs with minimum of three diesel generators. It is out of the scope of this tender to install new diesel generator However, the contractor is responsible to integrate the existing Diesel gen sets within the EMS of the Hybrid energy mini grid and provide main signals to the central SCADA. Furthermore, EMS shall not be limited by number/size/model of diesel generators and shall be able to accommodate future changes in number of DG's and size.	Please provide existing DG Datasheet/Manual for design and integrate the existing Gensets to EMS	<b>Not required at bidding stage</b>
42	Employers Requirement	A map of the island and location of the buildings with available roof and powerhouse is provided in the next figure.	Please share the KMZ file for Proposed BESS plant, PV, DG and Powerhouse.	<b>Not required at bidding stage</b>
43			Please share the Detailed powerhouse layout and overall system SLD.	<b>Not required at bidding stage</b>
44 45	Employers Requirement	3 Diesel Generators of different sizes are currently installed on the island. The powerhouse in this Island has four diesel generators that supply the load requirements of the island.	In Employers requirement states that 3 DG currently installed in Powerhouse island, and in operation profile curve graph is showing power output of 3 DGs only, But in grid infrastructure clause says powerhouse of island have 4 generators for supply of load. Please clarify the capacity of the fourth generator for detailed understanding of operation profile. (for all islands)	<b>Size varies depending on the demand.</b>





46	Employers Requirement	Battery technology- Lithium Ion	Bidder proposes LFP (Lithim Ferrous phosphate) batteries. Kindly conform.	<b>Lithim Ferrous phosphate batteriess are acceptable</b>
46	Employers Requirement	Communication protocol with the Main Hybrid Controller: Modbus	Please share the Comm Protocols of PV,BESS and DG to integrate with Hybrid controller	<b>To be shared at the design stage</b>
47	Employers Requirement	The battery must be able to provide a minimum of 6000 (Six thousand) cycles at 80% of DoD at 25°C. End of Life shall be 60% of initial capacity. The guaranteed cycle life shall be depending on the energy throughput. The Bidder shall provide a lifetime graph from the manufacturer, showing number of cycles vs. DoD.	Bidder proposes "The battery must be able to provide a minimum of 6000 (Six thousand) cycles at <b>95%</b> shall be 60% of initial capacity. The guaranteed cycle life shall be depending on the energy throughput. The Bidder shall provide a lifetime graph from the manufacturer, showing number of cycles vs. DoD".	<b>The battery must be able to provide a minimum of 6000 (Six thousand) cycles at 80% of DoD at 25°C. End of Life shall be 60% of initial capacity. The guaranteed cycle life shall be depending on the energy throughput. The Bidder shall provide a lifetime graph from the manufacturer, showing number of cycles vs. DoD.</b>
48	Employers Requirement	A battery room or BESS house needs to be constructed to install the batteries and related equipment.	Bidder proposes containerized solutions fpr BESS, Kindly confirm.	<b>Containerized solution not acceptable</b>
49	Employers Requirement	Figure 10: Simulation of energy distribution over 2 typical days (Type C: PV-Diesel-grid forming battery)	Please clarify during night time(9PM to 7AM) only diesel generator is in supplying load, there is no contribution from BESS. Ideally night time load shall be supplied from BESS instead of DG.	<b>BESS capacity is not design for night loads.</b>
50	Employers Requirement	Acceptable nominal discharge-rate : 1 C to 2C as long as the required functionalities and specifications are fulfilled: depending on the nominal discharge rate (C-Rate) of the battery offered by the Bidder, the minimum required battery capacity specified in Table 2-1 Chapter Summary of the characteristics of the BESS system to be built for 1C (nominal discharge rate) batteries must be adapted by the bidder if battery with different C-rates is provided.	Bidder Proposes 1C battery for each island considering the average peak load requirement as per the clauses 2.6.1, 2.7.1, 2.8.1, upto 2.19.1.	<b>Acceptable nominal discharge-rate: 1 C to 2C as long as the required functionalities and specifications are fulfilled: depending on the nominal discharge rate (C-Rate) of the battery offered by the Bidder, the minimum required battery capacity specified in Table 2-1 Chapter Summary of the characteristics of the BESS system to be built for 1C (nominal discharge rate) batteries must be adapted by the bidder if battery with different C-rates is provided.</b>





51	Employers Requirement	The bi-directional battery inverter must be capable of active/reactive regulation of output power so as to meet the main power demand of the load in the P/Q operation mode. The maximum response time shall be less than 20 ms (twenty milliseconds) and must act faster than the Diesel generators which has a response time of 20 ms.	The max. response time of BESS Inverter+EMS will be approx <b>300ms</b> . (Since the EMS shall take feedback from PV generation, DG, BMS(battery management system) load profile and command shall be given to Battery inverter).	<b>The bi-directional battery inverter must be capable of active/reactive regulation of output power so as to meet the main power demand of the load in the P/Q operation mode. The maximum response time shall be less than 20 ms (twenty milliseconds) and must act faster than the Diesel generators which has a response time of 20 ms.</b>
52	Employers Requirement	Standards IEC 61960 Secondary cells and batteries containing alkaline or other non-acid electrolytes – Secondary lithium cells and batteries for portable applications	IEC 61960 is not applicable since batteries are not for portable applications.	<b>IEC 63056:2020: Secondary cells and batteries containing alkaline or other non-acid electrolytes - Safety requirements for secondary lithium cells and batteries for use in electrical energy storage systems.</b>
53	Employers Requirement	UL-62133-2/ IEC 62133-2:2017 Secondary cells and batteries containing alkaline or other non-acid electrolytes - Safety requirements for portable sealed secondary lithium cells, and for batteries made from them, for use in portable applications - Part 2: Lithium systems	UL-62133-2/ IEC 62133-2:2017 is not applicable since batteries are not for portable applications.	<b>UL 9540A: Standard for Test Method for Evaluating Thermal Runaway Fire Propagation in Battery Energy Storage Systems</b> <b>IEC 63056:2020: Secondary cells and batteries containing alkaline or other non-acid electrolytes - Safety requirements for secondary lithium cells and batteries for use in electrical energy storage systems</b> <b>UN 38.3: Transportation Testing for Lithium Batteries and Cells.</b>
54	-		General Query: Kindly provide Preliminary Geotechnical report, Topography, Hydrology report file for Tender engineering.	<b>Not required at bidding stage</b>
55	Section 6: Employer's Requirements		<ul style="list-style-type: none"> <li>• Solar generation profile of all islands may please be shared.</li> <li>• Excessive solar generation may also please be shared.</li> <li>• Since all Islands are micro grid network whether BESS charging can be done from DG also apart from</li> </ul>	<b>Follow section 6 of the bid document</b>





			<p>solar?</p> <ul style="list-style-type: none"> <li>• 1C rating is much high. Usually if it's DG + Solar is used for charging then MW of PCS may be calculated accordingly. Kindly furnish your acceptance to calculate the MW of PCS as per requirement, MWhr may remain as per Tender condition.</li> </ul>	
56	Section 6: Employer's Requirements		<ul style="list-style-type: none"> <li>• Kindly confirm whether Solar + DG is presently operating in load sharing methodology?</li> </ul>	<b>Yes</b>
57	Section 6: Employer's Requirements		<ul style="list-style-type: none"> <li>• Kindly provide details regarding Configuration of present solar transformer, DG transformer.</li> </ul>	<b>Not required at bidding stage</b>
58	Section 6: Employer's Requirements		<ul style="list-style-type: none"> <li>• Kindly provide present feeder panels in each island substation. Also, please provide details of any Step-up substations?</li> </ul>	<b>Not required at bidding stage</b>
59	Section 6: Employer's Requirements		<ul style="list-style-type: none"> <li>• Kindly provide Power factor and reactive power profile of each island.</li> </ul>	<b>Not required at bidding stage. FENAKA to provide during design stage</b>
60	Section 6: Employer's Requirements		<ul style="list-style-type: none"> <li>• Kindly provide each island Substation photos and extra land available to install the BESS.</li> </ul>	<b>Not required at bidding stage</b>
61	Section 6: Employer's Requirements		<ul style="list-style-type: none"> <li>• We understand that PCS may be started in black start mode – making DG, Solar always synchronized to it? kindly furnish your acceptance for the same.</li> </ul>	<b>Accepted</b>
62	Section 6: Employer's Requirements		<ul style="list-style-type: none"> <li>• Kindly provide any specific specification / requirement with respect to cables, PCS, BMS, Transformer etc.?</li> <li>Also, please share the details regarding any extra liasioning/co-ordination with other grid agencies during commissioning.</li> </ul>	<b>Not required at bidding stage</b>

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63	Section 6: Employer's Requirements		<ul style="list-style-type: none"> <li>• Tender Requirement: Communications to remote solar PV plants will be via fibre optic cables and will be provided by others. Bidder is responsible for interfacing to this communications infrastructure.</li> <li>• BHEL Query: Kindly accept Fiber optic or Wireless communication between solar plant, BESS, DG and EMS.</li> </ul>	<b>Fiber optic only.</b>
64	Section 6: Employer's Requirements		<ul style="list-style-type: none"> <li>• Kindly confirm at which PCC Power Quality test to be performed?</li> </ul>	<b>Section 6: 3.10.2 Hybrid plant test: Power quality tests. Measurements of all the parameter related with the power quality shall be taken during the tests phase: THD (voltage and current), flicker, frequency and voltages. All these measurements shall show the compliance with the national requirements, as well as the technical requirements stated on this bid.</b>
65	Section 3: Evaluation and Qualification Criteria		<p>Tender Requirement:</p> <ol style="list-style-type: none"> <li>1 Installation, Operation and maintenance Lithium-ion battery Must have at least 2 years of relevant experience in installation, operation and maintenance of lithium ion based large battery systems.</li> <li>2 Installation, operation and maintenance of Hybrid system controller / Energy Management System Must have at least 2 years of relevant experience in installation, operation and maintenance of PV-BESS-Diesel hybrid systems.</li> <li>3 Civil works Must be in the relevant business for the last five (5) years with similar experience</li> </ol>	<b>Not possible to change</b>



		<p>BHEL Query:          We do have an experience of R&amp;D – set up of 250+ kW /1000 kW Hr – inhouse (established before 2019).          With teri total we are executing 410kWhr          In addition, in the Solar PV segment, BHEL is having more than 35 years of experience and has so far successfully executed and commissioned projects with cumulative capacity of approx. 1.2 GW (Ground mounted, Roof top, Canal top, Floating Solar, Solar Pumps etc.). Apart from EPC execution, BHEL is also a manufacturer of PV Cells &amp; Modules.          In this context, it is requested to amend/relax the PQC for this tender accordingly, considering the above solar + BESS experience.</p>	
66		Does every island/atoll have 4G connection? How is the stability of the network?	<b>Yes. 4G connection available.</b>
67		Does the island have any server installation requirement? Does it require room for central computer, dust proof, constant temperature and humidity and uninterrupted power supply?	<b>Server installation space will be provided.</b>
68		Is cloud platform accepted? Or must it be private platform? If private platform, there will be higher maintenance difficulty. If cloud platform, the network must be stable.	<b>Cloud not acceptable.</b>
69		What is the solar inverter's communication protocol? Does it have power limiting method?	<b>Not required at bidding stage</b>

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70		Please provide single line diagram for each island.	<b>Not required at bidding stage</b>
71		Is the BESS installation indoor or outdoor? If indoor, is the BESS room provided?	<b>Inside BESS Room. BESS room has to be built by the contractor.</b>
72		Is there a preference between liquid cooling and air cooling?	<b>Air cooling.</b>
73		Regarding Lithium-ion battery manufacturer's requirement, can there be some leniency for the supplier's qualification or should we participate as joint venture for this tender?	<b>Not possible to change any requirement. If the bidder is willing they can participate as joint venture (JV). Bidder is required to inform in writing its intention to bid as a joint venture (JV).</b>
74		All BESS system to connected to the LV (0.4kV) of the grid?	<b>BESS system to be connected to LV network.</b>
75		Kindly provide an extension of 50 days (30th November 2023).	<b>Bid submission date will be extended to 31<sup>st</sup> October 2023.</b>
76		Clause No. 3.4.1: We request to kindly modify satisfactorily and substantially completed within the last 5 years as satisfactorily and substantially completed within the last 7 years.	<b>Not possible to change any requirement.</b>
77		Clause No. 3.4.1: We request to kindly include participation as a management contractor, an engineering and design consultant and management other than participation as a contractor as mentioned in the bidding document.	<b>Not possible to change any requirement.</b>
78		Clause No. 3.4.1: We request to kindly bring Energy and other Infrastructure sector works also within the definition of the similar work.	<b>Not possible to change any requirement.</b>
79		We would like to request for 30 days extension of bid submission date for the tender -Design, Supply and	<b>Bid submission date will be extended to 31<sup>st</sup> October 2023.</b>





			<p>Installation of Battery Energy Storage Systems and Energy Management Systems in 18 islands across Maldives (TES/2023/G-012) with following reasons:</p> <p>There's a Mid-Autumn Festival and National holiday by end of September and early October, totally around 10 days;</p> <p>There are totally 18 islands with different site conditions, we would like to carry out a site survey before finalizing our bid document.</p> <p>Considering all factors, it would be really challenging for us to finish the bid document within the given time period.</p>	
80	Section 6: Employer's Requirements	Energy Management System capable of integrating and synchronising the existing Diesel generators and it must be compatible with the centralised SCADA system to exchange live data.	Please mark on the map the location of the routers connecting each island to the central SCADA for the necessary information regarding the routing of optical cables.	<b>Not required at bidding stage</b>
81	-		Please provide the single-line diagram of the electrical distribution network for each island.	<b>Not required at bidding stage</b>
82	Section 6 – Employer's Requirements	<p>Beside all the component specific documentation to be delivered, the Bidder shall also provide at least:</p> <ul style="list-style-type: none"> <li>·For minimum technical requirements, Section 4, "Data Sheets".</li> <li>·A general Layout showing the overall design of the BESS system including positioning of Containers or any other choice of battery hosting structure, positioning of inverters, Architecture of EMS,</li> </ul>	<p>1. The diesel generator is not within the scope of this bidding, and the A Single Line Diagram (SLD) of generator control panel and distribution panel should not be provided by the bidder.</p> <p>2. What does Sizing calculations refer to? What is the size of the room? What is the size of the battery? Or something else?</p>	<p><b>1. Agreed.</b></p> <p><b>2. Size of Battery for each island is provided in the Bidding Document. It is the responsibility of the bidder to decide the BESS room size and do the necessary calculations.</b></p>





		<p>controllers, transformer, and grid connection of BESS system. A two-dimensional drawing in PDF format is required.</p> <ul style="list-style-type: none"> <li>·Proposed daily operation for the hybrid systems</li> <li>·A general Single Line Diagram (SLD)</li> <li>·A Single Line Diagram (SLD) of generator control panel and distribution panel</li> <li>·Sizing calculations</li> <li>·Cable schedules</li> <li>·Modification design</li> </ul>		
83	Section 6 – Employer’s Requirements	A battery room or BESS house needs to be constructed to install the batteries and related equipment. It can be a room/additional building next to the powerhouse where the genset power system is located. It is also allowed to extend the powerhouse for this purpose if this is possible.	Please clarify which islands require new room/additional building construction and which islands can undergo expansion within the existing powerhouse.	<b>BESS room has to be constructed in all the project islands.</b>
84	Section 6 – Employer’s Requirements	Only under explicit Client authorization it would be possible to provide the system in a pre-wired ISO-Container that shall be installed next to the powerhouse. It is mandatory to use proper concrete foundations for the container. In case of powerhouse re-allocation a pre-wired ISO-Container for battery housing is mandatory. The following specifications for the battery room have to be fulfilled:	Please clarify if the island’s powerhouse re-allocation, Is it mandatory to use a pre-wired ISO-Container? If so, please specify which islands require this solution.	<b>ISO - container based solution not acceptable and not required under this tender.</b>
85			Please provide the brand, model, and configuration of the photovoltaic inverters for each island. Do the photovoltaic inverters have	<p><b>- Not required at bidding stage.</b></p> <p><b>- Have communication interfaces but not required at bidding stage.</b></p>

*Handwritten signature/initials in blue ink.*





			<p>communication interfaces? If so, which communication protocols are compatible?</p> <p>Has the installation of optical cables between the photovoltaic power station and the diesel power plant been completed?</p> <p>Please provide the specific configuration of communication equipment for both the photovoltaic and diesel generator systems.</p>	<p>- <b>Optical cables installation will be done in parallel under a different contract.</b></p> <p>- <b>Not required at bidding stage.</b></p>
86			<p>We have already registered the project under our own company's name. If we intend to bid as a Joint Venture, do we need to re-register under the JV's name?</p>	<p><b>Bidder need not re-register. But bidder should inform of this change to Ministry of Finance.</b></p>
87	Evaluation and Qualification Criteria	<p>3.4.2(b) The Employer accepts any of the following activities to be subcontracted. They may be complied with by the Bidder or by its proposed specialist subcontractor. If the key activity is to be undertaken by a Specialist Subcontractor, the Employer shall require evidence of the subcontracting agreement from the Bidder.</p>	<p>Bidder understands, if a certain Bidder doesn't have pre-Qualification as per Section 3 - 3.4.2 (Table A), Only then he can participate in the bid with specialized subcontractor as per the Qualification mentioned in Section 3 - 3.4.2 (Table B)</p> <p>If a Bidder is Qualified satisfactorily as per Section 3 - 3.4.2 (Table A) then he need not provide any documentary evidence as per Section 3 - 3.4.2 (Table B)</p>	<p><b>Even if the bidder assumes they are Qualified satisfactorily as per Section 3 - 3.4.2 (Table A), the bidder has to provide documentary evidence as per Section 3 - 3.4.2 (Table B).</b></p> <p><b>Or if the bidder intends to subcontract specialized tasks, the bidder has to provide documentary evidence of the subcontractor as per Section 3 - 3.4.2 (Table B).</b></p>

