



### ADDENDUM 01

މަޢުލޫމާތު Project No:	TES/2017/G-05
ދިވެހި Issued Date:	March 13, 2017
މަޢުލޫމާތު Project:	Design, Supply, Installation and Maintenance of renewable energy hybrid power plants in Haa Alif Atoll – Maldives
މަޢުލޫމާތު Deadline for submission:	April 3, 2017 Monday at 1000 hours
މަޢުލޫމާތު No. of Pages: - 5	

Please include this clarification when submitting the proposal

1. Please find the **Clarification 1** issued, attached with this sheet.

Please be informed that the bid submission will be held on **Monday, 3<sup>rd</sup> April 2017 at 1000hrs**, at Ministry of Finance and Treasury, National Tender and Project Monitoring's Meeting Room.

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Name: Ahmed Mujuthaba

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Signature:





**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  
Shaviyani and Noonu Atoll – Maldives**

**ADDENDUM 1**



**Item #1. Section 4, Schedules of Rates, and Prices “Schedule No. 1: Plant and Mandatory Spare Parts Supplied from Abroad”**

*Please insert the following rows at the end of Schedule No.1:*

<b>G.</b>	<b>Central Data Acquisition and Monitoring Equipment</b>	<b>Shaviyani Atoll + Noonu Atoll</b>				
65.	Fibre Optic Cable (from powerhouse to Council Office, laying cost shall be included in Schedule No.4)	10,000 m				
66.	Dedicated customer premises equipment at Fenaka Island Office, Cisco ASA 5506-X with Fire POWER Services	31 nos				
67.	Shared customer premises equipment at Island Council Office, Cisco ASA 5506-X with Fire POWER Services	31 nos				
68.	19" rack mountable Fiber patch panel with Splice tray Fibre patch panel with accessories and SC-SC duplex patch codes	31 lot				
69.	Minimum 6U Wall mount cabinet with 4 Power outlets with Surge Protection Circuit (Per Customer site)	31 nos				
70.	1000BaseT to 1000BaseLX (SC) Single mode Media Converter (Single mode SC fiber connection to Ethernet RJ45 Connection)	62 nos				
71.	Dedicated customer premises equipment at Fenaka Head Office and Maldives Energy Authority, Cisco ASA 5506-X with Fire POWER Services	2 nos				
72.	Blade Server with minimum 1 TB Storage (Blade server will be installed in NCIT existing chassis)	1 nos				
73.	Virtualization Software, vSphere Enterprise Plus 1CPU with 3Year Subscription	1 nos				
74.	Data Acquisition and Monitoring Software to acquire, store the data from island powerhouses (software shall be designed for minimum 200 islands, and 26 islands included in this project and 5 islands from Phase 1 shall be connected to the system)	1 lot				
75.	Workstation with 72" high definition Monitor at FENAKA Head Office and Maldives Energy Authority Intel® Core™ i7-7700 processor ,16GB RAM, HDD SATA III, 7,200 rpm, 1TB LAN 10/100/1,000 MBit/s 2-USB 3.0, HDMI port, Operating system Windows 10 Pro	2 nos				
<b>TOTAL G.</b>						

**Item #2. Section 6, 3 Technical Specification**

***Please add Under Section 6, 3.18:***

**3.18 Central Data Acquisition and Monitoring System**

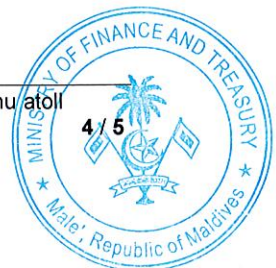
The scope of the work is to establish a central data acquisition and monitoring system that covers the main elements, subsystems, and other equipment that combines information from 31 the islands (5 islands from Phase 1 and 26 islands from Phase 3A) involved in the project and displays that information in a general view.

The Contractor shall be responsible to arrange the connectivity and system integration of the 5 islands in Phase 1 and 26 islands in Phase 3A, however the software shall be designed to cater additional 169 islands.

The Contractor shall be responsible for detailed design and engineering of application software and hardware interface to transfer data from local server to main server in NCIT (National Center for Information Technology – located in Male’). The bidder shall include proper definition and execution of all interfaces with systems, equipment, material and services of utility for proper and correct design, performance and operation of the project. The bidder shall get approval from the client before designing the software interface, reporting format and graphical presentation etc. And the bidder shall be flexible to include necessary changes required by the client and utility company without additional cost.

The front end software shall be designed with following functions:

1. Main Screen with Maldives Map with Zoom In/Zoom out functions.
2. Mimic Diagram of whole System at Island Level with last updated values.
3. Real time alarm and even management (Indicating class, priority, type, severity, delay)
4. Report Generation
  - a. Fuel savings compared with specific baselines
  - b. Energy generated in kWh per technology
  - c. Financial data per kWh
  - d. Energy demand per island or clusters of islands. Daily, monthly, seasonal and yearly variations of this demand
  - e. Performance ratio calculation
  - f. Number and location with Communication failures
  - g. Mean recovery time response for failures
  - h. Availability and reliability assessments



5. Graph Generation
6. Printing functions
7. Data export in csv and pdf format

The contractor shall design a suitable data management software for back end server to acquire data from local powerhouse SCADA and to store in central server in NCIT.

NCIT will be responsible for network hardware configuration and firewall setup.

The offered blade server shall be designed to fit the existing Dell PowerEdge M1000e blade server chassis.

The specification of blade server shall be as below or equivalent.

PowerEdge M630	PowerEdge M630 Server
Chassis Configuration	2.5" Backplane with up to 2 Hard Drives and On-board SATA
Processor	Intel® Xeon® E5-2640 v4 2.4GHz,25M Cache,8.0GT/s QPI,Turbo,HT,10C/20T (90W) Max Mem 2133MHz
Additional Processor	Intel® Xeon® E5-2640 v4 2.4GHz,25M Cache,8.0GT/s QPI,Turbo,HT,10C/20T (90W) Max Mem 2133MHz
Memory DIMM Type and Speed	2400MT/s RDIMMs
Memory Capacity	32GB RDIMM, 2400MT/s, Dual Rank, x4 Data Width
RAID Configuration	No RAID, On-board SATA (1 or 2 HDDs, SATA/SATA SSD)
RAID Controller	Embedded SATA
Hard Drives	480GB Solid State Drive SATA Read Intensive MLC 6Gbps 2.5in Hot-plug Drive, S3520
Network Daughter Card for Fabric A	QLogic 57810-k Dual port 10Gb KR CNA Blade Network Daughter Card
Embedded Systems Management	iDRAC8 Express, integrated Dell Remote Access Controller, Express for Blades
Advanced System Configurations	UEFI BIOS

## Clarification 1

S.No	Question / Clarification from bidder	Answer
	<p>According to the Section 4-BDF-Rev 2, "Schedule No. 1: Plant and Mandatory Spare Parts Supplied from Abroad", it's well described as: PV Modules: 2.86MWp (Quantity) However according to the Section 6-ERQ-Rev2,"3.2.1 Photovoltaic Modules", it's mentioned as: The nominal cumulative DC power (STC conditions) of the PV systems shall amount at least to 4.3MWp(+2.5%/-0%), distributed on 26 islands (+/- 10% DC power variation is allowed on the specific islands as long as the total contractual amount is within the above given range). Question: Please clear the PV Capacity for this project in order to well prepare bid</p>	<p>PV capacity for this project is 2.86MWp. In Section 6, 3.2.1 it is a typo error.</p>
2	<p>1. Whether the bid security (Bank Guarantee) delivered by the bidder's country is acceptable for the evaluation? 2. For the civil works to be subcontracted during the construction period, if it's necessary to prepare the authorization letter to the bid (Section 3-Evaluation and Qualification Criteria)?</p>	<p>Yes. For civil works it is not necessary to submit authorization letter from the subcontractor. For the other materials and equipment it is necessary to submit manufactures' authorization from relevant parties.</p>
4	<p>3. For the foreign material to be imported, whether the importation custom duty is exempted? According to the Section 6 "Employer's Requirements"--3.2.6.3 Technical Requirements for Type 2 meteorological station "The following specifications are for Type 2 meteorological station which shall be installed on the islands as specified in Chapter 2.6 Global solar irradiation on horizontal plane (Reference cell): Reference cell (same technology as used in PV power plant, suitable to be installed horizontally)" Please clarify the "Reference cell" in detail. What does it mean? What kind of sensor?</p>	<p>Import duty will be exempted. Its referring to photovoltaic cell which is manufactured using the same technology as offered PV power plant to measure solar irradiation.</p>
5	<p>3. For the foreign material to be imported, whether the importation custom duty is exempted? According to the Section 6 "Employer's Requirements"--3.2.6.3 Technical Requirements for Type 2 meteorological station "The following specifications are for Type 2 meteorological station which shall be installed on the islands as specified in Chapter 2.6 Global solar irradiation on horizontal plane (Reference cell): Reference cell (same technology as used in PV power plant, suitable to be installed horizontally)" Please clarify the "Reference cell" in detail. What does it mean? What kind of sensor?</p>	<p>Import duty will be exempted. Its referring to photovoltaic cell which is manufactured using the same technology as offered PV power plant to measure solar irradiation.</p>



<p>5. According to the Section 6 "Employer's Requirements"---3.1 General "Beside all the component specific documentation to be delivered, the Bidder shall also provide at least:  ---Main distribution network diagram  ---Sizing calculations  ---Modification design "  Question 1: Normally the employer should provide the "Main distribution network diagram", after receiving this guide diagram; the bidder can detail other relevant drawing. Please complete this.  Question 2: Here, what does it mean "Size calculation"? the "Sizing" means for ?  Question 3: The "Modification Design" is too vast, so can you explain us its scope?  What item it Includes?</p>	<p>1. Please note that this refers to general requirements of design, manufacturing, installation and testing. During detailed design stage the contractor shall provide these documents. Main distribution network which is required for bidding process is included in Section 6_Drawings.  2. Size calculation refers to cable sizing.  3. Bidder shall study the tender document and site and propose any modification designs where modifications are required to complete the project according to the tender specification.</p>
<p>7  1. Bid Security  In the "Bid Announcement", it is quite stipulated that "The Bid Security of USD 240,000 fulfilling the conditions indicated in the Bidding Documents must accompany all bids."  However, in the "Section 2-Bid Data Sheet", it's demanded as "The bidder shall furnish a bid security in the amount of US 300,000 or the equivalent in a freely convertible currency calculated based on the rate mentioned in ITB37.1."  Question: Please clear the Bid Security Amount in order to well prepare the bid guarantee.</p>	<p>Bid Security shall be USD 300,000.00 as per the Section 2_Bid Data Sheet ITB. 21.1. The amount specified in the bid announcement is a typo error.</p>
<p>8  Is the first deadline really a complete proposal for the project or do you plan to have a stage of "Expression of Interest" first, already selecting suitable companies?</p>	<p>The bidder shall submit the complete proposal before stipulated deadline in the bid document.</p>
<p>9  Does non-participation on the prebid-meeting prohibit participation on the bidding process?</p>	<p>Those who do not participate in prebid meeting also can submit bids.</p>
<p>10  Will you share the questions and answers that reached you regarding the project with all interested parties or only with registered tenders?</p>	<p>It will be uploaded on <a href="http://www.finance.gov.mv">www.finance.gov.mv</a> &gt; tender &gt; Under invitation for Bids   Ref: (IUL)13-K1/13/2017/16</p>
<p>11  Are there also additional information available yet, e.g. as a result of the prebid meeting?</p>	<p>If there are any additional information it will be uploaded on <a href="http://www.finance.gov.mv">www.finance.gov.mv</a> &gt; tender &gt; Under invitation for Bids   Ref: (IUL)13-K1/13/2017/16</p>
<p>12  Total PV Size mismatch: According to Section 6 - ERQ, nominal cumulative DC power of the PV systems is 4.3 MWp. But Section 4 - BDF indicates only 2.86 MWp. Please clarify the amount.</p>	<p>Please refer to Answer 1</p>
<p>13  Need to ground all clamps if using clamps mounting system, or grounding module with equipotential with structure is enough ?</p>	<p>Each profile has to be grounded.</p>
<p>14  Tolerance on genset +20%/-5% -&gt; Impact on performance guarantee if any ?</p>	<p>No.</p>



15	For each cycle above the defined minimum requirement, an adjustment of 100\$/US/cycle will be reduced to the bid price for evaluation purposes. Is this referring to the overall cycles? Or per island/cell?	Overall cycles.
16	Ground mounted structures: is only aluminium allowed?	Yes, only anodised Aluminium. Please refer Section 6, chapter, 3.2.3.3
17	Please clarify whether the project is exempt from all the custom and import duties.	Custom duty will be exempted.
18	Please clarify if the successful bidder is a foreign company, does it has to be registered in the employer's country to execute the project?	Yes.
19	Please clarify if the successful bidder is a foreign company, does the bidder is liable for 6% GST ?, given that the bidder is not a registered entity in the employer's country	Only the products and services obtained from Maldives will be subject to GST
20	Outdoor weatherproof GRP sealed enclosures shall be protected to IP67 according to ERQ. But in the BOQ (Section 4 BDF), protection requirement for DB is IP 65. Please clarify which protection grade we have to provide	It should be IP65. (It is a typing error)
21	LV AC Cable quantities mentioned in the BOQ are less than the total LV AC cable quantity indicated in the drawings. Specially the LV cables used for the proposed new generator connections are not included in the BOQ.	There might be minor differences in cable length of network cables. Please refer to the quantity in BOQ for prices. The LV cables for all generators are included in Section 4, Schedule No.1, Item 43 and 48. Please note that power cables used in existing generators should be replaced.
22	Section 6, point 3.15 says that "The Bidder is required to provide training at manufacturer's site for two persons from each power house and two staff from Fenaka head office (total 28 persons)". But since there are total 26 islands included in the project, a total of 54 persons will be participating for the training. Please clarify	It was a typo error. It should be 54 persons.
23	According to section 6, 3.2.3.1 "The roof covering shall be refurbished/ renewed before the installation of PV modules mounting structure starts in cases there the roof covering shows signs of corrosion or any other signs of deformation" Roof refurbishment cost born by bidder or roof owner ?	Roof refurbishment cost if required will be borne by the client.
24	Do we have to provide DC side string monitoring according to section 3.2.5.2	Monitoring is required in AC combiner boxes only.
25	Required Pyranometer class is not mentioned in section 3.2.6.2	It should be class 1
26	In the tender documentation, Section 6 paragraph 3.3.3 is mentioned that: "A fire & smoke detection system shall be installed in all rooms/containers of the system. In case of fire, a visual and audible alarm has to be activated. The fire protection system shall be equipped with a UPS system to ensure functionality even in case of grid failures." Good practice is to install a proper fire-fighting system in the batteries room, for safety reason. We need to clarify is the only detection system is required, or it will be mandatory a	Basic fire fighting equipments shall be installed in the battery room.





	In SHAVIYANI Atol Island C08, it is recommended to use only the Free field with 130 kWp, but the installable power is only 86 kWp.	Size of free field will be extended to cater the proposed PV size.
27	In order to reach the power needed there are two options: a. Get more space in the free field ( X+4 m and Y+1 m) b. Use two more roofs: School B & C, which will provide the 44 kWp needed.  We need to get a clarification on client's preferred solution.	
28	We would like to understand that with above project, should we qualify to bid?	Please refer to Section 3_EQQ_Rev1 for Qualification Criteria.
29	The project delivery date will start from effective date, will it be started from the first payment date or not?	Project date will start from first payment date.
30	What is the base of the applicable rate for liquidated damages: 0.5% per week?	Yes it will be 0.5% per week. Please refer to Section 8_SCC, 26.2
31	The defect liability will include the consume material such as battery or not ?	Yes.
32	Employer will provide the water for basement cement construction or not?	It is the responsibility of the bidder.
33	O&M support scope will be same as defect liability or not? How many person will attend the training? What is the detail requirement for training pocket?	O&M support and defect liability are not same. Total 54 staff from FENAKA Training pocket expenses will include Daily Subsistence Allowance (DSA) and hotel
34	If the design is not match with the actual status, the price can be negotiated or not during the implementation period	All designs shall be prepared according to the specifications provided in the bidding document. The price cannot be negotiated during implementation period.
35	Tier 1 manufacturer only Refers to the level of supplier? A brand line?	Refers to Level of Supplier
36	For DC Box: PV string inverter of our company, use the No fuses design, also has Type II surge arresters for both DC and AC, and each string fault detect function. In our solution, the DC boxes do not need to be use. Is this acceptable?	Yes.
37	For PV string inverter: To achieve maintenance-free, we suggest the PV inverter use no fuses and nature cooling without fans design	ok.
38	For Battery: In the islands application condition, Battery lifespan is depend on the cycle times(4,000 cycles at 80% of DOD at 25°C), so we suggest to use the cycles requirement, not a calendar life of 20 years	
39	For Battery: What is the international applicable standards to receive and recycle the lithium-ion batteries ? And what is the recycle detailed process?	It is the responsibility of the bidder to find these details.



40	For Battery Inverter: Because the battery is the core device of the system, we suggest battery inverter use modular design and redundant design to eliminate single point failure, which can make the system more reliable	ok.
41	For Diesel Generator: All elements of the Diesel Generators shall be of marine grade quality and designed to withstand the environmental conditions on site. And what is corrosion degree, what kind of standards for acceptable and unacceptable. Can you tell us the detailed standard of this condition? Or give us some suggestion?	For details please refer to Section 6, chapter 3.4
42	For PCMS: The system shall communicate with and provide data to the SCADA system. Can you give us the detailed information of SCADA system. For example, which data must be monitor?	Please refer to Section 6_Appendices > J431-ILF-AD-00027_List of Signals for centralized SCADA System
43	For PV Inverter Housing: String inverter shall be installed indoor wherever locations are available. How many existing buildings can available in these 26 islands?	There are no indoor spaces available in these sites. Contractor shall build inverter housing according to Section 6, Chapter 3.2.4.8 Inverter Housing
44	For PCMS: The PCMS is integrated in Battery inverter of Huawei solution. The controller of battery inverter provide interactive control and monitoring for specific parts of the PV power plants, the Battery Energy Storage Systems (BESS), diesel power station and auxiliaries. Is there a computer to access in each island? And the computer to date anti-virus program to be delivered and installed	Please refer to Section 6, Chapter 3.7 for PCM specification and features. For data access and monitoring, computer shall be provided with antivirius.
45	Type tests and verifications according to applicable codes and standards shall not be repeated, if a copy of the type test certificate is provided for same model. what mean " if a copy of the type test certificate is provided for same model"	This refers to PV modules, if bidder is offering a PV module which is already type tested, the bidder can attach a copy of the type test certificate and it is not required the same test again for same model.
46	The DC/AC junction box shall be also tested at site to ensure proper functionality during e.g. Whether you need to clear the scene of the test item	Yes each box shall be tested and shall be witnessed by employer or by employers representative.
47	Each have to field test? For fibre optic cable: Is there some fibre optic cable exist now? Or all the fibre optic cable must be installed by us?	No fiber optic cables exist in these islands. All the fibre optic cable must be installed by contractor
48	For Diesel Generator controllers: New diesel generator must be used to connect all the existing generators synchronizing, so we need more information about the existing generators, such as the technology documents and communication protocol	Please refer to Section 6, Chapter 2_Site Specification
49	The diesel engines shall be of the general purpose, stationary, solid injection, internal combustion, compression ignition and exhaust gas super charged type. what meaning "Charged", is driven by the exhaust turbocharger?	These are basic engineering terms.



50	The industry under low-load rate of 30% most will produce carbon deposition, please recommend related comply with the requirements of diesel engine manufacturers	The bidder shall supply the generators which meet the technical requirement specified in the bid document.
51	There shall be digital interface for reading of all the Diesel Generator sensors installed and the operational data of each Diesel Generator that will be exchanged with the PCMS. Other vendors' unit has controller communication protocols that can be opened to the customer and update the management system for the protocol software in order to achieve data interconnection	The main generator controller installed for each generator set in main generator synchronising panel shall be responsible for this job.
52	Cos phi (single and total) what mean about "COSPHI"	CosPhi refers to power factor
53	"The communication between generator controllers and corresponding actors, sensors, governors, etc. on the genset may be done with different communication protocols, such as CAN-Bus for example." The above has asked the unified use control system and computer management system, and require different controller communication protocol, maybe its contradiction	The communication between Diesel Generator controllers and PCMS shall be realized via Modbus. However, the communication between this controller and other sensors or devices may use CAN-bus or any other communication protocol.
54	The generator shall be painted with high quality marine grade paint. what mean about "marine grade"	A quality of product specially formulated or treated to withstand use at sea or coastal area.
55	"Common-Rail" fuel injection system with electronically controlled injection desired, if it is available for the size of the engine what the detail required of "Common-Rail"	This detail can be obtained directly from engine manufacturer.
56	25%load rate of fuel consumption requirement is too high, please recommend related that meets the standard diesel engine manufacturers	Please note that you have to offer generators with lower or equal fuel consumption than the values mentioned in Section 6_ Table 3.1: Specific fuel consumption requirements of Diesel Generators
57	For Diesel Generator: On-site test cost is high, it is suggested that the factory acceptance test	On-site test is a requirement.
58	Measurement with cosφ=0.8 LHV=42700 kJ/kg, 3% measurement tolerance. Cosφ =0.8 Mean power factor?	0.8 Powerfactor
59	All special tools required for the operation and maintenance of the system shall be provided by Bidder. What is a special tool?	These are specials tools which are required for maintenance of diesel engines and other equipment.



60	The resistance requirement in between enclosures shall be less than 1 ohm. The resistance measured against ground shall be less than 1 ohm. What is the standard usage scenarios and reference of the 1 ohm? Powerhouse? PV? What is the current resistance value? Can, between 1-10 ohm?	It shall be 1 ohms as specified in Section 6_3.9.4 Equipment Earthing and Bonding
61	AC system: surge arrestors, class 2, at the incoming point of supply shall be provided. The surge arrestors shall be installed in the Main DB. What is "Main DB" (Distribution BOX ?)	Yes.
62	The surge arrestors shall be of class 2 with visual fault indication, 40kA (8/20) according to IEC 61643-1 for sensitive electronics, clamping voltage to less than 1,500V. Units with replaceable LP modules are required. What is "LP"	Lightning Protection
63	1. Powerhouse relocation, According to the Chapter 2.5, Section 6, there are 12 powerhouses to be relocated without any further information. I am wondering if works related to powerhouse relocation are included in bidders' work scope and needs to be quoted in the bidding form.	Powerhouse relocation is not included in bidders scope of work.
64	2. Bid Bond We found discrepancy in bid security amount. Amount of bid security is "USD 240,000" in the invitation letter but it is 300,000 in ITB 21.4 in the Section 2.	Refer to answer 7
65	3. Performance guarantee Are there any specific requirements on renewable penetration rate and amount of diesel usage in both type of B and C and interruption by outage or system failure?	Please refer to section 6 Employer's Requirements
66	4. Parts supplied from Employer's country According to criterion 1.3.7, Section 3, it is said that there is no Domestic Preference. Does it mean that no matter how much items manufactured in Maldives we use, it doesn't affect evaluation?	Yes.
67	What is general power of appliances in the Health center, Mosque men and School separately?	These informations are not relevant for this project as the Energy produced from each PV site will be fed to utility grid.
68	Whether the Health center, Mosque men and school will install one hybrid solar system or three separate hybrid solar system?	Please refer to Section 6 Employers Requirement for a clear view of the project.



69	How many kWh electricity the battery need to store?(Or how many hours the battery need to support the appliances at night)	Please refer to Section 6_Employers Requirement for a clear view of the project.
70	Whether the battery has to be lithium battery? Is lead acid battery optional?	Only Lithium Battery will be accepted.
71	We would like to ask if there a Joint bidding between a Spanish Company and Nigerian one would be eligible to participate in the tender.	Joint bidding is allowed. Please refer to Section 3 for evaluation criteria and Section 5 for eligible countries.
72	Q1. Questions about the Diesel Generator and Genset controller a. No request for the recommended spare parts. b. No configuration requirements of the diesel tank, whether the bidder need to provide or not. c. No configuration requirements of the diesel flow meter. whether the bidder need to provide or not.	a. In addition to mandatory spare parts if the bidder believes that certain spare parts are necessary for operation, it should be included. b. Diesel tanks are not included in bidders scope of work c. Supply of fuel meters are not included in scope, however communication cables shall be laid for the flow meters.
73	Q2. Questions about the Hybrid power plants in Shaviyani a. The drawings which need to add size of roof and proof size of roof slope: 1. C16-Milandhoo: School Old (Roof size Y, slope are wrong); School New (Lack of size). 2. C13-Komandoo: School (Lack of size). 3. C06-Bilehfahi: Mosque (Lack of size). 4. C04-Feydhoo: School (Roof size X&Y are wrong).	There might be minor differences, however this shall be rectified during detailed design.
74	b. Lacking necessary documents : J431-GOPA-GEN-GR-E-D-0002	Section 6_Drawings\Noonu\03. Typical Drawing
75	1. <Plant 1S2E Section 6_ERQ_Rev2> Page 6-24, Table 2-2 "Total installed PV: 2.855MW" and Page 6-210, 3.2.1.1 "The nominal cumulative DC power (STC conditions) of the PV systems shall amount at least to 4.3 MWp (+2.5%/-0%)" are inconsistent. Question:Please check the data to confirm the correct one	Refer to answer 1
76	2. <Plant 1S2E Section 6_ERQ_Rev2> Page 6-47, Table 2-29 "From Main LVDB(PH-FEEDER-B) to DB-1 Cable size(sq.mm) is 4Cx240" and <J431-GOPA-001-GR-E-D-0001-RevB (C03-GOIDTHOO)> "From Main LVDB(PH-FEEDER-B) to DB-1 Cable size(sq.mm) is 4Cx120" are inconsistent. Question:Please check the data to confirm the correct one	It should be 120sqmm. It is a typo error.
77	3. <Plant 1S2E Section 6_ERQ_Rev2> Page 6-62, Table 2-45 "From DB-B2 to School-PV The length of Cable size(4Cx70sq.mm) is 25 m" and <J431-GOPA-065-GR-E-D-0001-RevB (C05-FEEVAHKU)> "From DB-B2 to School-PV The length of Cable size(4Cx70sq.mm) is 95.5 m" are inconsistent. Question:Please check the data to confirm the correct one	It should be 25m. It is a typo error.



78	<p>4. &lt;Plant 1S2E Section 6_ERQ_Rev2&gt; Page 6-243, 3.5.6.3 "Outdoor weatherproof GRP sealed enclosures shall be protected to IP 67, according to IEC 529, and insulation class II according to IEC 232, or other equivalent recognized reputable international standards." and &lt; Plant 1S2E Section 4_BDF_Rev2&gt; Page 4-12 E.1-44 "Low Voltage Distribution boxes, Outdoor weatherproof GRP sealed enclosures, IP 65, according to IEC 529, and insulation class II according to IEC 232, with associated accessories as per Employer's requirements" are inconsistent. Question:Please check the data to confirm the correct one.</p>	<p>It should be IP65. It is a typo error.</p>
79	<p>5. &lt; Plant 1S2E Section 4_BDF_Rev2&gt; Page 4-12 E.1-45 "Replacement of existing Main LV distribution board in Power house and accessories with associated works including cabling and changeover/transfer of loads from existing to new distribution board as per Project requirements (Refer to proposed conceptual single line diagram for specific requirement of each island)." The quantity are 12 Lots. Question:There are 13 islands in Shavivani atolls,Please explain which parts do the 12 lots including ? Only for ESS or ESS&amp;Generator or other?</p>	<p>It is not required to replace the C04_Feydhoo Panel Board. Here it is referring to Generator Control Panel and Main Distribution Panel Board. Therefore, out of 13 islands in Shavivani you will need to replace existing panels in 12 islands. Please refer to Section 6_Drawings_Powerhouse SLD for included items in these 12lots (Generator Synchronizing Panels, ESS incoming and main distribution).</p>
80	<p>a. The drawings which need to add size of roof and proof size of roof slope: 1: D02 School B1,B2(Roof size X). 2: D05 School A1,A2 (Roof size Y) ,School C2 (Roof size Y) . 3: D08 Powerhouse A1,A2 (Roof size Y) . 4: D08 School A1,A2 (Roof size X) . 5: D08 School C1,C2 (Roof size Y) . 6: D10 School A1 (Roof size Y) . 7: D11 Council office A1,A2 (Roof size Y) . 8: Is the Roof size Y of D12 Powerhouse A1 cut the chimneys ? 9: Roof size and slop of council office B1 of D03-3. 10:D03-Kendhikuhdhoo: Council Office (Lack of size, slope are wrong). 11:D12-Manadhoo: Free Field (lack of size). 12:D13-Holhuhdhoo: Free Field (Lack of size).</p>	<p>Please refer to Section 6_Appendices, J431-ILF-AD-00024_Phase2C-Roof Pictures and overview and Section 6_Chapter 2 for size and slope. For free field installation estimated installation amount is given at this stage, and winning bidder shall study the site and propose best design for these fields. Lowest point of free field Structures designed for free field shall be atleast 3m high.</p>
81	<p>There is no access point location of the Youth Centre in the drawing named "D15-J431-GOPA-092-GR-E-D-0001-RevB (D15-VELIDHOO)", It is not the same as the access point in the table which is from page 205 to 206 in section 6, Need confirmation.</p>	<p>PV will be installed only on school, powerhouse and health centre roof.</p>
82	<p>c. Lacking necessary documents : J431-GOPA-050-GR-E-A-0001</p>	<p>Correct Drawing Number is D02-J431-GOPA-050-GR-E-D-0001-RevB (D02-HENBADHOO)</p>



83	<p>1: D10, School-PV connect to "DB-C6" or "D1-X1"</p> <p>2: D12, the Proposed Cable Size from DB-PD3 to DB-PD4 is 240 or 150?</p> <p>3: D13, Has the cables "from DB-D3 to DB-D4" and "from DB-D5 to DB-D5" been in existence? Do not need in this project?</p> <p>4: D14, Has the cables "from Main LVDB to DB-A1", "DB-A1 to DB-A2", "DB-A2 to DB-A3", "DB-A3 to DB-A4", "DB-A4 to DB-A5" been in existence? Do not need in this project?</p> <p>5: D15, Has the cables "from Main LVDB to DB-C8" been in existence? Do not need</p>	<p>1. This DB was earlier labelled as DB-C6 and later this was labelled as D1-X1. Anyway, it is referring to same DB and there will be no difference in cable size or length.</p> <p>2. 240sqmm as in the drawing.</p> <p>3. Yes, it is not required to change the cable segments in between these boxes.</p> <p>4. Yes, it is not required to change the cable segments in between these boxes.</p>
84	<p>1. Section 6, chapter 1.2 is mentioned: The Diesel Generator system includes the Diesel Generators, fuel piping, and storage, fuel flow meters</p> <p>a. Please provide with the technical specifications of the required fuel storage</p> <p>b. New fuel storage will be provided for the existing gensets only or need to consider the existing gensets as well.</p> <p>c. Fuel flow meters, for the new and the existing gensets? Analog or digital type? If digital need to communicate with the PCMS (which communication protocol is</p>	<p>a/b. Fuel Storage is not included in this project</p> <p>c. Fuel flow meters are not included in this project, however existing flowmeters shall be connected to PCM via modbus communication.</p>
85	<p>2. As described in section 6, the PV inverters to be used will be string inverters having rated power less than 30 kW. Is it necessary to use DC combiner boxes?</p> <p>3. Price schedules, except the GST, is there any other tax to consider?</p>	<p>Not necessary.</p> <p>Please contact Maldives Inland Revenue Authority</p> <p>Phone: +960 332 2261</p> <p>Fax: +960 331 6577</p> <p>Email: 1415@mira.gov.mv</p> <p>website: www.mira.gov.mv</p>
86		
87	<p>4. In the price schedule, E2 Noonu Atoll point 47.9 the total length for the 4C x 300 sq.mm formation is 4,20 m? Please advise.</p> <p>5. PV modules, Price Schedule N.1-point A.1, is stated 2.86 MWp. In section 3 (3.2.1.1 &amp; pg. 6-210) the minimum STC nominal cumulative DC power is stated as 4.3 MWp +2.5%/-0%. Please advise which one to consider.</p>	<p>It is 420m. It's a typo error.</p> <p>Please refer to answer 1</p>
88		Refer to Answer 43.
89	<p>6. Section 6, chapter 3.2.4.8 PV inverter housing. There are not clearly stated the quantities of outdoor or indoor installations. Please specify how many outdoors installations of the PV inverters will be necessary. A requirement for the indoor installation is the presence of air conditioning units. Please provide details to the room size (height*area), related to the indoor installations.</p>	
90	<p>7. Meteorological stations, 3.2.6.2 &amp; 3.2.6.3. Please clarify the minimum data logging interval.</p>	<p>Please refer to Section 6_Appendices_J431-ILF-AD-00027_List of Signals for centralized SCADA System</p>



	8. Section 6, Chapter 3.15 Training program. The requested personnel is stated as two persons for each powerhouse plus two staff from Fenaka HQ. The total number of the participant should be 54 persons. The number of the participants, as stated in pg. 6-305, is 28 persons. Please clarify the requested number of the participants in the training program.	Yes, it is a typo error. Correct number is 54.
91	9. Replacement of Existing DBs. In Table 2-3 (pg. 6-26) the requested DBs to be replaced appears to be 61. Section 4, price schedules E1 (point 44) & E2 (point 49), the total number is 62. Please advise.	Please quote for 62 numbers.
92	10. Is it required PVSyst simulations to be submitted as part of the Technical Bid documents?	Yes.
93	11. The roof of the ground-mounted structure need to be waterproof? What is the desired height from the ground level? Please advise.	Yes the roof structure shall be waterproof and the minimum height of the lowest point shall be 3m.
94	Would it be possible to provide us more info on your project. We at XANT might be interested through partners to participate?	Please read the Section 6_Employers Requirement. One or more partners who meet the Eligibility criteria mentioned in Section 3 and Section 5 can participate. Bidding Documents are available at <a href="http://www.finance.gov.mv">www.finance.gov.mv</a>
95	Please confirm the amount of the bid security is \$ 240,000 or \$ 300,000? And whether the period of validity of the bid security is 180 days or not?	Bid security amount is USD300,000.00 and validity will be 180days.
96	Please confirm whether we can submit the audited financial statements form Year 2013 to 2015? Because the financial statement in Year 2016 is not available yet.	Yes.
97	Please confirm whether the exchange rate of the currency is the United Nations Operational Rate of Exchange on March 20, 2017?	Yes.
98	Please confirm whether to build a new power distribution room. That is, the new power distribution room needs to accommodate all the micro-grid equipments and battery cabinets. If need to, the best location for the distribution room is not far from the diesel engine room, because the diesel system needs to be controlled.	A room shall be built or shall provide a containerized solution if required.
99	If use the existing distribution room, please confirm whether the infrastructure (foundation) can meet the equipment load-bearing requirements, because the battery is relatively heavy.	Refer to answer 99
100	The original electrical equipment has a rated voltage and current, from the micro-grid system (AC) directly to the existing power distribution room, system power is greater than the original power, please confirm whether the original power supply room equipment can load the new micro-grid system.	Please refer to provided SLDs. Bidder shall include rates to replace the existing distribution panels with new panels as per the SLDs.
101	Please confirm that the existing diesel power distribution system is incorporated into the 11kV busbar, or into the low-voltage power supply lines	Yes. But please note that these generator synchronizing panels, Power Distribution Panels shall be replaced with Power and Control cables between the generators and panel boards.
102		



103	Please confirm whether there are 11kV busbar. If there are, whether the capacity of the transformer can accept the energy from the micro-grid system	Right now there is no 11kV system in any of these islands. All these islands have low voltage (400 volts) underground cables.
104	Please confirm the original diesel engine meets the communication control requirements, because the diesel system and micro-grid system should be combined together.	The bidder is requested to offer new generator synchronizing panels with suitable generator controllers which can communicate with the micro-grid system. The existing generators and new generators shall be connected to this control panel system
105	Please confirm that the spare parts are provided for 2 years in the Section 4 (Schedule No. 6 ) offer list or 10 years in the Section 8 (7-7.3). Or that offer in accordance with two years, but the actual is 10 years, 2 years after the remaining 8 years of additional costs incurred again?	In Section 4, Schedule No. 6 the supplier should quote for spare parts required for 2 years, however supplier shall be able to provide the spare parts for 10 years within 3 months of placing the order and opening the letter of credit. Please read Section 8 (7-7.3) carefully.
106	Please confirm whether it is necessary to match the tender quotation list format in the tender documents. Because there may be some equipment material shall be used but not mentioned in the tender price list.	Additional items can be added to price schedules. However bidder shall not remove any items from the list or change the format.
107	Section 8 (30-30.1) refers to " The multiplier of the Contract Price is: 1.1", whether it can be understood that within the scope of responsibility, regardless of changing the program or increasing the equipment material, as long as the price does not exceed the range of contract price * 1.1, it defaults to contract price. Or exceed the range of the contract price * 1.1, the parts beyond this range should cost extra. Also, please clarify the limits of liability mentioned in the article.	The bidders should submit a reasonable price to deliver all the works specified in the scope of work. The price agreed can not be changed during the project implementation period.
108	Tender requirements are lithium-ion, please confirm whether it can only use lithium batteries, or can use other batteries	Only Lithium Battery will be accepted.
109	Tender requires the cycle discharge is more than 4000 times, currently many brands of lithium batteries, in the same conditions, the number of cycles is only more than 2000 times, if not more than 4000 times, whether to change the tender requirements?	There are sufficient number of reputable battery manufacturers in the market who produces batteries with cycle discharge 4000 or more. Therefore this tender requirement will remain same.
110	Refers to Section 6, Subsection 3.2.3 mentioned, an adequate corrosion protection shall be applied for the mounting structure and foundation. Please clarify the Level requirements of corrosion protection.	The contractor shall offer suitable corrosion protection for the materials that contractor plans to use, and this protection shall be suitable for coastal/saline environment.
111	Please clarify the maximum load value on the roof for photovoltaic panels installation. Is there any relevant structural design drawings?	Winning bidder shall carry out this exercise during the detailed design stage.
112	Refers to Section 6, Subsection 3.2.3.3, the minimum distance between two rows imposed: 2.8m. Please confirm whether the distance of 2.8m can be adjusted according to the shadow and site constraints?	Based on the site conditions during design phase this can be discussed.



113	Whether the tender documents (page23 2.5) C model of the storage power is too high? Take the 2.8 C02 Noomaraa island as an example, using 70KW / 70KWh energy storage, on the process of battery discharge, the average load is about 25KW on this period of time in 2017. Even in 2022(please refer to Figure 1), the average peak load up to 45KW on this period of time, also do not need to 70KW. In maintaining the original capacity of the same circumstances, whether the battery power can be reduced (using the original 2/3)?	Please note that C 02 is designed to have a grid forming battery system where generators will be switched off during day time. Hence the battery capacity cannot be reduced.
114	PV is sufficient here ( refers to arrow in figure 2), whether it is removed the redundant PV? Because this figure does not show the battery discharge process.Please clarify when will the battery charge and discharge in B mode, and what is the main role of the battery in Type B. Or that is, in the Type B, the battery is only used for emergency mode or diesel or PV switch?	In type B, battery is used for grid support. Battery will be charged using only PV, and when there is a PV fluctuation, this battery will be used (discharged) to stabilize the grid.
115	The tender documents mentioned the PCMS system function is equivalent to one part of our energy management system (EMS). EMS system also includes the function of energy prediction, energy controlling, security analysis, economic scheduling and etc. So it is more suitable to use EMS system	The heart of this system is PCMS system, which controls the output of battery and PV together with generators to maintain the grid stability while injecting the maximum PV. In addition to this Energy Management is included in this system.
116	Singyes solar suggests the energy storage inverter must have off-grid automatic switching function in a frequency. The reason is as the following(Shown in figure 3): there is no problem in Type B, but if the energy storage inverter does not have this function in the Type C mode that the diesel engine into the grid directly, and it will cause conflict with the battery	Yes this function is a must for type C.
117	Please confirm whether the distribution box DB-A1, DB-B1, DB-C1 in the drawing part of the electrical network diagram respectively access to Feeder A, Feeder B, Feeder C of the distribution house?	Yes. (DB-A1, DB-B1, DB-C1 refers to first distribution box of outgoing Feeder A, Feeder B, Feeder C of powerhouse, respectively)
118	Refers to table in Section 6, Subsection 2.5 in the tender documents, please clarify the meaning of "Powerhouse relocation planned". What kind of works should be done by the tenderer?	Its not included in this tender scope.
119	Refers to Section 4, Price Schedule "Schedule No. 1" in tender documents, Please confirm whether the price quoted for power and quantity of all equipments need to be fully in accordance with the figures in the table.	Rates shall be included for items which are not included in the schedule, necessary for completion of work according to tender specification.
120	Refers to Section 6, sub-section 3.2.1 in tender documents, the nominal cumulative DC power of PV system shall amount at least 4.3MWP, while in the quotation form "Schedule No. 1" of Section 4, the PV module is only 2.86MWP. Please confirm which data should we subject to.	Please refer to answer 1

