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Ministry of Finance and Treasury
Male' Republic of Maldives

Preparing Outer Islands for Sustainable Energy Development


Design, Supply, Installation and Maintenance of renewable energy hybrid power plants in HaaDhaalu Atoll – Maldives

CLARIFICATION 01

S.No	Document No.	Clause No/Page No	Tender Summary	Question / Clarification from bidder	Answer
1	Section 6_ERQ	Clause 2.4.2/ Page No 15,16 of 243	The diagram is same for Type B & Type C System.	Kindly amend the diagram for Type C. Also, please confirm the DG will be ON for how much time in Type C as well as Type B? Or clarify the operation of the system in detail.	Type C diagram is very similar to Type B diagram. Main difference is that Type C battery inverters are programmed to work in grid forming mode, whereas Type B inverters shall have this option but shall be programmed as grid support battery inverters for commissioning and might be reprogrammed at a later stage to work as grid forming battery inverters. In Type B systems there must always be at least one generator turned on. In Type C islands the generators can be turned off for as long as the available power from solar and batteries allow it. You can find detailed system operation explained in section 6, chapter 3.7.2
2	Section 6_ERQ	Clause 2.5/ Page No 17 of 243	The Battery bank is quite huge.	We presume the batteries & systems will be installed in clusters. The system is not centralized. Kindly clarify the running load of each cluster with back up required so as to determine the individual cluster ratings.	Each island will have their own battery system, the islands are not connected to each other. Load of each battery system is clarified in the TES/2016/G-007 Addendum#01 Item#6 where a separate column shows the required power of each system.





3	Section 6_ERQ	Area for the roofs is provided in the tender for different sites.	Kindly confirm the type of the roofs for installation. Also please clarify if the modules will be installed in the direction of slope as mentioned in the tender document.	Most roofs are Lysaght Trapezoidal Steel Sheets with the following dimensions:  Thickness of the roof is 0.47mm
4	Section 6_ERQ	Clause 2.4/ Page 14 of 243	For Type B Systems, it is mentioned that the inverter / charger is responsible for supporting the surge loads on the DG. Please clarify what will be the rating of the inverter / charger.	Each island will have their own battery system, the islands are not connected to each other. Load of each battery system is clarified in the TES/2016/G-007 Addendum#01 Item#6 where a separate column shows the required power of each system.
5	Section 6_ERQ	Clause 3.2.1.41 Page 130 of 243	Modules shall be PID Free. A certificate from an independent third party is required.	Answer: The PID certificate is mandatory and shall form a part of the Bid. Section 6, Chapter 3.2.4.1: "Modules shall be PID free. A certificate from an independent third party is required."
6	Section 6_ERQ	Clause 3.3.1/Page 147 148 of 243	The guaranteed cycle life (End of Life: 80% of initial capacity) <ul style="list-style-type: none"> • A minimum of 4,000 cycles at 80% of DoD at 25°C • A minimum of 800 cycles at 80% of DoD at 25°C 	The guaranteed battery cycle life shall be dependent from energy throughput. 4000 cycles @80% correspond to the same energy throughput as 800 cycles @ 80% + 1500 cycles @60% + 2400 cycles @40% + 3500 cycles @20%, so both have to be fulfilled. Section 6, Chapter 3.3.1 "Batteries"





7	Section 6_ERQ	Clause 3.3.1/Page 147 148 of 243	A calendar life of at least 20 years is required (End of Life: 80% of initial capacity), if the guaranteed cycles are not used before. Recycling of the battery: when the battery has achieved its end of life it must enter in a recycling program from the Manufacturer. The transport and shipment costs will be carried by the Employer. The Contractor shall provide a certificate proving that the Manufacturer agrees to receive and recycle the lithium ion batteries according to international applicable standards.	They are different from the standard practiced norms, therefore the international accepted standards/norms may be used, kindly advice.	Requirements stated for calendar life and recycling are mandatory as stated in Section 6, Chapter 3.3.1.
8	Section 6_ERQ	Clause 3.2.4.1/ Page 135 of 243	PV Inverters: Codes & standards	Kindly advice the acceptable standards	PV Inverter Code and Standards are stated in Section 6, Chapter 3.2.4.2.
9	Section 6RQ	Clause 3.3.2/ Page 148 of 243	Battery Inverters/Chargers The overload capability of the inverter must be at least 150% of the nominal power for at least 5 min	Request you to provide flexibility on design part of the component.	Original Text: "The overload capability of the inverter must be at least 150% of their nominal power for at least 5 min." To be changed for: "The overload capability of the inverter must be at least 150% of their nominal power for at least 30 seconds." Section 6, Chapter 3.3.2



Section 6_ERQ	Diesel Gen- erators - In- formation Required	Required Complete Generator Details. 1.DG Manufacturers Name/country 2.Engine Manufacturer Name with En- gine Serial Number. 3.Alternator Manufacturer Name and Serial Number 4. Generator Controller Model/ and make 5. AVR details of each alternator 6.Are all Generators in running condi- tion and healthy or under breakdown 7. The above information is required Power Plant wise and each Generator wise.. (engine+alternator+control- ler+AVR details + Health Condition should be together)	Necessary information for the bidders to prepare their offer can be found in Section 6, Chapter 2.x.2 of each island. As stated in section 6, chapter 1.2, it is within the contractors responsibil- ity to collect the necessary information during the engineering phase for the detail design.
10		We also request you to kindly extend the bid submission date for 4- 5 week for enabling the bidders to prepare their bids comprehensive and compet- itive	An extension of 3 weeks of the bid submission deadline is given. Please see TES/2016/G-007 Addendum#01 Item#1.
11		The relevant equipment and elements of original power grid shall be checked for power grid updating and the owner shall provide existing 11kV and 04kV power grid wiring diagram and distribution layout chart and existing diesel generator layout chart	Refer to Section 6_Drawings for the details of Power house and Grid up- gradation works. Drawings clearly indicate the existing LV system and proposed upgrada- tion required.
12		Has the path of cable trench of power grid and PV station been confirmed?	Route drawings are not provided. It is the responsibility of contractor to prepare and submit route drawings during detail engineering.
13		It adds up to 334.1kWp in "Table 7: B03 - Analysis of the available roofs and maximum PV power installable" of 2.6.2 of the tender document, while it is 328.9kWp through calculation.	Section 6, Chapter 2.6.2 : The correct number is 328.9kWp
14			





15	Section 6_ERQ			The bid document requires the bidder to confirm the position of energy storage device in the power house, is there a room to arrange the energy storage device, hybrid electric control system and diesel engine?	There is enough space in the power houses to install a total of three generators. Battery storage system as well as SCADA and other control systems shall be installed in a separate building next to the powerhouse or an extension of the control room of the powerhouse, which has to be built by the contractor (size according to requirements of installed equipment). In case of powerhouse relocation, this equipment shall be installed in a ISO-container as described in section 6, chapter 3.3.3. PV-Inverters have to be installed at each location on suitable outdoor walls of the buildings. Please refer to TES/2016/G-007 Addendum#01 Item#5.
16	Section 6_ERQ			Do the original diesel engine have automatic quasi-synchronizing device?	No, original diesel engines have no automatic synchronization device, except diesel engines on B03 Hanimaadhoo. It is within the scope of the contractor to provide these automatic synchronisation devices for all other islands.
17	Section 6_ERQ			The bid document requires the bidder to investigate the complete network path of cable line of power grid, while the length of new cables to distribution boxes and the power house has been clarified, shall the offer be performed?	The cable lengths and locations of DBs provided are preliminary. It is the responsibility of the Contractor to verify the correctness of the design during detail design stage.
18	Section 6_ERQ			What shape is the color steel tile on roof of each project island? Trapezoid?	Please refer to answer provided above: Item S.No. 3
19	Section 6_ERQ			Can the installation position of new distribution boxes be provided?	New DBs shall be installed at the same place as the replaced DBs.
20	Section 6_ERQ			It is required in 3.2.4 of the tender document that European efficiency of PV grid-connected inverter is not less than 98% and that of common model is not less than 97%, can the common model be used	Comment from Bidder accepted: The requirement for the minimum euro efficiency of the proposed inverter shall not be less than 97%. Section 6, Chapter 3.2.4.5



21	Section 6_ERQ			There are two requirements of cycle times of storage battery at 80% of DoD at 25°C, namely, 4,000 times and 8,000 times, in 3.3.1 of the tender document, which one shall be subject to?	Please refer to answer provided above: Item S.No. 3
22	Section 6_ERQ			The requirement for storage inverter in 3.3.2 of the tender document is "The overload capability of the inverter must be at least 150% of their nominal power for at least 5 min.", which is unconventional design, is the customization production available?	Please refer to answer provided above: Item S.No. 10
23	Section 6_ERQ			is required in 3.9 of the tender document that the material of lighting protection is copper or galvanized iron, and it shall confirm the material type this time, copper or galvanized iron?	<p>Clarification: Section 6, Chapter 3.9 describes the requirements for Earthing; section 6, Chapter 3.10 describes the requirements for Lightning Protection.</p> <p>Answer: For installations over ground the material shall be copper as specified in Section 6, Chapter 3.9. For installations underground the appropriate material shall be selected, considering the specific soil conditions on site for each location separately. Section 6, Chapter 3.9.2 Earth Electrode: Bare copper or bare galvanized steel, in stranded, strip or rod form are satisfactory earth materials in non-aggressive soils. Because galvanized ferrous materials corrode sacrificially to copper, galvanized iron and steel electrodes should not be buried in close proximity to bare copper. In aggressive soils only galvanized steel earth rods should be used.</p>
24	Section 6_ERQ			The relevant equipment and elements of original power grid shall be checked for power grid updating and the owner shall provide existing 11kV and 04kV power grid wiring diagram and distribution layout chart and existing diesel generator layout chart.	Please refer to answer provided above: Item S.No. 13





25	Section 6_ERQ				For the house structure is unclear and if the house area is insufficient caused for the structure does not meet the installation requirements or the handling is unable due to shadow, does the owner provide new roof for use?	This is to be discussed in every specific case. If shadow occurs from a tree, it might be cut. If roof is not suitable for installations because roof is in bad condition, the roof has to be replaced by the contractor before installing the PV. No additional buildings can be used than the ones described in the documents without the approval of the Employer.
26	Section 6_ERQ				Are the spare parts stored in a centralized manner or by islands and is there a storage room?	Yes, there shall be one spare parts room per Atoll. Spare parts shall be stored in a closed and locked room from Fenaka/Stelco.
27	Section 6_ERQ				Must the intelligent monitoring device of DC combiner box be installed?	There will be no DC combiner box as string inverters shall be used.
28	Section 3	2.4.2,			Could 3 parties form a JV to participate the bidding? If yes, how would the requirement be met for the 3 parties?	Yes, 3 parties can form a Joint Venture to pool their resources and expertise. Pursuant to para. 2.4.1 of Section 3, either one partner must demonstrate at least two contracts in the value exceeding \$4,000,000.00 per contract, successfully or substantially completed within the last 3 years and similar to the proposed contract, or any three partners must each demonstrate one (1) successfully or substantially completed contract of similar size and nature (where the value of the participation for each partner exceeds \$3,000,000.00 per contract). With regards to para. 2.4.2. of Section 3, the minimum requirement is at least one partner per requirement.
29	Section 9_COF	A8, 4.4			Normally the aggregate liability shall not exceed 10% of the Contract Price.	Rate of liquidated damages is set for failure to attain the functional guarantees. We know that the Contractor will limit its liabilities to what is specified in the Contract. Given the size and specific nature of the Contract the Contractor's aggregate liability to pay liquidated damages is set to twenty percent (20%) of Contract Price.





30	GCC 10.2 & Section 9,	Appendix 6 - Scope of works and supply by the Employer	Site & Scope of Works and Supply by the Employer. ITB 18.6 The prices quoted by the Bidder shall be fixed.	Sites provided by MEE shall be stated in the Section 9, Appendix 6 Scope of Works and Supply in the bidding docs as required by GCC 10.2, this content is missing in the Section 9, Appendix 6 and shall be added.	The personnel, facilities, works, and supplies to be provided or supplied by the Employer will be agreed with the lowest evaluated Bidder during contract negotiations. All personnel, facilities, works, and supplies will be provided by the Employer in good time so as not to delay the performance of the Contractor, in accordance with the approved Time Schedule and Program of Performance pursuant to GCC Subclause 18.2.
31	Section 6_ERQ	1.2 Scope of Work	The Bidder shall collect and investigate all basic data which are needed for a proper design, planning and engineering. This includes, but is not limited to: <ul style="list-style-type: none"> conduct site visits and basic evaluation needed for a proper design and engineering survey of existing rooftops with regards to condition and suitability for proposed installations review of static calculations and where such are not available static verification of the buildings / roof tops. 	the requirements " review of static calculations and where such are not available static verification of the buildings / roof tops" is confusing. The static calculation is not available in the bidding documents, and the buildings/roof tops static verification is also not available. it is normally that the bidder carry out the bidding and design as per the roofs in the bidding docs. during the implementation, if the roofs found unsuitable and need to be changed, then the MEE will issue the Variation and change order to the contractor for the roof change. it is suggested to delete the sentence " review of static calculations and where such are not available static verification of the buildings / roof tops" in the bidding docs to avoid the confusions to the bidders.	No static calculations of the buildings and roofs are available. The contractor shall verify during detailed design that the building / roof top can bear the additional loads applied by the PV generator installation. In case selected roofs are found unsuitable, reinforcement or selection of another roof shall be discussed with the Employer.





32	Section 6_ERQ	1.2, Section 6, Page 4-8	“PV system with PV modules, grid tied inverters.....UPS, communication cables..”	<p>However, Figure 4: Schematic Block Diagram of Type B System and Figure 5 Schematic Block Diagram of Type C System under Item 2.4.1 do not show any UPS devices.</p> <p>Is it necessary to include UPS devices considering there would be inverters in PV systems.</p> <p>Does it require UPS since battery system's charging and releasing normally needs DC, AC and inverters.</p> <p>Please clarify that whether UPS is needed as diesel generator system are fit to connect the grid and the site status of the existing diesel generators.</p>	<p>Yes, UPS systems are needed to ensure that SCADA system will be recording and storing data even if there is a black out of the electricity system.</p> <p>This means UPS is needed only for control system in powerhouse. UPS is not needed to cover whole load of the island.</p> <p>Section 6, Chapter 3.7.6</p>
33	Section 6_ERQ	2.5, Section 6 Page 4-17	Table 3 states that Type C is for Finney and Hinimaradhoo and Type B for the rest islands.	<p>Type C could allow for direct electricity release by charging and releasing battery through Bidirectional energy storage inverter and easy maintenance of the equipment.</p> <p>Hence, it is suggested that Type C be adopted for all 13 islands.</p>	<p>Type C diagram is very similar to Type B diagram. Main difference is that Type C battery inverters are programmed to work in grid forming mode, whereas Type B inverters shall have this option but shall be programmed as grid support battery inverters for commissioning and might be reprogrammed at a later stage to work as grid forming battery inverters. In Type B systems there must always be at least one generator turned on. In Type C islands the generators can be turned off for as long as the available power from solar and batteries allow it. You can find detailed system operation explained in section 6, chapter 3.7.2</p>
34	Section 6_ERQ	3.2.1.2 Section 6 Page 6-129	“The PV Module shall be designed, manufactured and tested in full compliance with the following, but not limited to, standards, codes, rules and regulations.”	<p>It is suggested that the standard edition could be specified.</p>	<p>Section 6, Chapter 3.2.1.2 Codes and standards: All applicable codes and standards are listed in Chapter 3.2.1.2. Please refer to Section 6, Chapter 3.2.1.2</p>





35	Section 6_ERQ	3.2.3.2 Page 6-134	"All nuts, bolts, screws and other fasteners shall be made out of stainless steel, suitable to withstand the environmental conditions for 20 years without any signs of visible corrosion."	It is observed that this anti-corrosion requirement is a bit unrealistic and suggested that the duration be reduced.	Section 6, Chapter 3.2.3.2: The sentence "All nuts, bolts, screws and other fasteners shall be made out of stainless steel, suitable to withstand the environmental conditions for 20 years without any signs of visible corrosion." shall be replaced by "All nuts, bolts, screws and other fasteners shall be made out of stainless steel, suitable to withstand the environmental conditions for 20 years."
36	Section 6_ERQ	3.2.4.7 page 6-137	"The inverters have to be installed in order to withstand prevailing climate conditions. The following concepts shall be considered, preferred concepts in descending order.." "Indoor installation in new building: In case where no existing building / room are available the Contractor shall build a new building for inverter housing."	Is it necessary to construct new buildings? And does the Contractor bear all the costs of constructing new buildings?	Please refer to TES/2016/G-007 Addendum#01 Item#5
37	Section 6_ERQ	3.3.3 page 6-149	"Any failure in the air conditioning system must be communicated to the operator via a control system."	it is difficult to integrate air conditioning system with control system. Please clarify.	Air conditioning system does not have to be controlled itself, but operation status shall be integrated in SCADA system. Can be done via additional temperature sensor for example.



38	Section 6_ERQ	3.5.4 page 6-157	<p>"All Electrical works under this contract shall be carried out by qualified electrical technicians licensed by MEA or under the direct supervision of an electrical engineer licensed by MEA. Similarly mechanical and civil works shall be carried out by qualified personnel approved by relevant government authority (MEA, MHI etc.) to the satisfaction of the Employer's Representative."</p> <p>To be changed for:</p> <p>"All Electrical works under this contract shall be carried out by qualified electrical technicians. Similarly mechanical and civil works shall be carried out by qualified personnel. All detail design shall be approved by relevant government authority."</p> <p>Section 6, Chapter 3.5.4</p>	<p>Please clarify is this is truly required and we have to implement as per the statement.</p> <p>It is suggested that this clause be deleted.</p>	<p>Original Text:</p> <p>"All Electrical works under this contract shall be carried out by qualified electrical technicians licensed by MEA or under the direct supervision of an electrical engineer licensed by MEA. Similarly mechanical and civil works shall be carried out by qualified personnel approved by relevant government authority (MEA, MHI etc.) to the satisfaction of the Employer's Representative."</p>
39	Section 6_ERQ	3.7.2.5 Page6-196	<p>"The parameter of the allowed load ramp on the genset shall be adjustable by the operator."</p>	<p>It is suggested that the load ramp rate be specified and please clarify if this should be requested by the Employer since the Employer requires load ramp of diesel generator be adjustable.</p>	<p>As the hybrid system will in any case include a battery the ramp rate on the diesel generator due to sudden loads or irradiation fluctuations can be influenced to a certain point. This parameter shall be easy adjustable in the controller of the hybrid system by the operator.</p> <p>Section 6, Chapter 3.7.2.5</p>
40	Section 6_ERQ	3.7.2.6 page 6-196	<p>"...from the controlling room on site as well as from selected users online, anywhere with internet connection."</p>	<p>It is normal practice not to allow for remotely configuring values and protect computers from viruses. Please clarify.</p>	<p>Computer protection with firewall etc. has to be done to avoid viruses and unauthorized access to the system. Nevertheless, authorized access shall be possible from anywhere with a secure VPN connection for example.</p> <p>Section 6, Chapter 3.7.2.6</p>





41	Section 6_ERQ	3.7.4.1 page 6-200.	"Old pages can be recalled by operator at any time. If any new alarm appears while monitoring an old page, flashing signal on the screen shall warn the operator to return to the first page."	"The resistance between any enclosures in any one location, shall be less than 0.2ohms."	The warning time recall should be given time limits instead of any time. Please clarify.	The operator shall be able to review all alarms and Events stored by the SCADA system at any time. Section 6, Chapter 3.7.4.1
42	Section 6_ERQ	3.9.4 page 6-211.			Please clarify on the resistance specification. Could it be reached? Chinese standard is 1 ohms.	Resistance specification to be changed as follow: The resistance requirement in between enclosures shall be less than 1 ohm. The resistance measured against ground shall be less than 1 ohm. The design shall base on international standards and codes like IEC or specific Maldivian standards and codes. Chinese and other national standards shall be not considered or only supplementary if not stated otherwise. The specific standards applicable for earthing requirements are: IEC 60364-7-712 Electrical installations of buildings Part 7-712 Requirements for special installation locations-Solar photovoltaic (PV) power supply systems IEC 60364-5-54 Electrical installations of buildings Part 5-54 Selection and erection of electrical equipment - Earthing arrangements, protective conductors and protective bonding conductors IEC 62548 Photovoltaic (PV) arrays - Design requirements Section 6, Chapter 3.9.4





43	Section 6_ERQ	3.13.1 page 6-214	"The verification of the commissioning test will be based on the latest published testing procedure IEC 62446."	It is suggested that a specific standard edition be chosen, because if the duration of contract discussion and negotiation is long, changes might occur in the standard edition.	<p>The latest edition is from January 2016.</p> <p>Section 6, Chapter 3.13.1: The sentence "The verification of the Commissioning tests will be based at least on the latest published testing procedure IEC 62446: Grid-connected photovoltaic systems – Minimum requirements for system documentation, Commissioning tests, and inspection, for all electrical Commissioning."</p> <p>shall be replaced by</p> <p>"The verification of the Commissioning tests will be based at least on IEC 62446-1, Edition 2016: Grid-connected photovoltaic systems – Minimum requirements for system documentation, Commissioning tests, and inspection, for all electrical Commissioning."</p>
44	Section 6_ERQ	3.16.1 page 6-223	"Bidder shall carry out and or manage all planned overhaul...in-specifications."	It should not be the responsibility of the tender to arrange for overhaul. It is suggested that this be deleted. Please clarify.	Accepted, please refer to TES/2016/G-007 Addendum#01 Item#11
45	Section 6_ERQ	3.16.4 page 6-224	"If a failure will be detected O&M personal shall initiate corrective maintenance measures within 6 hours after its occurrence."	Considering the location of the islands, would 6 hours be enough? It is suggested that 6 hours be changed to some more duration.	<p>The phrase "O&M personal shall initiate corrective maintenance measures within 6 hours after its occurrence" means in specific that the O&M personal shall start with activities to rectify the failure within 6 hours after the occurrence of the failure. It does not mean that the O&M personal shall be on site within 6 hours.</p>
46				We understand that a Pre-Bid meeting has been held on Monday 1st August 2016 at the Public Procurement Section - Meeting Room, Ministry of Finance & Treasury, Ameenah Magu, Male'. We had been unable to attend the meeting and therefore request that we are provided a copy of the Minutes	<p>Minutes of meeting are available on the website of the Ministry of Finance together with the tender documents.</p> <p>http://www.finance.gov.mv/v2/postview?act=4&category=Invitation%20For%20Bids</p>





				and Clarifications basis this meeting for our reference.
47				<p>Kindly advise if there are any provisions for an additional round of meetings to clarify or raise additional queries</p> <p>The Tender Documents have been purchased in our company name but we may have a JV partner</p> <p>a. Please advise the process to register a Joint Venture through which Bid Submissions may be made. Is there a requirement of submitting any document to indicate the existence of such a Joint Venture?</p> <p>b. At what stage / time do we need to submit such a document indicating our Joint Venture?</p>
48				<p>No more clarification round will be organized. Bidders can however submit all their questions per email until the deadline.</p> <p>You may choose to register your company name only. Please refer to the following paras. In Section 1 of Bidding Documents: ITB 4.1, ITB 4.3 (e), ITB 11.2 (i), ITB 21.8, ITB 22.3; para. ITB 22.2 of Section 2. In particular:</p> <p>a. You don't need to register to submit a bid on behalf of a JV. In the case of a bid submitted by the JV, the Bid shall include a copy of the Joint Venture Agreement entered into by all partners. Alternatively, a Letter of Intent to execute a Joint Venture Agreement in the event of a successful bid shall be signed by all partners and submitted with the Bid, together with a copy of the proposed agreement. The bid security of the JV shall be in the name of the JV that submits the Bid. If the JV has not been legally constituted at the time of bidding, the bid security shall be in the names of all future partners as named in the letter of intent referred to in ITB 4.1.</p> <p>b. You need to submit the above documents as part of your Technical Bid.</p>
49				<p>Earnestly request a consideration to extend the bid opening by 20 days in order to achieve better preparation on Technical & Logistical elements, since the coverage is spread across 13 Islands.</p> <p>An extension of 3 weeks of the bid submission deadline is given. Please see TES/2016/G-007 Addendum#01 Item#1.</p>





50	section 4	the footnote for bid security indicate "in case of a joint venture, the bid security must be in the name of all partners to the joint venture that submit the bid."	My question is: usually for JV bidder, we issue the bid security under the name of the leader company, so if we issue bid security under the leader company name for this tender,ok?	The bid security or the Bid-Securing Declaration of a Joint Venture shall be in the name of the Joint Venture that submits the Bid. If the Joint Venture has not been legally constituted at the time of bidding, the bid security shall be in the names of all future partners as named in the letter of intent referred to in ITB 4.1
51	Section 6_ERQ 3.2.4.5	request "proposed inverter should be at least 98% European efficiency."	My question is little 10KW 20KW inverter(10KW and 20KW inverter will be suitable for current project) on market achieve 98% European efficiency, so will your side lower the requirements, maybe to be 97.4%?	Please refer to answer provided above: Item S.No. 21
52	Section 6_ERQ 3.3.2	Battery inverters/chargers, request the overload capability of the inverter must be at least 150% of their nominal power for at least 5mins	My question is if our proposed inverter do not meet the requirements, then can we propose higher capacity inverter(for example, required to be 100KW, but we propose 150KW one, then could meet the load requirements)	Please refer to answer provided above: Item S.No. 10
53	Section 6_ERQ 2.6.3	table 7 showed total installed solar capacity should be 334.1kw, while if you recalculate it, you will found the sum up installed capacity should be 328.9KW	so this is a mistake, right? We could reduce accordingly, right?	Please refer to answer provided above: Item S.No. 15
54	Section 6_ERQ	you already indicate the location in the google map	my question is could you indicate each roof No. on the google map to match the roof No. in the table offered?	Roofs will not specifically be indicated in google earth.
55	Section 6_ERQ	you indicate the roof distance by "x" and "y"	may I know the you measure the "x" and "y" on the roof or the ground?(I mean the "x" and "y" offered is the exactly distance of the roof or just simply measured by the building length and width on ground?)	The measured distances are the ground measurements of the roofs, nevertheless there are some buffers calculated as it is not possible to build on the overstands of the roofs.
56	Section 6_ERQ		all roof's color steel tile for this project is trapezoidal type? Or any other type?	Please refer to answer provided above: Item S.No. 3





57	Section 6_ERQ		Can you offer the grid power cable route for each island and the location where the existing and new distribution box should be installed?	It shall be the responsibility of contractor to survey and prepare the route drawings with new DB locations during detailed engineering.
58	Section 6_ERQ		do you confirm there is enough space for at power house for new diesel engine and battery storage system also the SCADA system? And do you confirm there is a control room at each system location for inverters? Or we have to build extra building for those equipments?	Please refer to answer provided above: Item S.No. 16
59	Section 6_ERQ	3.1.1	request: The guaranteed cycle life (End of Life : 80% of initial capacity) shall be the following: . A minimum of 4.000 cycles at 80% of DoD at 25°C and . A minimum of 800 cycles at 80% of DoD at 25°C and . A minimum of 1.500 cycles at 60% of DoD at 25°C and . A minimum of 2.400 cycles at 40% of DoD at 25°C and . A minimum of 3.500 cycles at 20% of DoD at 25°C 4000cycles at 80% DoD at 25°C is much difference with 3.500 cycles at 20% of DoD at 25°C, so which one should we follow?	Please refer to answer provided above: Item S.No. 3
60	Section 2	Bid data sheet "C. Preparation of Bids"	According to ITB 11.2 (k), Functional guarantees and type test certificates (with requirements for validity) will be needed	Functional guarantee: please refer to Section 3, Chapter 1.3.4
			Could you clarify the certificate of functional guarantees ? we are trying to figure out how to prepare it by asking this question. What sorts of functional guarantees you will need exactly ? We appreciate if you could give us answer.	





61		According to ITB 22.2 The Bidder shall submit an acceptable authorization within fourteen (14) days.	<p>Is that mean we need to prepare the acceptable authorization prior to the date of the bid submission ?</p> <p>When is the the baseline date for submission?</p> <p>And In regards to acceptable authorization, could you clarify what it is ? We wonder if it is the confirmation of authorization which indicated on ITB 22.2</p>	<p>Please refer to para. ITB 22.2 of Section 2 for acceptable authorization. The failure to provide the acceptable authorization would result in the rejection of your Bid. The Bid is not rejected in the first instance if the bidder submits a deficient authorization. Instead the bidder is requested to provide an acceptable authorization within fourteen (14) days of receiving such a request.</p>
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