بسم الله الرحمن الرحيم

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

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އަމީނީ ފަރާތް ، މާލެ، ދިވެހިރާއްޖެ

CLARIFICATION 4

ކްލެރިފިކޭޝަން 4

ނަންބަރ No:	**TES/2023/G-012**
ޕްރޮޖެކްޓް Project:	**Design, Supply and Installation of Battery Energy Storage Systems and Energy Management Systems in 18 islands across Maldives**
ތާރީޚް Issued Date	**06th November 2023**
ސަފްޙާ ތަކެއް No. of Pages: -04	ބޮކް.ހ.ނަ Boq: -00 / ޑްރޮއިންގ Drawings: -00

Please include this clarification when submitting the bid

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- Please find attached, answers to the queries received.

ނަން **Name: Fathimath Rishfa Ahmed**	ސޮއި **Signature:**

MINISTRY OF FINANCE
Male', Republic of Maldives

CLARIFICATION 4

#	Document Name	Document Reference (Section no/page no etc)	Query	Response
1			Each stations installed solar capacities are needed (Existing)	**Not required for the bidding purposes.**
2			Existing solar system arrangement. (Is it connected to the grid through solar inverters? If it is connected like that do we need to charge batteries using rectifier system? Otherwise existing solar grid tie inverters remove and replace with hybrid inverters? Send the plan in detail	**- Existing systems are connected to the main grid.** **- No need to remove existing inverters as they are distributed throughout the grid. Battery has to be connected direct to the AC Busbar via bi-directional inverter. Please refer to section 6.**
3			Proposed Voltage of single battery bank is 1164.8 V - 1497.6 V. If we connect solar DC power directly to the Battery bank, are string voltages compatible with mentioned voltage rages? Otherwise do we need to re-arrange solar strings so that mached for battery bank voltage ranges?	**This is not required as the BESS will be directly connected to AC busbar.**
4			What are the distances between the proposed buildings and the existing solar systems and generators?	**Generally, less than a km from PV site to Powerhouse where BESS will be placed. BESS will be placed within the same premises as Generators and Control Room.**
5			We understand that the bid documents specify that the Bidder must provide bid security from a Bank in an eligible country. In our case, we have duly furnished bid security from a Bank based in an eligible country as per the bid documents. However, this Bank does not have a branch in the Maldives, the location of the project. To ensure compliance with the bid requirements and to clarify the appropriate course of action, we kindly request guidance on whether it is necessary for the Bidder to provide a counter-guarantee from a	**It's not necessary for the Bank to have a branch in the Maldives. As long as it has a correspondent financial institution located in the Republic of Maldives to make it enforceable.**

			corresponding bank within the Maldives to fulfill the bid security requirement.	
6	Section 6 Employer's Requirement	3.2.3 BESS Housing	There is no requirement for flat roof or roof slope in the technical documents, please specify.	**The roof has to be sloped for the rain.**
7	Section 6 Employer's Requirement	3.4 Power Plant Control and Monitoring system - PCMS	There is not specified the details of PCMS, like how many work stations, how many operators for each site?	**One work station per site.**
8	Section 6 Employer's Requirement	3.6.2 Earth electrode	Bare copper or bare galvanized steel, which is acceptable as earth materials?	**Bare copper.**
9	Section 3: Evaluation and Qualification Criteria	2.1.4 Functional Guarantees of the Facilities 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.	The remaining battery capacity (SOC, State of Charge) shall be equivalent or above 80% at the end of the above life cycle. This requirement is different with the requirement in Clause 3.2.1 Batteries (60% of initial capacity), which is correct?	**Both are correct: i) 2.1.4 Functional Guarantees refers to "life cycle" while ii) Clause 3.2.1 refers to BESS capacity at End of Life. It shall be 60% of initial capacity.**
10	Section 6 Employer's Requirement	3.2.1 Batteries 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 6capacity. The guaranteed cycle life shall be d7epending on the energy throughput.	The suppliers can only able to guarantee that 5000 cycles at 80% of DoD at 25°C (End of Life: 60% of initial capacity), is that acceptable?	**The bidder must comply with Clause 3.2.1**

		The Bidder shall provide a lifetime graph from the manufacturer, showing number of cycles vs. DoD.		
11	Section 6 Employer's Requirement	A calendar life of at least 20 years is required (End of Life: 60% of initial capacity), if the guaranteed cycles are not used before.	The suppliers can only able to guarantee that a calendar life of 16 years (End of Life: 60% of initial capacity), is that acceptable?	**Bidders must meet "A calendar life of at least 20 years is required (End of Life: 60% of initial capacity), if the guaranteed cycles are not used before."**
12	Clarification 01	#72 Preference between liquid cooling and air-cooling.	It was replied that air cooling to be preferred, is that means liquid cooling cannot be accepted? As the temperature rise for 1C batteries during charging and discharging is high, which is harmful for the health and safety of batteries. It is recommended to adopt liquid cooling batteries. Please confirm.	**Both cooling systems are acceptable.**