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<p>ނަންބަރު</p> <p>No:</p>	<p>TES/2024/G-003</p>		
<p>ފޮތް ނަންބަރު</p> <p>Project:</p>	<p>Design, Supply and Installation of Microgrid Modifications and Expansions for Integration of Proposed Photovoltaic Generation Sites in 20 Islands Across Maldives (3 Lots)</p>		
<p>ދިނުމުގެ ތਾਰੀޚް</p> <p>Issued Date:</p>	<p>18<sup>th</sup> August 2024</p>		
<p>ފޮތް ގެ ޖަދުވަލު</p> <p>No. of Pages: - 12</p>	<p>ބޯޕްރިޔަންޓް</p> <p>BoQ: -00</p>	<p>ޖަހާންތަކުގެ ޖަދުވަލު</p> <p>Drawings: -00</p>	

Please include this amendment when submitting the bid. بموجب هذا التعديل

➤ **Answers for the Queries are attached with this Clarification.**



سر سر

Name: Fathimath Rishfa Ahmed

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Signature:



Ref.No.	Clause of RFB	Queries/Clarification	Response
1	Volume II - Part 1 AP - 001 5.2.4 Energy Metering Instruments - P5 5.4.3 MCCB Panel - P10	<p>The accuracy class of energy meter is 0.5 in clause 5.2.4, but it is required to be 0.5s in clause 5.4.3, which one shall we follow?</p> <div style="background-color: #d9ead3; padding: 10px;"> <p><b>5.2.4 Energy Metering Instruments</b></p> <p>i) The energy metering facilities with Export and Import measurements shall be provided in incoming and outgoing feeder panels as indicated in 5.4.</p> <p>ii) <b>The programmable poly phase metering equipment shall conform to IEC - Static (Electronic) Three Phase Meters, Accuracy Class 0.5. The metering equipment shall be of the flush mounting type.</b></p> <p>iii) The meters shall be calibrated by the supplier taking into consideration that the errors of current and voltage transformers tested separately.</p> <p>iv) Necessary software package and the handheld programming unit (1 for each Island) shall be supplied with the LVDB panels.</p> <p>v) Volt free switching contact pulse output shall be available to send the energy measurements to the SCADA system. RS232 bus interface shall be available additionally for remote meter reading facility.</p> <p style="text-align: right;">Page 5</p> </div> <div style="background-color: #d9ead3; padding: 10px; margin-top: 10px;"> <p><b>5.4.3 MCCB Panel</b></p> <p>MCCB panel should be provided in the LVDB to connect LV outgoing feeders and PV incomer connections. The MCCBs shall provide both overcurrent and earth fault protection for the LV incomer / outgoing feeders (bi-directional).</p> <p>Individual MCCBs shall be provided in separate compartments in the panel. Panel shall be provided with following components / devices and any additional devices as required according to approved design to ensure full functionality;</p> <ul style="list-style-type: none"> <li>• XX Nos MCCB, 3 pole with shunt release, ratings as specified in schedules (ratings and quantity as specified in schedules)</li> <li>• XX Nos Earth Leakage Relay</li> <li>• XX Nos Ammeter with selector switch</li> <li>• <b>X Nos Digital Energy Meter, kWh &amp; kVarh, class 0.5 s, Export and Import measurements</b></li> <li>• 01 Lot Nos 4 Pole Terminal Block</li> <li>• 01 Lot Protection and Measuring CTs.</li> <li>• 1 Lot control cables Cu/PVC 2.5 sqmm</li> <li>• Other accessories / fittings / devices as required</li> <li>• Display indicating LV feeder number and MCCB ratings</li> </ul> <p>Note - XX shall be as defined in schedules. Internal separation of the panel shall be Form 4 as per IEC 61439-1.</p> </div>	<p>Please note that the technical requirements as indicated in following sections of the Specification # AP-0001 shall be applicable for supply of LV switchgear panels ;</p> <p>Section 5.4.1 - LV Switchgear Incomer and outgoing Panels / Transformer Panels</p> <p>Section 5.4.2 - BESS panels</p> <p>Section 5.4.3 - MCCB Panels</p> <p>Accordingly Digital Energy Meters of accuracy class 0.5s shall be supplied for all types of panels.</p>



2	Volume II - Part 1 AP - 004 1.0 SCOPE - P40	<p>Please confirm that the vector group of 0.415/11 KV STEP-UP TRANSFORMER is YND1 or YND11.</p> <div><p style="text-align: center;"><b>AP - 004</b></p><p style="text-align: center;"><b>TECHNICAL SPECIFICATION FOR 0.415/11 KV STEP-UP TRANSFORMER</b></p><hr/><p><b>1.0 SCOPE</b></p><p>This specification covers the design, manufacturing, testing, supply, delivery and performance requirements of 3 Phase, 50 Hz, 0.415 / 11 kV, <b>YNd1</b>, double wound with copper conductor, oil immersed, sealed (hermetically sealed) or non- sealed (conservator) type, ONAN cooled power transformer of capacities as specified in the BOQs for use in electricity distribution systems in Maldives.</p><p>Transformers shall have separate primary and secondary windings, oil immersed with natural oil and air cooling (ONAN).</p><p>The design of the tank, fittings, bushings, etc. shall be such that it will not be necessary to keep the transformer energized to prevent deterioration as the transformers may be held in reserve or outdoors.</p><p>The equipment / materials supplied shall be rated to be used under system parameters and service conditions given and clause 2.0 and 3.0 respectively.</p></div>	<p>* Vector group of 0.415/11 kV Step-up transformer - <b>YNd1</b> as indicated in specification #AP-004. (LV winding - Delta, HV Winding - Star and HV Phasor - 30 Deg Lagging)</p> <p>* Vector group of 11/0.415 kV Step-down transformer - <b>Dyn11</b> as indicated in specification #AP-005. (LV winding - Star, HV Winding - Delta and HV Phasor - 30 Deg Leading)</p>																																									
3	Volume II - Part 1 AP-005-1 2.1 Technical Parameters - P72	<p>1、The Transformers we encountered on the islands were all oil type during the site survey, Please confirm whether the Transformer in the Package Substation is dry type.</p> <p>2、The RMU is SF6 type as the technical description, but shows "Vacuum circuit breaker" on the Technical Parameters. please classify</p> <div><table><tr><th>Component</th><th>Parameter</th><th>Value</th></tr><tr><td></td><td></td><td>mechanism - IP 3X for the cable connection covers</td></tr><tr><td rowspan="6">Load Break Switch</td><td>Rated Current</td><td>630 A</td></tr><tr><td>Rated load breaking capacity</td><td>630 A</td></tr><tr><td>Rated short time current</td><td>20 kA / 3s</td></tr><tr><td>Rated breaking capacity – cable charging</td><td>110 A</td></tr><tr><td>Rated earth fault breaking current</td><td>200 A</td></tr><tr><td>Rated short circuit making current</td><td>50 kA<sub>ca</sub></td></tr><tr><td></td><td>Electrical and mechanical endurance class</td><td>E3 / M1</td></tr><tr><td rowspan="3">Earthing Switch / Disconnecter</td><td>Rated Making Current</td><td>50 kAp</td></tr><tr><td>Rated short time current</td><td>20 kA / 3s</td></tr><tr><td>Electrical and mechanical endurance class</td><td>E2 /M0</td></tr><tr><td rowspan="4">Vacuum Circuit Breaker</td><td>Rated Current</td><td>200 A</td></tr><tr><td>Rated short time current</td><td>20 kA / 3s</td></tr><tr><td>Rated short circuit breaking current</td><td>20 kA</td></tr><tr><td>Rated short circuit making current</td><td>50 kA</td></tr><tr><td></td><td>Electrical and mechanical endurance class</td><td>E2 / M1</td></tr></table></div>	Component	Parameter	Value			mechanism - IP 3X for the cable connection covers	Load Break Switch	Rated Current	630 A	Rated load breaking capacity	630 A	Rated short time current	20 kA / 3s	Rated breaking capacity – cable charging	110 A	Rated earth fault breaking current	200 A	Rated short circuit making current	50 kA <sub>ca</sub>		Electrical and mechanical endurance class	E3 / M1	Earthing Switch / Disconnecter	Rated Making Current	50 kAp	Rated short time current	20 kA / 3s	Electrical and mechanical endurance class	E2 /M0	Vacuum Circuit Breaker	Rated Current	200 A	Rated short time current	20 kA / 3s	Rated short circuit breaking current	20 kA	Rated short circuit making current	50 kA		Electrical and mechanical endurance class	E2 / M1	<p>1. The step-down transformers in all new package substations to be supplied under this Project shall be dry type as indicated in specification AP-005-2.</p> <p>2.In the specification # AP – 005-1 the SF6 insulated metal enclosed RMU has been specified which means insulation medium of the RMU tank shall be SF6. The 11 kV circuit breaker shall be vacuum type as per the specification. However SF6 type circuit breaker is also acceptable subject to review of the specifications by FENAKA.</p>
Component	Parameter	Value																																										
		mechanism - IP 3X for the cable connection covers																																										
Load Break Switch	Rated Current	630 A																																										
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	Volume II - Part 1 AP-005-2 3.5 Ingress Protection Rating - P83	<p>The protection class of Transformer is IP00 in clause 3.5, it that a typo?</p> <div><p><b>3.5 Ingress Protection Rating</b></p><p>The transformer shall be of <b>IP00</b> protection class and will be installed in the transformer compartment of compact substation having IP2X protection class</p></div>	<p>The dry type transformer shall be placed in package substation enclosure as indicated in Specification # AP - 005.</p>																																									

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Appendix 10 - 100M INDICATION AND EXTENSION SCHEDULE														
Design, construction and testing shall comply with the following specifications:														
Asset No.	Asset Name	CIVIL No.	Location	Router Routing	Uplink Routing 100 Port 100	Uplink Routing 100 Port 100	Scope of Extension					New PV Feeder to be constructed MCC Feeds	Qty	Day
							Uplink Routing 100 Port 100	New 100 Port 100	New 100 Port 100	New MCCB Feeds	New MCCB Feeds			
001	Harbour	001-100	Power House	Yes	ACB 1000 A	--	MCCB 1000 A	ACB 1000 A	--	ACB 1000 A	--	PV 100 Feeder (Connection to MCCB) PV 100 Feeder (Connection to MCCB) PV 100 Feeder (Connection to MCCB) PV 100 Feeder (Connection to MCCB)	Yes	1
002	Harbour	002-100	Power House	Yes	ACB 1000 A	--	--	ACB 1000 A	--	ACB 1000 A	--	--	Yes	1
003	Harbour	003-100	Power House	Yes	ACB 1000 A	ACB 1000 A	MCCB 1000 A	ACB 1000 A	--	ACB 1000 A	--	PV 100 Feeder (Connection to MCCB) PV 100 Feeder (Connection to MCCB) PV 100 Feeder (Connection to MCCB) PV 100 Feeder (Connection to MCCB)	Yes	1
004	Harbour	004-100	Power House	Yes	ACB 1000 A	ACB 1000 A	MCCB 1000 A	ACB 1000 A	--	ACB 1000 A	--	MCCB 1000 A PV 100 Feeder (Connection to MCCB)	Yes	1
005	Harbour	005-100	Power House	Yes	--	--	MCCB 1000 A	ACB 1000 A	ACB 1000 A	ACB 1000 A	--	MCCB 1000 A PV 100 Feeder (Connection to MCCB)	Yes	1
006	Harbour	006-100	Power House	Yes	--	--	--	ACB 1000 A	ACB 1000 A	ACB 1000 A	--	MCCB 1000 A PV 100 Feeder (Connection to MCCB)	Yes	1
007	Harbour	007-100	Power House	Yes	--	--	--	ACB 1000 A	ACB 1000 A	ACB 1000 A	--	MCCB 1000 A PV 100 Feeder (Connection to MCCB)	Yes	1
008	Harbour	008-100	Power House	Yes	--	--	--	ACB 1000 A	ACB 1000 A	ACB 1000 A	--	MCCB 1000 A PV 100 Feeder (Connection to MCCB)	Yes	1
009	Harbour	009-100	Power House	Yes	--	--	--	ACB 1000 A	ACB 1000 A	ACB 1000 A	--	MCCB 1000 A PV 100 Feeder (Connection to MCCB)	Yes	1
010	Harbour	010-100	Power House	Yes	--	--	--	ACB 1000 A	ACB 1000 A	ACB 1000 A	--	MCCB 1000 A PV 100 Feeder (Connection to MCCB)	Yes	1
011	Harbour	011-100	Power House	Yes	--	--	--	ACB 1000 A	ACB 1000 A	ACB 1000 A	--	MCCB 1000 A PV 100 Feeder (Connection to MCCB)	Yes	1
012	Harbour	012-100	Power House	Yes	--	--	--	ACB 1000 A	ACB 1000 A	ACB 1000 A	--	MCCB 1000 A PV 100 Feeder (Connection to MCCB)	Yes	1
013	Harbour	013-100	Power House	Yes	--	--	MCCB 1000 A (Provision for 1000A)	ACB 1000 A	ACB 1000 A	ACB 1000 A	--	MCCB 1000 A PV 100 Feeder (Connection to MCCB)	Yes	1
014	Harbour	014-100	Power House	Yes	--	--	MCCB 1000 A	ACB 1000 A	ACB 1000 A	ACB 1000 A	--	MCCB 1000 A PV 100 Feeder (Connection to MCCB)	Yes	1
015	Harbour	015-100	Power House	Yes	--	--	MCCB 1000 A	ACB 1000 A	ACB 1000 A	ACB 1000 A	--	MCCB 1000 A PV 100 Feeder (Connection to MCCB)	Yes	1

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Bidders may note that BOQs in Section 4, Volume I refers to the schedules. Therefore if there is any discrepancy with respect to ratings or quantities between information provided in Single Line Diagrams, maps and Schedules the info provided in schedules shall be applicable. Accordingly BESS panel rating for E01-ALIFUSHI Island shall be 3200 A.

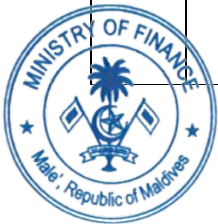
The Transformer capacity in K03 VEYVAH Island is only 400kVA, we believe that the 8000A busbar for LV cabinet is unnecessary.  
And there are similar situations for other islands, so is it implemented according to the Design Drawings (8000A busbar) or is it designed by the bidders?

<b>ASSURE</b> Accelerating Sustainable System Development using Renewable Energy	
Proposed Electricity Network Modifications for Integrating Renewable Energy	
<b>K03 VEYVAH ISLAND</b>	
DRAWING NO :	K03 – AS – GR1
REVISION NO :	02
DATE :	JUNE 2023
DESIGN :	PMU
DRAWING :	PMU
<b>KEY RATINGS</b>	
<b>LVDB - EXTENSION</b>	
Busbar :	50 Hz, 415 V, 8000 A, 65 kA
TF PANEL 1 :	MCCB – 800 A (Motorized)
BESS PANEL :	ACB – 1000 A
MCCB PANELS :	as per Schedules
<b>BESS : 500 kWh / 500 kW</b>	
<b>RMU - NEW</b>	
12 kV 2-WAY RMU LBS 630 A, VCB 200 A, with ES	
<b>STEP-UP T/F</b>	
0.415/11 kV - 1 x 400 KVA Vector gr : YNd1	
<b>PSS, LV Dist. Boxes AND CABLES:</b> As per Schedules	

(a) It should be noted that 400 kVA step-up transformer and RMU relates to the arrangement to facilitate connection of 250 kWp FPV to the LVDB. It should not be the deciding criteria to determine bus rating of the LVDB as there are several other existing outgoing LV feeders directly connected to the LVDB via MCCB panel and power supply from DGs and BESS are also connected to the same bus.

(b) The bus rating of 8000A has been specified for LVDB extensions in all Assure Islands in accordance with the standardised specification used by FENAKA for LVDB. However, the point raised by the bidder that it would be possible to reduce the LVDB bus rating for some of the Islands is acknowledged, particularly for two small Islands with low peak power demands; K1- Raiymandhoo Island and K3- Veyvah.

(c) The contractor may propose suitable alternate bus ratings for LVDBs in these two Islands (K1- Raiymandhoo Island and K3- Veyvah) **during the design stage** in consultation with FENAKA, upon evaluation of factors such as existing peak demand, demand growth for next 15 years, connected DG and BESS capacities, short circuit rating requirements, temperature rise and safety factors.





6	Volume II - Part 1 AP - 001 5.2.6 Protection Relays - P6	<p>In addition to Overcurrent and Earth fault protection, is it necessary to provide others relay protections?</p> <div><p><b>5.2.6 Protection Relays</b></p><ul style="list-style-type: none"><li>i) The programmable type self-powered numerical protection relays, conforming to IEC 60255, shall be used.</li><li>ii) It shall be possible to select the required type of <b>overcurrent and earth fault protection</b> of IDMT characteristics. Appropriate settings shall be determined during the design stage as per specific requirements in respective Islands and submitted for approval of the Employer</li><li>iii) Necessary software package and the handheld programming unit (1 for each Island) shall be supplied with the numerical protection relays to set the protection relays as required.</li><li>iv) The numerical relay units shall be suitable for use in the tropical climatic conditions as given under the Clause 3.0 Service Conditions.</li><li>v) Relays should have memory and recording Features to provide event log, trip log and oscillographic disturbance records. Relays shall be fixed on the front door with trip indicators and alarms.</li><li>vi) The numerical relay unit shall have provision for incorporating SCADA system.</li><li>vii) The relays shall be standard models from the following manufactures or equivalent ; ABB, Siemens, Schneider, Terasaki or other internationally reputed manufacturer approved by FENAKA.</li></ul></div>	<p>The clause 5.2.6 in specification # AP-001 provides only the general technical requirements for protection relays. The design of protection and control schemes for respective panel types shall be in the scope of the Contractor under design and engineering phase. Upon completion of design and engineering stage, the Contractor shall provide proposed design details, schedules, technical particulars, specifications, drawings and maps for approval of FENAKA. Please refer to clause 1.2.4 of Section 6, Volume I for detailed scope to be covered under design and engineering.</p>																																																																															
7	Volume II - Part 3 SCHEDULE S6 - P16	<p>1、 What does CCT mean?</p> <p>2、 Is the "6/ph" means 6 cables per A,B and C phase and no N phase cable? "6/ph+4/N" means 6 cables per A,B and C phase and 4 cables for N phase?</p> <table><tr><th rowspan="2">Cable</th><th rowspan="2"># Cables per Phase (For Single Core Cables)</th><th rowspan="2">Unit</th><th rowspan="2">Qty</th><th>Cable Lugs (Tinned copper)</th><th>HS End Caps</th><th>LV Cable Joints</th><th rowspan="2">Remarks</th></tr><tr><th>Nos</th><th>Set</th><th>Set</th></tr><tr><td>0.6/1 kV Cu/XLPE/PVC 10x 630 sqmm, Armoured</td><td>6/ph</td><td>m</td><td>900</td><td>72</td><td>--</td><td>--</td><td>Provisional Circuit Length - 2 x 25 m</td></tr><tr><td>0.6/1 kV Cu/XLPE/PVC 10x 630 sqmm, Armoured</td><td>6/ph + 4/N</td><td>m</td><td>550</td><td>44</td><td>--</td><td>--</td><td>Provisional Length per CCT - 1 x 25 m</td></tr><tr><td>0.6/1 kV Cu/XLPE/PVC 10x 630 sqmm, Armoured</td><td>2 / ph + 2/N</td><td>m</td><td>80</td><td>8</td><td>8</td><td>--</td><td rowspan="2">Circuit lengths as shown in diagrams. Cable sizes shown in drawings have been standardized to minimize size variations.</td></tr><tr><td>0.6/1 kV Cu/XLPE/PVC 40x 400 sqmm, Armoured</td><td></td><td>m</td><td>25</td><td>4</td><td>1</td><td>--</td></tr><tr><td>0.6/1 kV Cu/XLPE/PVC 40x 300 sqmm, Armoured</td><td>2 cables / CCT</td><td>m</td><td>50</td><td>8</td><td>2</td><td>--</td><td rowspan="4">PV end of each cable to be installed with heat shrinkable end cap at PV side. Other end connected to PSS or Dist. Box</td></tr><tr><td>0.6/1 kV Cu/XLPE/PVC 40x 185sqmm, Armoured</td><td></td><td>m</td><td>450</td><td>12</td><td>3</td><td>--</td></tr><tr><td>0.6/1 kV Cu/XLPE/PVC 40x 120 sqmm, Armoured</td><td></td><td>m</td><td>125</td><td>4</td><td>1</td><td>--</td></tr><tr><td>0.6/1 kV Cu/XLPE/PVC 40x 95 sqmm, Armoured</td><td></td><td>m</td><td>105</td><td>8</td><td>2</td><td>--</td></tr><tr><td>0.6/1 kV Cu/XLPE/PVC 40x 50 sqmm, Armoured</td><td></td><td>m</td><td>195</td><td>16</td><td>4</td><td>--</td><td></td></tr></table>	Cable	# Cables per Phase (For Single Core Cables)	Unit	Qty	Cable Lugs (Tinned copper)	HS End Caps	LV Cable Joints	Remarks	Nos	Set	Set	0.6/1 kV Cu/XLPE/PVC 10x 630 sqmm, Armoured	6/ph	m	900	72	--	--	Provisional Circuit Length - 2 x 25 m	0.6/1 kV Cu/XLPE/PVC 10x 630 sqmm, Armoured	6/ph + 4/N	m	550	44	--	--	Provisional Length per CCT - 1 x 25 m	0.6/1 kV Cu/XLPE/PVC 10x 630 sqmm, Armoured	2 / ph + 2/N	m	80	8	8	--	Circuit lengths as shown in diagrams. Cable sizes shown in drawings have been standardized to minimize size variations.	0.6/1 kV Cu/XLPE/PVC 40x 400 sqmm, Armoured		m	25	4	1	--	0.6/1 kV Cu/XLPE/PVC 40x 300 sqmm, Armoured	2 cables / CCT	m	50	8	2	--	PV end of each cable to be installed with heat shrinkable end cap at PV side. Other end connected to PSS or Dist. Box	0.6/1 kV Cu/XLPE/PVC 40x 185sqmm, Armoured		m	450	12	3	--	0.6/1 kV Cu/XLPE/PVC 40x 120 sqmm, Armoured		m	125	4	1	--	0.6/1 kV Cu/XLPE/PVC 40x 95 sqmm, Armoured		m	105	8	2	--	0.6/1 kV Cu/XLPE/PVC 40x 50 sqmm, Armoured		m	195	16	4	--		<p>1. CCT - circuit. For example; 2 cables / CCT means 2 Nos four core cables per circuit.</p> <p>2. xx/ph + xx/N is applicable for number of single core cables to be used. For example 6/ph + 4/N means 6 single core cables per each phase and 4 single core cables for neutral.</p>
Cable	# Cables per Phase (For Single Core Cables)	Unit					Qty	Cable Lugs (Tinned copper)	HS End Caps		LV Cable Joints	Remarks																																																																						
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0.6/1 kV Cu/XLPE/PVC 40x 95 sqmm, Armoured		m	105	8	2	--																																																																												
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Volume I  
Plant 1S2E Section 6 \_  
ASSURE Microgrid  
Fig 6.1 Island Maps with  
key sites  
A04 - Dhidhdhoo - P6-09

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Volume I  
Plant 1S2E Section 6 \_  
ASSURE Microgrid  
Fig 6.1 Island Maps with  
key sites  
B01-Hanimaadhoo - P6-  
09

Volume II - Part 3  
SCHEDULE S4 - P9

[illegible]

SCHEDULE 54 - SCHEDULE OF PACKAGING					
Design, construction and testing shall comply with technical specifications.					
Island No	Island Name	PSS No	PSS Configuration		
			11 kV RMU	11/0.4 kV Dry Type T/F	LV Dist. Panel
A04	Dhidhidho	A04-PSS-1	2x 630 A, 1BS + 1x 200A, VCB	630 kVA	Incomer - MCCB : 1x 1250 A Outgoing - MCCB : 2x 800 A, 3 x 400 A, 3 x 250 A Busbar : 1250 A
		A04-PSS-2	2x 630 A, 1BS + 1x 200A, VCB	630 kVA	Incomer - MCCB : 1x 1250 A Outgoing - MCCB : 2x 630 A, 3 x 400 A, 3 x 250 A Busbar : 1250 A
		A04-PSS-3	2x 630 A, 1BS + 1x 200A, VCB	1500 kVA	Incomer - ACB : 1x 2000 A Outgoing - MCCB : 1x 1250 A, 2 x 400 A, 2x 250 A, 2 x 160 A Busbar : 2000 A
SUB TOTAL FOR A04 - DHIDHIDHO ISLAND					
B01	Hamimaadhoo	B01-PSS-1	2x 630 A, 1BS + 1x 200A, VCB	1250 kVA	Incomer - MCCB : 3x 1600 A Outgoing - MCCB : 2x 1000 A, 3 x 400 A, 3 x 250 A Busbar : 1600 A
		B01-PSS-2	2x 630 A, 1BS + 1x 200A, VCB	630 kVA	Incomer - MCCB : 1x 1250 A Outgoing - MCCB : 2x 800 A, 2 x 400 A, 4 x 250 A Busbar : 1250 A
SUB TOTAL FOR B01 - HAMIMAADHO ISLAND					

[illegible]

10	Volume I Plant 1S2E Section 6 _ ASSURE Microgrid Fig 6.1 Island Maps with key sites D02-Manadhoo - P6-10	The Google map is not clear, please provide KML file.	Please refer to PDF File Attached. Bidders shall note that maps provided are indicative and updated locations for equipment and cable routes shall be determined following the survey as indicated in clause 1.2.3 of Section 6, Volume I.
11	Volume I Plant 1S2E Section 6 _ ASSURE Microgrid Fig 6.1 Island Maps with key sites D03- Velidhoo - P6-11	The Google map is not clear, please provide KML file.	Please refer to PDF File Attached. Bidders shall note that maps provided are indicative and updated locations for equipment and cable routes shall be determined following the survey as indicated in clause 1.2.3 of Section 6, Volume I.
12	Volume I Plant 1S2E Section 6 _ ASSURE Microgrid Fig 6.1 Island Maps with key sites D04-Holhudhoo - P6-11	1、 There are New Package Substation and MV Cable route on the Google map, but we can not find them in the VOLUME II - PART 3 ASSURE PROJECT Microgrid Modifications - EQUIPMENT SCHEDULES. Which one shall we follow? 2、 There are 2 Free Field 187.5kWp PV Plants on the Google map, but we can not find it in the VOLUME II - PART 2 ASSURE PROJECT Microgrid Modifications - DESIGN DIAGRAMS, please classify the works of the Microgrid. 3、 The LV Distribution Box quantity is different with it in the VOLUME II - PART 2 ASSURE PROJECT Microgrid Modifications - DESIGN DIAGRAMS and VOLUME II - PART 3 ASSURE PROJECT Microgrid Modifications - EQUIPMENT SCHEDULES, which one shall we follow?	Please refer to PDF File Attached. Bidders shall note that maps provided are indicative and updated locations for equipment and cable routes shall be determined following the survey as indicated in clause 1.2.3 of Section 6, Volume I.
13	Volume I Plant 1S2E Section 6 _ ASSURE Microgrid Fig 6.1 Island Maps with key sites E01-ALIFUSHI - P6-12	LV Distribution Box and LV Cable routes from PV Plant to LV Distribution Box not been shown on the Google map, please provide the KML file.	Please refer to PDF File Attached. Bidders shall note that maps provided are indicative and updated locations for equipment and cable routes shall be determined following the survey as indicated in clause 1.2.3 of Section 6, Volume I.
14	Volume I Plant 1S2E Section 6 _ ASSURE Microgrid Fig 6.1 Island Maps with key sites E02-Hulhudhuffaar - P6-12	1、 There are New Package Substation and MV Cable route in the Google map, but we can not find them in the VOLUME II - PART 3 ASSURE PROJECT Microgrid Modifications - EQUIPMENT SCHEDULES. Which one shall we follow? 2、 New LV Distribution Box and LV Cable route from PV Plant to LV Distribution Box not been shown on the Google map, please provide the KML file.	Please refer to PDF File Attached. Bidders shall note that maps provided are indicative and updated locations for equipment and cable routes shall be determined following the survey as indicated in clause 1.2.3 of Section 6, Volume I.





15	Volume I Plant 1S2E Section 6 – ASSURE Microgrid Fig 6.1 Island Maps with key sites F01-Thulhaadhoo - P6- 13	1、 New 630KVA Package Substation and MV Cable route not been shown on the Google map, MV cable length only refer to the length on the Equipement Schedule? Please provide the KML file . 2、 We can noly find the F1-X2 LV Distribution Box in the Google map, others LV Distribution Boxes and LV Cable route from PV Plant to LV Distribution Box and Transformer not been shown , please provide the KML file.	Please refer to PDF File Attached. Bidders shall note that maps provided are indicative and updated locations for equipment and cable routes shall be determined following the survey as indicated in clause 1.2.3 of Section 6, Volume I.
16	Volume I Plant 1S2E Section 6 – ASSURE Microgrid Fig 6.1 Island Maps with key sites F03-Dharavandhoo - P6- 13	1、 New LV Distribution Boxes and LV Cable route not been shown in the Google map , please provide the KML file. 2、 MV Cable route between the 2 New Package Substations not been shown on the Google map , please provide the KML file.	Please refer to PDF File Attached. Bidders shall note that maps provided are indicative and updated locations for equipment and cable routes shall be determined following the survey as indicated in clause 1.2.3 of Section 6, Volume I.
17	Volume I Plant 1S2E Section 6 – ASSURE Microgrid Fig 6.1 Island Maps with key sites K01-RAIYMANDHOO - P6-14	1、 New RMU and New Package Substation not been shown on the Google map , please provide the KML file.	The RMU will be installed inside powerhouse boundary. Bidders shall note that maps provided are indicative and updated locations for equipment and cable routes shall be determined following the survey as indicated in clause 1.2.3 of Section 6, Volume I.
18	Volume I Plant 1S2E Section 6 – ASSURE Microgrid Fig 6.1 Island Maps with key sites K02-MULAH - P6-14	1、 The MV Cable route will cross the forest as shown on the Google map, but the requirement about the cable laying is "no vegetation will be cleared or trees removed for cable laying", so what is the cable laying method?	Where required necessary clearances will be processed by the Island Council.
19	Volume I Plant 1S2E Section 6 – ASSURE Microgrid Fig 6.1 Island Maps with key sites K03-VEYVAH - P6-15	1、 The new RMU location not been shown on the Google map, please provide the KML file. 2、 There is MV Cable route and LV Cable route (from new Package Substaiton to LV Distribution Box) in the Google map but they not been shown in the VOLUME II - PART 3 ASSURE PROJECT Microgrid Modifications - EQUIPMENT SCHEDULES. which one shall we follow? 3、 There are LV Cable routs (New Transformer to LV Cabinet) in the Google map, but the LV Cable not been shown in the VOLUME II - PART 3 ASSURE PROJECT Microgrid Modifications - EQUIPMENT SCHEDULES. Which one shall we follow? 4、 There is MV Cable route (RMU to Step-down Transformer) in the VOLUME II - PART 2 ASSURE PROJECT Microgrid Modifications - DESIGN DIAGRAMS, but the MV Cable not been shown in the Google map. Which one shall we follow?	Please refer to Volume II Part II. Bidders shall note that maps provided are indicative and updated locations for equipment and cable routes shall be determined following the survey as indicated in clause 1.2.3 of Section 6, Volume I.



20	Volume I Plant 1S2E Section 6 _ ASSURE Microgrid Fig 6.1 Island Maps with key sites K05-MULI - P6-15	1、 The New RMU location not been shown on the Google map, please provide the KML file.	Proposed location, GPS coordinates: 2°55'03.02" N 73°34'48.72" E Bidders shall note that maps provided are indicative and updated locations for equipment and cable routes shall be determined following the survey as indicated in clause 1.2.3 of Section 6, Volume I.
21	Volume I Plant 1S2E Section 6 _ ASSURE Microgrid Fig 6.1 Island Maps with key sites L02-NILANDHOO - P6-16	1、 The New Package Substation location not been shown in the Google map, please provide the KML file.	Proposed location, GPS coordinates: 3°03'37.21" N 72°53'14.16" E Bidders shall note that maps provided are indicative and updated locations for equipment and cable routes shall be determined following the survey as indicated in clause 1.2.3 of Section 6, Volume I.
22	Volume I Plant 1S2E Section 6 _ ASSURE Microgrid Fig 6.1 Island Maps with key sites N02-THIMARAFUSHI - P6-16	1、 The Google map is not clear, please provide KML file.	Please refer to PDF File Attached. Bidders shall note that maps provided are indicative and updated locations for equipment and cable routes shall be determined following the survey as indicated in clause 1.2.3 of Section 6, Volume I.
23	Volume I Plant 1S2E Section 6 _ ASSURE Microgrid Fig 6.1 Island Maps with key sites N04-Guraidhoo - P6-17	1、 The Ring line is required for 2 New Substations as shown in the Google map, but the MV Cables quantity shown in the VOLUME II - PART 3 ASSURE PROJECT Microgrid Modifications - EQUIPMENT SCHEDULES is not enough. 2、 There are no New LV Distribution Box locations in the Google map, the cable routes length shall refer to the VOLUME II - PART 3 ASSURE PROJECT Microgrid Modifications - EQUIPMENT SCHEDULES?	1. As indicated in Schedule S7, 11 kV cable quantities provided are provisional allocations. Updated quantities shall be determined following survey and updated schedules shall be submitted based on survey information. Please refer to clauses 1.2.3 and 1.2.4 in Section 6, Volume I. 2. There are no LV Distribution boxes for this island. LV cables are between PV Plant and LV side of Package substation.



24	Volume I Plant 1S2E Section 6 _ ASSURE Microgrid Fig 6.1 Island Maps with key sites P04-MAAMENDHOO - P6-17	1、 The PowerHouse location not been shown on the Google map, please provide the KML file.	Powerhouse location GPS coordinates: 0°42'44.53" N 73°26'18.18" E
25	Volume I Plant 1S2E Section 6 _ ASSURE Microgrid Fig 6.1 Island Maps with key sites Q04- FARESMAATHODA - P6-18	1、 The Proposed Package Substation location not been shown on the Google map, please provide the KML file.	Please refer to PDF File Attached. Bidders shall note that maps provided are indicative and updated locations for equipment and cable routes shall be determined following the survey as indicated in clause 1.2.3 of Section 6, Volume I.
26	Volume I Plant 1S2E Section 6 _ ASSURE Microgrid Fig 6.1 Island Maps with key sites Q05-GADHDHOO - P6- 18	1、 The new RMU location not been shown on the Google map, please provide the KML file. 2、 The PowerHouse is under construction, please provide the completion date and drawings of it.	1. The RMU will be installed inside powerhouse boundary. 2. Expected completion: Feb 2025, powerhouse drawings not required at this stage.



27	Common Questions for islands	<p>1、 If the Communicaton Cable should be laid with the MV Cable?</p> <p>3、 There are different requirements for the joint pits in different islands as we know, please provide the pit sizes for different islands, or it could be 1.5*1*0.8m as our practice experience?</p> <p>4、 What is the requirements of spare parts quanity for each island?</p> <p>5、 If Package Substation capacity in Google map is different with it in the Design Diagrams, which one shall we follow?</p> <p>6、 If the Communication Cable is neccessary for Package Substations and MV Cabinets? There is no Communication Cable in the Equipment Schedules.</p> <p>7、 Whether the PowerHouse expansion is within the contractor's work scope when the installation space is not suitable for new MV Cabinet installation?</p> <p>8、 For communication of outdoor RMU and Package Substaitons, the contractor just reserve communication interfaces for outdoor RMU and Package Substaitons or need to connect them to SCADA system located at the powerhouse?</p> <p>9、 We think the MV and LV cable is not enough after measurement according to the Goole map provided in the Employer's Requirements, shall we follow the cable quantity in the Equipment Schedules?</p>	<p>1. Communication cable can be laid be with MV cable. Trench design shall be submitted for prior approval.</p> <p>3. 1.5x1.0.8m joint pit is generally acceptable. Joint pit design shall be submitted for approval during design stage.</p> <p>4. The mandatory spare parts as specified in the technical specifications Volume II - Part 1) for relevant equipment shall be supplied. Please refer to clause 1.5 of Section 6, Volume I and Volume II-Part I Technical Specifications).</p> <p>5. Please refer to response provided in item Query No.4.</p> <p>6. MV cable is for communication and control purpose of PV plants and RMUs.</p> <p>7. Yes, Please refer to BOQ Item C 5.0 in Schedule 4 for each Lot provided in Section 4.</p> <p>8. SCADA connection to RMUs and PV/FPV sites will be done by third party. The contractor shall lay the communication cables up to the powerhouse from PSS and PV/FPV sites.</p> <p>9. Bidders to follow the cable and equipment quantities in Equipment Schedules to submit prices as per BOQ. The winning Contractor will do a detailed technical survey to update the quantities.</p>
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