

QUESTIONS AND ANSWERS REPORT

<u>To:</u>	Bidders
<u>From:</u>	UNDP Lebanon
<u>Subject:</u>	Supply and Installation of Hybrid Photovoltaic- Diesel Power Plants at Four Facilities in Lebanon
<u>Reference:</u>	LEB/CO ITB/188/17
<u>Date:</u>	14 November 2017

UNDP Lebanon Procurement Unit has received several questions regarding the subject Tendering Procedure. All questions received to-date are documented below with respective answers.

Questions and Answers		
1	Q.	Refer to Instructions to Bidders (ITB) DS No. 27 & 32 Evaluation Criteria: Proven track record with details, specifications and pictures of a minimum of 2 completed Hybrid PVDiesel projects of a minimum capacity of 70 kWp each, implemented, completed and commissioned in <u>Lebanon</u> , at the time of bidding. As the ITB is open to international bidders (section 5), the proven track record can be provided from any country and is not restricted to projects implemented in Lebanon, please confirm. Or is the Invitation to Bid for Lebanese national only. Please clarify.
	A.	As per the ITB DS No. 27 and 32, the projects have to be “implemented, completed and commissioned in Lebanon”. Furthermore, DS No 32 states “proof of after-sales service capacity and appropriateness, experience and capability of local service and technical support available”. The bid is open for international bidders, the above restriction could be met through joint ventures with local entities.
2	Q.	Refer to Section 2 – System specifications – Can you please clarify if the quantity of Dual Mode Inverter is flexible, as long as 3 phase connection and total power capacity is respected?
	A.	As per the ITB section “technical Specifications” sub-section 2 “system specifications” there is no limitation on the quantity of dual mode inverters as long as they meet the set out specifications.
3	Q.	Could you please clarify if design calculations should be part of the documents to be submitted with the bid?

	A.	As per the ITB DS No 27 and 32, the bidder is requested to submit a “detailed method statement for implementation with the requested timeframe and detailed work plan”, and “the technical description of equipment, system configuration and preliminary design comply with the requirements of design, performance and size”.
4	Q.	Refer to 3.4.1 Genset. Can you please clarify the model of the Genset Control Unit existing on the Lot 2 Site 1 - Tebnine Public School?
	A.	As per ITB section 3.4.2 “The specifications for the synchronization panel and control units for Lot 2 Site 1: Tebnine Public School are found in the table.” Hence the synchronization panel and control units are to be provided by the bidder.
5	Q.	Refer to 3.8 Technical Room. Can you please clarify if it is required to supply and install a technical cabinet for each site?
	A.	As per ITB section 3.8.1 “Excluding the PV generators and multi-string inverters, all the components – i.e. PV plant controller unit, (battery storage and dual mode inverter-only when applicable-), main board, switches and protective devices as well as connection of the different components shall be installed in a technical cabinet – supplied and installed by the Contractor-.”
6	Q.	Refer to 3.9.2 AC meters. Can you please clarify if an external power analyzer is required for the grid-dependents inverters for which the information is already monitored by a measurement tool inside the equipment itself?
	A.	If you are able to read and monitor the grid dependent inverters then there is no need to install a power analyzer to read from the same inverters.
7	Q.	Could you kindly provide the layout of each site showing location and details of interconnection point and Genset/s?
	A.	Please refer to the layouts provided along with the ITB, any additional information could be provided during the set site visits listed in the ITB DS No.7 page 19.
8	Q.	Could you please confirm if an internet connection will be available at each site for the monitoring system?
	A.	The availability of an internet connection will be checked during the site visits listed in DS No. 7; however, should these not be already available, the bidder should quote the internet connection within his/her bid.

9	Q.	In case of not having an internet connection available, could you confirm if a GSM (3G/4G) connection would be preferred/accepted and if the client would be responsible for the operational costs?
	A.	Should there be no internet connection available on the respective sites, depending on the GSM coverage quality which will be checked during the site visits, it might be preferable to a line connection.
10	Q.	Refer to 3.4.2 Genset Network. For Lot 2 Site 1: Tebnine public school, a complete diesel network for the diesel operated generators should be implemented by the Contractor following the below listed specifications. The network shall connect the centralized diesel generators to the three buildings of the school, the Contractor has the option to install either an aerial or an underground system complete with all necessary poles for the safety and proper performance of the network. Can you please confirm if the bidder can base on the distances between AC Totalizing panel and MDB Bus bars specified in the Single Line Diagram?
	A.	This information is currently preliminary, pending the final location for the installation of diesel gensets. This information will be provided during the site visit.
11	Q.	Refer to 1.4.4.4. Protection against effects of lightning and surge over-voltage – Please precise if there is any existing lightning protection in the facilities and type of protection.
	A.	There is no lightning protection systems installed on the areas of installation of the PV system on the different sites.
12	Q.	Kindly note through studying of the ITB we have noticed a statement in section 3.2.2 - PV Modules page 42: "The modules shall be crystalline silicon made of a series connection of 72 cells. Modules of 60 cells can be accepted if the general requirements and specifications are met. Amorphous silicon and other thin film type cells are not acceptable under this tender. " Please note that XXXXX provides premium thin film solar panels with higher efficiency than the conventional crystalline silicon panels with a proven performance advantage as follows: Up to 2% more annual energy Yield than Crystalline Silicone (C-Si) Up to 6% more annual yield than C-Si in humid conditions Up to 1% better shading response and less power loss proportional to shading than the C-Si Up to 2% better efficiency than the multi Crystalline Silicone panels. The material used is Cadmium telluride which is highly efficient and durable. Studies have shown that over a 10 years period the material loses almost only 6% of its energy output.

		<p>An end of life recycling program is also available with Caterpillar</p> <p>Our panels have a superior temperature coefficient performance assurance of 25 years not mentioning the solar panels warranty provided by XXXXX for 10 years. We kindly ask you to reconsider the disqualification of the material and give us the opportunity to bid in on this tender.</p>
	A.	<p>The submitted panel should meet the requirements set in the ITB in the “technical Specifications” section sub-section 3.2 “PV Generators”. Should the stated panels meet the technical specifications under 3.2.2 and have the required tests completed by a third party. Furthermore, the bidder needs to show “proof of successful operation in similar environmental and climatic conditions for at least 5 years for the system’s components (proof of at least 1 year of successful previous implementation for the fuel reduction device)” as stated in DS No. 32. The main components are listed in the DS No. 32 “main components (PV modules, mounting structures, inverters,...”</p>
13	Q.	<p>Please clarify if the proof of operation for at least 5 years was outside Lebanon would it be considered valid?</p>
	A.	<p>As per ITB DS No. 32 “proof of successful operation in similar environmental and climatic conditions for at least 5 years of the system’s components” this is not limited to Lebanon, but to areas with similar environmental and climatic conditions.</p>
14	Q.	<p>Refer to Questions and Answers Report dated 25 October 2017 1. A.: As a bidder, it is important to provide after sales services with appropriate experience and capability of local service and technical support available – as stated in DS No. 32. This requirement can be met with sub-contracting a local company to ensure longevity of the project. Refer to your response on forming a Joint Venture to meet the requirement stated in DS No. 27 and 32, please pass an addendum in DS stating that international bidders can join the bidding only by being in a Joint Venture with a local company OR please open the requirement for international bidders to provide proven track record of the said capacity from any country including the after sales services requisite within the country.</p>
	A.	<p>As per ITB DS No 27 “documents establishing eligibility” pages 22 to 25:</p> <ul style="list-style-type: none"> - “Minimum 3 years of experience in similar contracts within the renewable energy field (mainly solar photovoltaic systems, other than solar-powered street lighting), for the implementing local entity.” - “Proof of successful implementation of a minimum no. of 2 Hybrid Solar PV- Diesel projects undertaken over the past 3 years of a minimum capacity of 70 kWp each, implemented, completed and commissioned in Lebanon at the time of bidding, for the implementing local entity” - Proof of after-sales service capacity and appropriateness, experience and capability of local service and technical support available. - The CVs of the Key Staff (specialized renewable energy engineers, technicians and/or skilled workers proposed for the main tasks have the qualifications and experience in the installation of hybrid photovoltaic power plants; the Offeror’s

		<p>local implementing team should comprise at least 1 senior engineer with minimum 5 years of experience in the design and implementation of solar PV systems (other than solar-powered street lighting) with at least 1 year in Hybrid PV design, and at least 1 junior engineer with minimum 2 years of experience in PV systems, and at least 1 specialist with minimum 2 years in PLC programming, as well as technicians with proven record in PV systems' implementation.</p> <p>Furthermore, and As per ITB section 3a, sub – section 6" Terms of Execution" page 33-34, paragraph "Guarantees" "The supplied installations shall be tested, commissioned and handed over complete and in perfect operating condition and shall be covered under a defects liability (parts and labour) for a minimum period of 24 months from the date of commissioning. This warranty covers all manufacturer / workmanship defects only." In addition: "The Contractor must be available to answer any request that comes from the client. The reply delay of the Contractor should be within one week. The Contractor has a maximum of one month to replace any defective component."</p>
15	Q.	<p>Please refer to the Southern Suburbs Municipalities Federation – System Layout as well as the site's DWG file for this question. A preliminary system design using Helioscope software showed that it was not possible to reach 105 kWp total power while using the given area and accounting for setbacks from the roof edges and row spacing. The provided DWG file for SSMF was cross-checked to ensure the areas being used were indeed correct. The highest achievable output was approximately 90 kWp. Can you please advise on whether or not the Bidder is allowed to place panels on the western side of the building?</p>
	A.	<p>Priority is to fill the east side as it more south tilted; any additional capacity to meet the 105kWp required capacity can be installed on the west side.</p>
16	Q.	<p>Refer to 3.3.1. Grid Dependent Inverters – Can you please clarify if it's acceptable to place the inverters on the roof, close to the PV Panels?</p>
	A.	<p>Yes, however, the necessary protection (such as building sheds) should be accounted for to protect the equipment from direct sun or rain even if it is IP65 rated.</p>
17	Q.	<p>Refer to 3.4.1. Genset Unit – Can you please clarify the models of the two gensets used for the Lot 3 – Southern Suburbs Municipalities Federation?</p>
	A.	<p>The available Gensets are Perkins with capacities: 60 kVA and 150 kVA.</p>
18	Q.	<p>Refer to 3.4.2. Generator Control Unit – Can you please clarify if the Generator Control Unit of the two generators for the Lot 3 – Southern Suburbs Municipalities Federation has to be supplied by the bidder?</p>
	A.	<p>As per ITB section 3.4.2, the Genset control unit for Lot 3 Southern Suburbs Municipalities Federation is existent.</p>

19	Q.	Refer to 3.8. Technical Room – Is there any need to procure a Technical Room for Lot 3 – Southern Suburbs Municipalities Federation as most of the equipment and protection can be stored outside and there is no battery storage and dual mode inverter?
	A.	There is no need for a technical room as long as the different components are protected. Components such as electrical panels and the fuel reduction device can be installed in existing technical rooms if enough space is available.
20	Q.	Regarding Lot #3: Southern Suburbs Municipalities, please provide AutoCAD drawings that show the layout of the facility as well as the purlins below the corrugated roof.
	A.	As per the ITB section 3a “Schedule of Requirements and Technical Specifications” sub-section “technical drawings” page 68, the drawings can be found on the drop box folder with the provided link.
21	Q.	During the site visit in Lot #3 we requested the load profile of the facility which was confirmed that a one week profile was available. Can you please provide this data?
	A.	The requested information is provided in the attached excel.
22	Q.	Is there still a possibility to conduct a site visit to Dahye Municipalities during this week?
	A.	Interested bidders for additional site visits need to contact Mr. Mohamad Dergham (Mayor of the Municipalities Federation) on 03-316597 to coordinate the date for the visit.
23	Q.	Lot 1 Site 1: Jdeidet El Shouf Waste Water Treatment Facility- Jdeidet El Shouf: Your design shows 80 kW Inverter Power and 90 kWp DC, which suggests a ratio of DC/AC = 1.125. This contradicts with you requirement for Grid Dependent Inverters under section 3.3.1 for a ratio DC/AC to be 1.1. Can you please clarify whether this is a restriction, or whether we’re allowed to offer an optimized configuration.
	A.	As specified in the ITB section 2 System Specification sub-section 2.2 Lot 1, the inverters are required to be greater or equal to 80kW. As considering a DC/AC ratio of 1.1 would yield and inverter capacity of 81 kW.
24	Q.	Kindly send us the Single line diagram for kfarroumane.
	A.	As per ITB “Technical Drawings” section page 68 the requested SLD was posted online under the title: “Kfar Roummane School - Single Line Diagram V2”. Please find it attached herein.
25	Q.	In the ITB, some of the drawings has 2 inverters installed in their Design. Can we install one inverter that is equivalent to the size of the 2?
	A.	As per ITB single line diagram drawings, it is recommended to have: <ul style="list-style-type: none"> - 4 Grid – Tied Inverters in Jdeidet El Chouf (Lot 1 Site 1) As per ITB section 2.2 page 42, the grid tied inverter should have a “rated power ≥80,000W”

		<ul style="list-style-type: none"> - 2 Grid – Tied Inverters in Kfarroumane School (Lot 2 Site 2) As per ITB section 2.4 page 45, the grid – tied inveter should have a “rated power $\geq 27,000W$” - 5 Grid – Tied Inverters in Southern Suburbs (Lot 3 Site 1) As per ITB section 2.5 page 47, the grid-tied inverter should have a “rated power $\geq 95,000W$”. <p>However, it is required to have 2 separate Grid – Tied Inverters for Tebnine (Lot 2 Site 1), since as per ITB section 3.9.1 page 59 “[...] one of the grid tied inverters in order to connect the inverter to its connected load or to couple it with the second grid tied inverter”.</p>
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