ADDENDUM No. 4

Reply to Queries from bidders

Query No. 1 : **With regards to the work methodology, could information about the load carrying capacity of the roof beams and slabs be provided and means of access to the roof be indicated.**

Answer : Carrying capacity of the roof slab is 0.75kN/m^2.

Bidder is advised to visit the site to check means of access to roof and any other information required as mentioned in Section 9.1 of the Instruction to Bidders. If Bidder considers that the means of access to roof are not adequate/safe, they should cater in their offer for provision of necessary access for the Works.

Query No. 2 : **Our PV Design Engineer, working for our supplier in Germany, will design the PV plant. Please confirm whether he needs to be registered with CIDB Mauritius to participate on the project.**

Answer : If it is a firm, he must be registered with CIDB.
If it is an individual, he must have been practicing legally as a PV Design Engineer in their Country.

Query No. 3 : **In the pre-bid meeting, we were informed that only buildings 2 and 3 would be available for the installation of the PV plant. This reduces the usable surface area from initially 6,455 m^2 to 5,125 m^2. The new available area is restraining the minimum required capacity of 500 kWp. Please clarify.**

Answer : Buildings and roof areas available are shown in drawing 16-113-005-L1 P3.

Query No. 4 : **As per your engineers' recommendation, what is the roof loading capacity of the building where the PV plant is planned?**

Answer : Refer to Query and answer **No. 1**

Query No. 5 : **In Section 1, number 6 'Qualification of the Bidder', part (g) regarding experience of the bidder's design engineer whereby it says that the design engineer must have 15 years of experience post registration by a registered council and 5 years of experience in PV sector with two projects of minimum capacity of 300kWp.**

As explained during our meeting, it is very unusual to find someone with that much of experience in the photovoltaic sector. The mandatory 5 years of experience in PV by an individual engineer is definitely achievable, however, can the 15 years be met under a collective team experience? Also, is it 300kWp per project or 300kWp cumulative?

Answer : Please refer to amended page 11R of the Instruction to Bidders – Clause 6.1 (g).

Query No. 6 : **Section 4 Technical requirements – Kindly provide the admissible loads on the roof**

Answer : Refer to Query and answer **No. 1**.

Query No. 7 : **Section 4 Technical requirements – The introduction in page 73 mention clearly the use of approximately 6400m^2 area for PV installation to get 500kWp. The exclusion of building 01 (1330m2 area) will impact the chance of getting 500kWp from the remaining area (2225m^2+2900m^2 building 02 and 03 only). Please confirm if building 01 is to be excluded, if yes, does the target capacity remains the same?**

Answer : Refer to Query and answer **No. 3**

Query No. 8 : **Please confirm that water-proofing after installation is not our responsibility and will be done by others after our installation.**

Answer : The waterproofing works have been carried out by Clima Waterproofing Co Ltd in May 2018 and have a guarantee of 10 years. The Contractor for the Photovoltaic Solar Farm shall take all necessary precautions to prevent damages to the waterproofing membrane during installation of the panels. All damages to the membrane will have to be made good by the PV Contractor. Bill Item A.15 allows for the protection of the existing waterproofing and any reinstatement if damaged, and for liaison with the waterproofing contractor, Clima Waterproofing Co Ltd.

Phone Number: +230 636 0517
Email Address: climawaterproofing@gmail.com

The waterproofing membrane shall be reinstated to maintain the 10-year warranty.

Query No. 9 : **Please confirm that we are allowed to drill into the concrete roof slab to fix support structure.**

Answer : Yes, on the condition that the Bidder takes full responsibility of the roof waterproofing and gives a guarantee against leakage for a minimum of 10 years from completion of the Works.

Query No. 10 : **Section 6.1. (g) from Section 1 states that Design Engineer of the Bidder shall have a minimum of 15 years' experience from date of registration from a registered institution. Our Design Engineer currently has 14.5 years' experience from date of registration. Aside from that, the Engineer meets all the necessary requirements. Is it acceptable?**

Answer : Refer to Query and answer **No. 5**.

Query No. 11 **:** **Qualification requirements: "The Bidder must demonstrate that their Design Engineer shall have a minimum of 15 years' experience from date of registration from a registered institution, i.e., IEE or CPRE or equivalent and having at least five years' experience in design and supervision of PV panels and has successfully carried out design of two similar solar farm projects with minimum capacity of 300kWp."**

Bidder is kindly requesting the possibility to submit the bid with a Design Engineer:

- Complying with 10 years experience in design and supervision of PV panels and has successfully carried out design of two similar solar farm projects with minimum capacity of 300kWp,
- That will be registered to an institution ie IEE or CPRE registration as soon as bidder is qualified and selected for the Work.

Answer **:** Refer to Query and answer **No. 5**.

Query No. 12 **:** **Qualification requirements: "The Bidder must demonstrate that their Design Engineer shall have a minimum of 15 years' experience from date of registration from a registered institution, i.e., IEE or CPRE or equivalent and having at least five years' experience in design and supervision of PV panels and has successfully carried out design of two similar solar farm projects with minimum capacity of 300kWp."**

Page 99: "In addition, the Bidder shall provide a Design Engineer with 15 years post registration experience in design and supervision of similar works. The Bidder should demonstrate that the Designer has successfully carried out design and implementation of two (2) similar Photovoltaic Solar Farm projects with minimum capacity of 300kWp over the past five (5) years."

Kindly note that memberships of professional associations and registration with a specific professional body are not common practice in France. The Master's Degree of an Engineer obtained from a High School of Engineers ("Grande Ecole") in addition to the Engineer's large experience in significant assignments as employee of a well renown company is a very good guarantee.

However, please note that CRPE has been contacted and informed us that registration would be a mere formality. The extended Curriculum Vitae of our Design Engineer shall be shared, and an interview shall be set up in Mauritius to perform this registration.

We are therefore requesting the possibility to submit the bid with our Design Engineer:

- Complying with a minimum of 15 years' experience as from his graduation,
- Complying with 10 years experience in design and supervision of PV panels and has successfully carried out design of two similar solar farm projects with minimum capacity of 300kWp,
- Who will be registered at CRPE, as soon as we are qualified and selected for the Work.

Answer ***:*** Refer to Query and answer **No. 5**.

Agricultural Marketing Board, Design, Build, Operate And Maintain Photovoltaic Solar Farm at Moka

CONTRACT SUM ANALYSIS

1.1R

S.N	Description	Unit	Qty	Rate	Amount/ MUR
A.	**Section A - Preliminaries and General items**				
A.1	Allow for all Contractor's Preliminaries, General items and compliance with Particular Conditions of Contract, amongst others including Bid Security, Employer's personnel, temporary works, staff and workers accommodation, security, supervision and the like as per Performance Specification.	Sum			
A.2	Allow for 10 Years Design Warranty and Undertaking as per form attached at Annex	Sum			
A.3	Allow for Performance Security to be issued by an approved local Commercial Bank for the performance of Contractor's obligations and as per the provision of the Contract.	Sum			
A.4	Allow for Insurance as per sub clause 18.2 and 18.3 of the Conditions of Contract. (NB. The Contractor shall take Insurance cover from the Employer's Insurance Company, as specified in the bidding document.	Sum			
A.5	Allow for Warranties of the system as per item 15.1 of the Performance Specification	Sum			
A.6	Design Fees for Engineers and for the submission of design detail drawings for Employer's approval	Sum			
A.7	Ditto but for Post-Contract Supervision by the Engineer	Sum			
A.8	Allow for any fees Specialist Expert (if any)	Sum			
A.9	Allow for Defects Liability period of 365 days starting from date of Taking Over Certificate (Ref Clause 11.0 of the Conditions of Contract).	Sum			
A.10	Inverters 5 years warrantee + 1 spare inverter shall be provided as per item 4.3	Year			
A.11	Allow liaising with CEB in conformity with Performance Specifications	Sum			
A.12	PV Module support structure 10 years guarantee as per item 4.2	Sum			
A.13	Allow for 3 Years Operation schedule as per item 11.2 of the Performance Specification. (Quoted price must be on Yearly Basis)	Sum			
A.14	Allow for 3 Years Maintenance schedule as per item 11.2 of the Performance Specification. (Quoted price must be on Yearly Basis)	Sum			
A.15	Allow for protecting existing waterproofing and any reinstatement if damaged, and liaise with waterproofing Contractor who has 10 year warranty thereon. Contractor Name: Clima Waterproofing Co Ltd Phone no: 636-0517 Email: climawaterproofing@gmail.com (NB: The Work shall be executed on the roof waterproofing layer of the building)	Sum			
A.16	Allow for inhouse training in operation, testing, monitoring, maintenance of the system (during construction period and during 3 Years maintenance period)	Year			
A.17	Allow for Allied and Peril Insurance Cover, starting from the Taking Over Certificate and up to three year for operational period. (Value to be assessed by the Contractor, once the System is commissioned for Insurance purposes). Insurance cover shall be taken from Employer's Insurance Company, as before specified.	Sum			
	Total Amount carried to Main Summary				

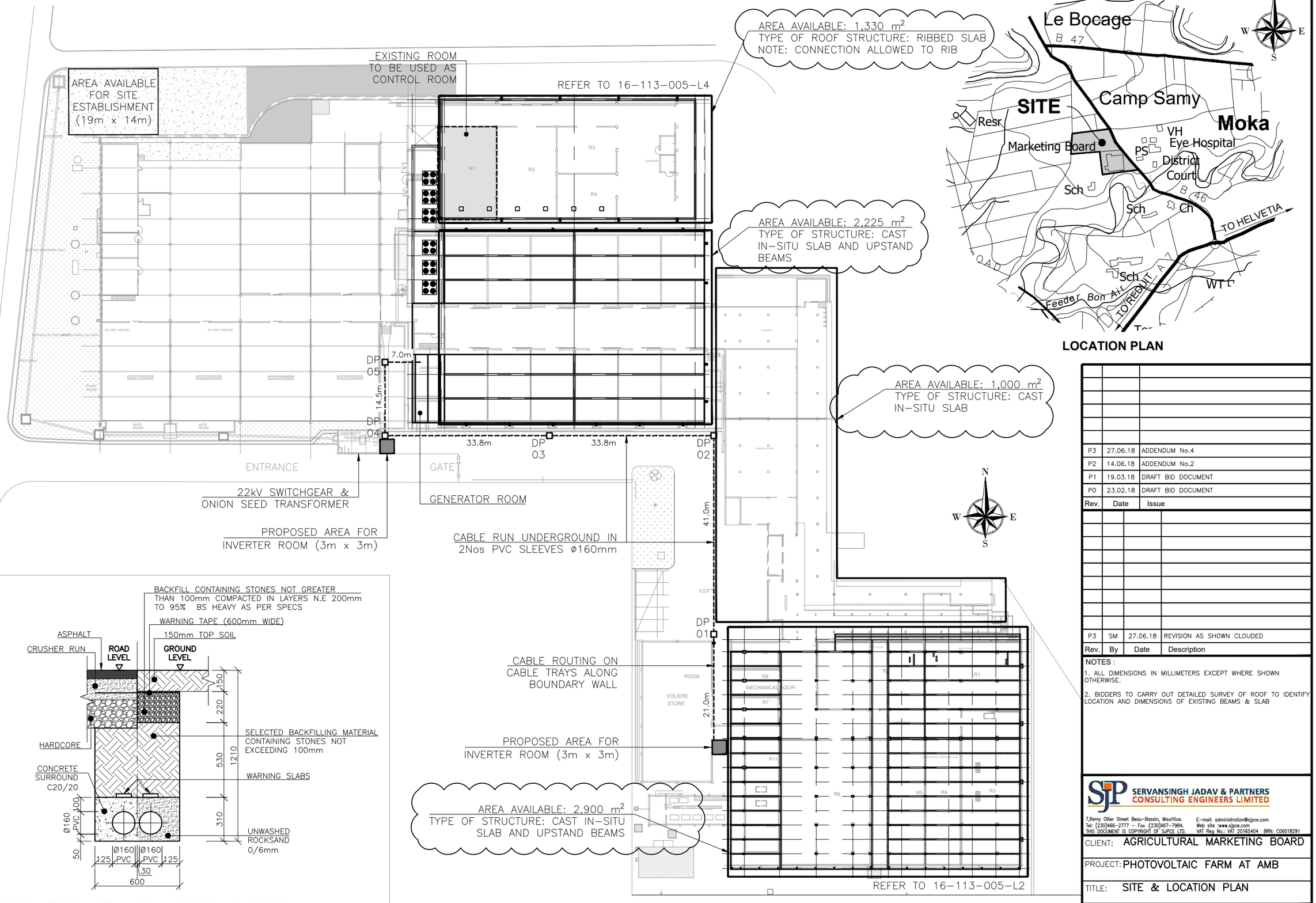
Agricultural Marketing Board, Design, Build, Operate And Maintain Photovoltaic Solar Farm at Moka

CONTRACT SUM ANALYSIS

1:2R

S.N	Description	Unit	Qty	Rate	Amount/ MUR
B.	**Photovoltaic Solar Farm** Design, Fabricate, supply, install and commissioning and operate of Photovoltaic Solar Farm in accordance with Performance Specification and Employer's Requirement. Bidder shall allow for all cost and charges accordingly and as per the provisions of the Bidding document.				
B.1	**Structural Support on existing roof**				
B.1.1	Allow for the structural work including interface work, with existing building and services, roof mounting system for PV Panels including supports, frames, rail and the like, (structural frame being mounted on existing concrete roof of Employer's warehouse)	Sum			
B.1.2	Allow for the metal structural support on existing waterproofed layer of flat concrete roof as per existing roof plan, to receive PV panels.	Sum			
B1.3	Ditto but on existing waterproofed layer of flat roof comprising of ribbed slab	Sum			
B.2	Allow for PV Modules and Accessories, all complete.	Sum			
B.3	Allow for Inverters, all complete as per Performance Specifications	Sum			
B.4	Allow for cable trays both for HV cables and LV cables up to terminals	Sum			
B.5	Allow for HV cables, if required.	Sum			
B.6	Allow for LV cables	Sum			
B.7	Allow for electrical panels, change over panel and associated works	Sum			
B.8	Allow for energy meters in accordance with the Performance Specifications	Sum			
B.9	Allow for all electrical wiring for connection of the solar system to the Employer's network (i.e. AC power to the 22kV distribution grid)	Sum			
B.10	Allow for PC-based supervisory and control system for the local control and monitoring of the PV plant.	Sum			
B.11	UPS of highly reputable make and fitted with appropriate surge protection systems and shall	Sum			
B.12	Allow for lightning protection, all complete as per the Performance Specifications	Sum			
B.13	Allow for any builders and trenching work for the whole of the system, all complete to connect the solar system to the Employer's network and to make the solar system operational and functional.	Sum			
B.14	Allow for any other cost and charges to comply with Performance Specification to meet Employer's Requirement as listed below: - Scope of Work listed at item 2.0 of Performance Specification. - Proposed Photovoltaic Solar Farm Management System	Sum			
B.15	Allow for any cost and charges required to make the System fully functional and fit for the purpose to meet the Client's approval.	Sum			
B.16	Allow builders work and services to allocated space, Employer's premises for the control equipment and the like, to Contractor's proposal and to entire satisfaction of the Employer's Representative	Sum			
B.17	Design and Build Inverter Room building as per clause 10 of the performance specification (In 2 nos) [optional]	Sum			
B.18	Allow for all equipment to be installed on CEB 22kV panels as per the Performance Specifications	Sum			
B.19	Allow for As Build drawing and operation manuals	Sum			
B.20	Allow for testing and commissioning of the system	Sum			
B.21	**Spare parts**				
B.21.1	Inverter in conformity with Performance Specifications (In 1 no)	Sum			
B.21.2	Any other spare parts to make the network to keep the system operational (NB: All spare parts shall be handed over to the Employer after the Contractor's Maintenance period of 3 years)	Sum			
	Total Amount carried to Main Summary				

Sarvesh Mootanah 27/6/2018 4:23 PM



LOCATION PLAN

TYPICAL TRENCH DETAIL FOR UNDERGROUND CABLES (2Nos. PVC PIPES)

(SCALE 1:25)

Rev.	Date	Issue
P3	27.06.18	ADDENDUM No.4
P2	14.06.18	ADDENDUM No.2
P1	19.03.18	DRAFT BID DOCUMENT
P0	23.02.18	DRAFT BID DOCUMENT

Rev.	By	Date	Description
P3	SM	27.06.18	REVISION AS SHOWN CLOUDED

NOTES :

1. ALL DIMENSIONS IN MILLIMETERS EXCEPT WHERE SHOWN OTHERWISE.
2. BIDDERS TO CARRY OUT DETAILED SURVEY OF ROOF TO IDENTIFY LOCATION AND DIMENSIONS OF EXISTING BEAMS & SLAB

SERVANSINGH JADAV & PARTNERS CONSULTING ENGINEERS LIMITED
7,Remy Ollier Street Beau-Bassin, Mauritius.
Tel: [230]466-2777 – Fax :[230]467-7984.
E-mail: administration@sjpce.com
Web site :www.sjpce.com
VAT Reg No.: VAT 20165404 BRN: C06018291

CLIENT: AGRICULTURAL MARKETING BOARD

PROJECT: PHOTOVOLTAIC FARM AT AMB

TITLE: SITE & LOCATION PLAN

Drawn	JAA	Scale	1:750
Checked	DO	Date	SEP-2017

Drawing Number: 16-113-005-L1

Rev. P3

C:\USERS\SARVESH\DESKTOP\16-113-005 - L1 - P2 - SITE & LOCATION PLAN (JF180607-2).DWG

6. Qualification of the Bidder

6.1 To be qualified for award of Contract, bidders shall:

(a) ensure that the person signing the bid on behalf of the bidding firm is duly authorized to commit the company in the procurement process.

(b) have adequate financial capacity and technical capability to undertake the Contract. This will include the updating and reassessment of information which may previously have been considered during prequalification and an assessment of bidder's proposals regarding work methods, scheduling and resourcing which shall be provided in sufficient detail to confirm the bidder's capability to complete the works in accordance with the Employer's Requirements and the time for completion and shall enter into Ten Year Design Warranty and Undertaking Agreement as per the form specified in Section 6 enclosed in the bidding document.

(c) for the case of a construction project, be duly registered with the CIDB under the grade that would allow him to perform the value of works for which he is submitting his bid in the following field(s) of specialization: In solar PV panel farm, including design, maintenance as per CIDB Act 2016 (Schedule 2016 Reference E01)

(d) have to ascertain that sub-contractors, consultants or sub-consultants proposed for executing works or assignments in the construction sector are duly registered with the CIDB in accordance with CIDB Act 2008.

(e) List of past and current projects of similar nature, i.e., solar PV Plants minimum installed capacity 50kwp and in operation in cyclone prone regions, having a value of MUR 10.00 million stating the clients' names and contact details, date of start/completion for the last Five (5) years.

(f) Two projects in respective to Solar PV plants, for a value of MUR 10.00 million that have been successfully and substantially completed within the last five (5) years.

For items (e) & (f) above the Bidder shall submit evidence of having executed the projects stated as prime contractor. The evidence should be in the form of Letters of Award and Completion Certificate.

(g) The Bidder must demonstrate that their Design Engineer for design of Photovoltaic Solar Panels shall have a minimum of 15 years' general experience in their country and having at least five years' specific experience in design and supervision of Photovoltaic Solar panels, equipment, accessories, etc and has successfully carried out design of two solar farm projects with minimum capacity of 300kWp each.

A written certificate from a Registered Professional Engineer shall be submitted by the bidders along with their bid certifying that the frame design, when fitted with the PV modules, can withstand cyclonic gusts of speed 250 km/hr and duration of 3 seconds in accordance with Basic Data for the design of buildings CP3 Chapter 5 – Part 2: Wind Loads. The bidder shall provide details of dimensions and the structure of PV array supports. The bidder shall have to ensure that the supports are able to withstand the weight of the PV system and maximum wind forces.

Manufacturer's shop drawings with specifications shall also be submitted and approved prior to order and manufacture. A Manufacturer's guarantee period of 10 years shall be provided for the PV Module support structure. The Manufacturer of PV modules support structure shall provide evidence of having a minimum three (3) years' documented experience in manufacturing PV Module support structure. Details of works undertaken in the last three (3) years shall be provided with the bid.

Note that waterproofing works is currently being carried out at the existing buildings at the Agricultural Marketing Board and due care shall be given so as not to damage in any way whatsoever the waterproofing membrane during execution of the works. The bidder shall submit, with their bid, proposal for PV Module support structure taking into consideration the existing waterproofing of the roof of the buildings.

4.3 Inverters (To be housed)

The inverters proposed shall have the following general characteristics:

- Grid-connected
- 3-phase type
- Minimum size of 50 kW and maximum size of 100 kW (AC Output Rating)
- String type inverter

The Bidder shall provide, along with his bid, the Engineering Recommendation G59/3 Generating Unit Type Test Certificate for each inverter model proposed. A Manufacturer`s warranty period of five (5) years shall be provided for the inverters. One (1) spare inverter shall be provided as part of the Contract. The inverters shall meet the following specifications:

- The sine wave output of the inverters shall be suitable for connecting and synchronising to the 415V, 3 phase AC LV voltage side of the LV/HV transformers.
- The inverter shall incorporate grid islanding protection, suitable DC/AC fuses/circuit breakers and voltage surge protection. Fuses used in the DC circuit must be DC rated.
- The inverter shall have internal protection against any sustained faults and/or lightening in DC and mains AC grid circuits.
- If the inverters are to be enclosed in cabinets, the inverter cabinets must be IP65 rated and the inverters must be compatible with the environment expected at the site.
- The Euro-ETA efficiency of the inverter shall be over 98%.
- The inverter system and all associated electrical components shall be effectively linked to the main earthing system of the electrical distribution network.

10.1 Control Room.

Control room will be located in the Employer's existing premises. The Contractor shall allow for necessary works and services in the allocated space to house the PC bases SCADA system, the communication systems, LV distribution boards and any other control equipment as per their requirement and to the entire satisfaction of the Employer's representative. The allocated space is detailed in the drawing **16-113-005-L1** (**Annex 1**).

10.2 Inverter Room.

The location and dimension of the proposed inverter room are tentatively shown in drawing **16-113-005-L1** (**Annex 1**). However, the onus remains on the Contractor to confirm location and size of proposed inverter room.

If the inverters are to be enclosed in cabinets, they shall be designed for operation with natural cooling as far as possible. If cooling by forced convection is required, at least two (2) numbers of ventilation fans each rated at 100% of the required capacity shall be provided. The ventilation fans shall be equipped with monitoring, control and alarm signals.

10.3 Site Investigations and Site Survey as Required or Specified.

Site investigations shall be carried out by the appointed Contractor immediately on award of the Contract. The Bidder will be required to carry out trial pits to locate the existing 22kV live underground network prior to confirming alignment of cables. Report shall be submitted to the Employer's Representative for review. The design of any building and infrastructure works shall be based on the data obtained from the site investigation.

10.4 Design Requirements

The Contractor shall design and detail all facilities in accordance with the relevant British Standards and the Standards referred to therein. Items outside the scope of the British Standards shall be in accordance with the latest relevant ASTM or other accepted code. The standards listed below are some that have been referred to in this Specification. The list is not exhaustive and should be regarded only as a selection of the relevant standards.

- BS 308 – Engineering drawing practice
- BS 1192 – Construction drawing practice
- BS 5950 – Structural use of Steelwork in Buildings
- BS 5930 – Site investigations
- BS 8004 – Foundations
- BS 8110 – The structural use of concrete
- BS 6399 – Loading for Buildings
- BS 8200 – Non-load bearing enclosures
- BS 8666 – Specification for Scheduling, Dimensioning, Bending and Cutting of Steel Reinforcement for Concrete
- CP 3 – Basic Data for the Design of Buildings

- Response Rates impact rebate - State system outage response time notification to repair.

11.3 Subcontractor's List

The bidder should submit a list of all subcontractors to be involved in the project.

11.4 Training

The Bidder shall be required to take all necessary measures for training of AMB personnel on the operations, troubleshooting and maintenance of the equipment installed. The following should be covered amongst others:

- General Description and features of the PV modules.
- Configuration & Operation of inverters and Plant Controller.
- Testing and Troubleshooting.
- Operation and use of monitoring software.
- Maintenance of the system.

11.5 Program of Works

The Bidder shall submit in his offer a detailed Programme of Work for the entire project. The successful bidder shall, before commencing work on site submit to the Engineer for his approval the method by which he proposes to carry out and complete the works at the site.

AGRICULTURAL MARKETING BOARD
SOLAR PHOTOVOLTAIC PANEL FARM AT AMB COMPOUND At MOKA

MAIN SUMMARY OF BID

				AMOUNT	
Item	**DESCRIPTION**			**Rs**	**Cs**
	Preliminaries and General Items	Page	1.1R		
	Photovoltaic Solar Farm	Page	1.2R		
	Allow for Contingencies (amount which will be expended at the discretion of the Employer or Employer's Representative or total amount shall be fully omitted from the Contractor)			1,000,000	
A	Sub Total				
B	***Less*** Discount offered (if any) (Discount is not applicable on Contingencies)				
C	Sub Total excluding VAT (A - B)				
D	***Add*** 15% Value Added Tax (VAT) (15% of C)				
E	**Total Amount (C + D) of Fixed Price Bid inclusive of Value Added Tax (VAT) carried to Form of Bid**				

Amount in Words (Fixed Price Bid) ……

……

……**Including Value Added Tax (VAT)**

Name of Bidder ……..……

……

……

Dated this …….. Day of …….. 20…

Signed …….

Name …….

In the Capacity of ……..

Duly authorised to sign on behalf ……

……

In the Capacity of ……..