

Request for Proposal (RFP)

RFP No.: 7/PA/D/2024

Project: **Sed El Baouchrieh Civil Defense Center** Country: LEBANON Issued on: 14/08/2024

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#### SECTION 1. LETTER OF INVITATION

The following Proposal would like to evaluate the cost estimation of purchase and installations of the proposed solar systems in accordance with the BOQ.

PCPM hereby invites you to submit a Proposal to this Request for Proposal (RFP) for the above-referenced subject.

This RFP includes the following documents and the General Terms and Conditions of Contract which is inserted in the Bid Data Sheet:

Section 1: This Letter of Invitation Section 2: Instruction to Bidders Section 3: Bid Data Sheet (BDS) Section 4: Evaluation Criteria Section 5: Terms of Reference (TOR) Section 6: Returnable Bidding Forms

- Form A: Proposal Submission Form
- Form B: Bidder Information Form
- $\circ$   $\,$  Form C: Qualification Form
- Form D: Format of Technical Proposal
- o Form E: Format of Financial Proposal

Interested candidates are requested to prepare the proposal in accordance to the requirements and procedures set out in this RFP and submit it by the Deadline for Submission of proposals set out in Bid Data Sheet.

Please acknowledge receipt of this RFP by sending an email to Lebanon.procurement@pcpm.org.pl, indicating the willingness to be a part of this RFP. This will enable you to receive amendments or updates to the RFP. Should you require any further clarifications, kindly communicate with the contact person identified in the attached Data Sheet as the focal point for queries on this RFP.

A mandatory site visit shall take place on the 21<sup>st</sup> of August 2024 . Interested bidders are requested to confirm their attendance by email to receive further information regarding the site visit.

PCPM looks forward to receiving your Proposal and thank you in advance for your interest in PCPM procurement opportunities.

Issued by

Approved by:

Name: Hady Abouraad Title: Senior Procurement Officer Date: 14.08.2024 Name: Rana Gabi Title: Country Director Date: 14.08.2024

# SECTION 2. INSTRUCTION TO BIDDERS

# A. TIMELINE

EVENT	DATE	TIME*
Mandatory Site visit	August 21 <sup>st</sup> 2024	10 am
Information meeting (if any)	N/A	N/A
Deadline for requesting clarification from PCPM	Date : August 22 <sup>nd</sup> 2024 by email to the following address: lebanon.procurement@pcpm.org.p l	5:00 p.m.
Last date for the PCPM to issue RFP clarification	Date : August 26 <sup>th</sup> 2024	5:00 p.m.
Deadline for submitting tenders	Date : August 27 <sup>th</sup> 2024	End of day
Interviews (if any)	N/A	N/A
Offers opening	Date : August 28 <sup>th</sup> 2024	Noon
Completion date for evaluating offers	Date :August 30 <sup>th</sup> 2024	СОВ
Notification of award	02.09.2024	5:00 p.m.
Contract signature	03.09.2024	4:00 p.m.
Start date	04.09.2024	8:00 a.m.

\* All times are in the time zone of the country specified in the RFP

В. (	GENERAL PROVISION	NS		
1.	Introduction		1.1	Bidders shall adhere to all the requirements of this RFP, including any amendments made in writing by PCPM. This RFP is conducted in accordance with the PCPM Standard Operating Procedures (SOP) on Contracts and Procurement.
			1.2	Any Proposal submitted will be regarded as an offer by the Bidder and does not constitute or imply the acceptance of the Proposal by PCPM. PCPM is under no obligation to award a contract to any Bidder as a result of this RFP.
			1.3	PCPM reserves the right to cancel the procurement process at any stage without any liability of any kind for PCPM, upon notice to the bidders.
2.	Fraud Corruption, Gifts a Hospitality	& and	2.1	PCPM strictly enforces a policy of zero tolerance on proscribed practices, including fraud, corruption, collusion, unethical or unprofessional practices, and obstruction of PCPM vendors and requires all bidders/vendors to observe the highest standard of ethics during the procurement process and contract implementation.

	2.2	<ul> <li>Bidders/vendors shall not offer gifts or hospitality of any kind to PCPM staff members including recreational trips to sporting or cultural events, theme parks or offers of holidays, transportation, or invitations to extravagant lunches or dinners.</li> <li>In pursuance of this policy, PCPM:</li> <li>(a) Shall reject a proposal if it determines that the selected bidder has engaged in any corrupt or fraudulent practices in competing for the contract in question;</li> <li>(b) Shall declare a vendor ineligible, either indefinitely or for a stated period, to be awarded a contract if at any time it determines that the vendor has engaged in any</li> </ul>
3 Eligibility		corrupt or fraudulent practices in competing for, or in executing a PCPM contract.
	3.1	A vendor should not be suspended, debarred, or otherwise identified as ineligible by any UN Organization or the World Bank Group or any other international Organization. Vendors are therefore required to disclose to PCPM whether they are subject to any sanction or temporary suspension imposed by these organizations.
	3.2	It is the Bidder's responsibility to ensure that its employees, joint venture members, sub-contractors, service providers, suppliers and/or their employees meet the eligibility requirements as established by PCPM.
4. Conflict of Interests	4.1	Bidders must strictly avoid conflicts with other assignments or their own interests, and act without consideration for future work. Bidders found to have a conflict of interest shall be disqualified. Without limitation on the generality of the above, Bidders, and any of their affiliates, shall be considered to have a conflict of interest with one or more parties in this solicitation process, if they:
		a. Are or have been associated in the past, with a firm or any of its affiliates which have been engaged by PCPM to provide services for the preparation of the design, specifications, Terms of Reference, cost analysis/estimation, and other documents to be used for the procurement of the goods and services in this selection process;
		<ul> <li>b. Were involved in the preparation and/or design of the programme/project related to the goods and/or services requested under this RFP; or</li> <li>c. Are found to be in conflict for any other reason, as may be established by, or at the discretion of PCPM</li> </ul>
	4.2	In the event of any uncertainty in the interpretation of a potential conflict of interest, Bidders must disclose to PCPM, and seek PCPM's confirmation on whether or not such conflict exists.
	4.3	Similarly, the Bidders must disclose in their Proposal their knowledge of the following:
		a) If the owners, part-owners, officers, directors, controlling shareholders, of the bidding entity or key personnel who are family members of PCPM staff involved in the procurement functions and/or the Government of the country or any Implementing Partner receiving goods and/or services under this RFP; and
		<ul> <li>b) All other circumstances that could potentially lead to actual or perceived conflict of interest, collusion or unfair competition practices.</li> <li>Failure to disclose such an information may result in the rejection of the Proposal or Proposals affected by the non-disclosure.</li> </ul>

С. Р	C. PREPARATION OF PROPOSALS			
5.	General Considerations	5.1	In preparing the Proposal the Bidder is expected to examine the RFP in details. Material deficiencies in providing the information requested in the RFP may result in rejection of the Proposal.	
		5.2	The Bidder will not be permitted to take advantage of any errors or omissions in the RFP. Should such errors or omissions be discovered, the Bidder must notify the PCPM accordingly.	
6.	Cost of Preparation of Proposal	6.1	The Bidder shall bear all costs related to the preparation and/or submission of the Proposal, regardless of whether its Proposal is selected or not. PCPM shall not be responsible or liable for those costs, regardless of the conduct or outcome of the procurement process.	
7.	Language	7.1	The Proposal, as well as any and all related correspondence exchanged by the Bidder and PCPM, shall be written in the language (s) specified in the BDS.	
8.	Documents Comprising the Proposal	<ul> <li>8.1</li> <li>Sig docut</li> <li>Tecl</li> <li>Fina</li> <li>Req</li> </ul>	The Proposal shall comprise: ned RFP document by e-signature or duly printed, singed and scanned RFP ment. nnical proposal incial proposal uired documents, returnable forms and attachments to this proposal	
9.	DocumentsEstablishingtheEligibilityandQualificationsofthe Bidder	9.1	The Bidder shall furnish documentary evidence of its status as an eligible and qualified vendor, using the Forms provided under Section 6 and providing documents required in those forms. In order to award a contract to a Bidder, its qualifications must be documented to PCPM's satisfaction.	
10.	Technical Proposal Format and Content	10.1	The Bidder is required to submit a Technical Proposal using the Standard Forms and templates provided in Section 6 of the RFP.	
11.	Financial Proposal	11.1	The Financial Proposal shall be prepared using the Standard Form provided in Section 6 of the RFP. It shall list all major cost components associated with the services, and the detailed breakdown of such costs.	
		11.2	Any output and activities described in the Technical Proposal but not priced in the Financial Proposal, shall be assumed to be included in the prices of other activities or items, as well as in the final total price.	
		11.3	Prices and other financial information must not be disclosed in any other place except in the financial proposal.	
12.	Currencies	12.1	All prices shall be quoted in the currency of USD as indicated in the BDS.	
13.	Joint Venture, Consortium or Association	13.1	For the purpose of this Proposal, Joint Venture, Consortium or Association in any form are accepted.	
14.	Only One Proposal	14.1	The Bidder shall submit only one Proposal, in its own name.	
		14.2	Proposals submitted by two (2) or more bidders shall all be rejected if they are found to have any of the following:	

	<ul> <li>a) they have at least one controlling partner, director or shareholder in common; or</li> <li>b) any one of them receive or have received any direct or indirect subsidy from the other/s; or</li> <li>c) they have the same legal representative for purposes of this RFP; or</li> <li>d) they have a relationship with each other, directly or through common third parties, that puts them in a position to have access to information about, or influence on the Proposal of another Bidder regarding this RFP process;</li> <li>e) they are subcontractors to each other's Proposal, or a subcontractor to one Proposal also submits another Proposal under its name as lead der; or some key personnel proposed to be in the team of one Bidder participates in more than one Proposal received for this RFP process. This condition relating to the personnel, does not apply to subcontractors being included in more than one Proposal.</li> </ul>
15. Proposal Validity Period	<b>5.1</b> Proposals shall remain valid for the period specified in the BDS, commencing on the Deadline for Submission of Proposals. A Proposal valid for a shorter period may be rejected by PCPM and rendered non-responsive.
	<b>5.2</b> During the Proposal validity period, the Bidder shall maintain its original Proposal without any change, including the availability of the Key Personnel, the proposed rates and the total price.
16. Extension of Proposal Validity Period	<b>6.1</b> In exceptional circumstances, prior to the expiration of the Proposal validity period, PCPM may request Bidders to extend the period of validity of their Proposals. The request and the responses shall be made in writing and shall be considered integral to the Proposal.
	<b>6.2</b> If the Bidder agrees to extend the validity of its Proposal, it shall be done without any change to the original Proposal.
	<b>6.3</b> The Bidder has the right to refuse to extend the validity of its Proposal, in which case, the Proposal shall not be further evaluated.
17. Clarification of Proposal (from the Bidders)	7.1 Bidders may request clarifications on any of the RFP documents no later than the date indicated in the BDS. Any request for clarification must be sent in writing in the manner indicated in the BDS. If inquiries are sent other than specified channel, even if they are sent to a PCPM staff member, PCPM shall have no obligation to respond or confirm that the query was officially received.
	<b>7.2</b> PCPM will provide the responses to clarifications through the method specified in the BDS.
	<b>7.3</b> PCPM shall endeavour to provide responses to clarifications in an expeditious manner, but any delay in such response shall not cause an obligation on the part of PCPM to extend the submission date of the Proposals, unless PCPM deems that such an extension is justified and necessary.
18. Amendment of Proposals	<b>8.1</b> At any time prior to the deadline of Proposal submission, PCPM may for any reason, such as in response to a clarification requested by a Bidder, modify the RFP in the form of an amendment to the RFP. Amendments will be made available to all prospective bidders.
	<b>8.2</b> If the amendment is substantial, PCPM may extend the Deadline for submission of Proposal to give the Bidders reasonable time to incorporate the amendment into their Proposals.

19. Alternative Proposals	<b>19.1</b> Unless otherwise specified in the BDS, alternative Proposals shall not be considered.
D. SUBMISSION AND OPENI	NG OF PROPOSALS
20. Submission	20.1The Bidder shall send a scan of a duly signed and complete RFP comprising the documents and forms in accordance with requirements in the BDS to the email address <u>lebanon.procurement@pcpm.org.pl</u> . The Proposal shall be sent as a password-encrypted PDF file comprising all required forms and attachments. A password to the file shall only be sent upon the deadline for submissions in a separate email message from the same email address which was used to send the Proposal itself.
	<b>20.2</b> The Proposal shall be signed by the Bidder or person(s) duly authorized to commit the Bidder. The authorization shall be communicated through a document evidencing such authorization issued by the legal representative of the bidding entity, or a Power of Attorney, accompanying the Proposal.
	<b>20.3</b> Bidders must be aware that the mere act of submission of a Proposal in and of itself, implies that the Bidder fully accepts the PCPM General Contract Terms and Conditions.
21. Deadline for Submission of Proposals and Late submissions	<b>21.1</b> Complete Proposals must be received by PCPM in the manner, and no later than the date and time, specified in the BDS. PCPM shall only recognize the actual date and time that the proposal was received by PCPM.
	<b>21.2</b> PCPM shall not consider any Proposal that is received after the deadline for the submission of Proposals.
22. Withdrawal, Substitution, and Modification of	<b>22.1</b> A Bidder may withdraw, substitute or modify its Proposal after it has been submitted at any time prior to the deadline for submission.
Proposals	<b>22.2</b> A Bidder may withdraw, substitute or modify its Proposal by sending a scan of a written notice to PCPM, duly signed by an authorized representative, and shall include a copy of the authorization (or a Power of Attorney). The corresponding substitution or modification of the Proposal, if any, must accompany the respective written notice. All notices must be submitted in the same manner as specified for submission of Proposals, by clearly marking them as "WITHDRAWAL" "SUBSTITUTION," or "MODIFICATION".
	<b>22.3</b> Proposals requested to be withdrawn shall be returned unopened to the Bidders (only for manual submissions), except if the proposal is withdrawn after the proposal has been opened.
23. Proposal Opening	<b>23.1</b> There is no public opening for RFP. PCPM will open the Proposal in the presence of an ad-hoc committee formed by PCPM of at least three (3) members.
E. EVALUATION OF PROPOS	ALS
24. Confidentiality	<b>24.1</b> Information relating to the examination, evaluation, and comparison of Proposals, and the recommendation of contract award, shall not be disclosed to Bidders or any other persons not officially concerned with such process, even after publication of the contract award.
	<b>24.2</b> Any effort by a Bidder or anyone on behalf of the Bidder to influence PCPM in the examination, evaluation and comparison of the Proposals or contract award

		decisions may, at PCPM's decision, result in the rejection of its Proposal and may subsequently be subject to the application of prevailing PCPM's vendor sanctions procedures.
25. Evaluation of Proposals	25.1 25.2	<ul> <li>PCPM will conduct the evaluation solely on the basis of the Proposal technical and financial proposals received.</li> <li>Evaluation of Proposals shall be undertaken in the following steps: <ul> <li>a) Preliminary Examination</li> <li>b) Minimum eligibility and Qualification assessment (if pre-qualification was not done)</li> <li>c) Evaluation of Technical Proposals</li> <li>d) Evaluation of Financial proposals</li> </ul> </li> </ul>
26. Preliminary Examination	26.1	PCPM shall examine the Proposals to determine whether they are complete with respect to minimum documentary requirements, whether the documents have been properly signed, and whether the Proposals are generally in order, among other indicators that may be used at this stage. PCPM reserves the right to reject any Proposal at this stage.
27. Evaluation of Eligibility and Qualification	27.1	Eligibility and Qualification of the Bidder will be evaluated against the Minimum Eligibility/Qualification requirements specified in the Section 4 (Evaluation Criteria).
	27.2	<ul> <li>In general terms, vendors that meet the following criteria may be considered qualified:</li> <li>a) They are not included in the UN Security Council 1267/1989 Committee's list of terrorists and terrorist financiers, and in UNDP's ineligible vendors' list;</li> <li>b) They have a good financial standing and have access to adequate financial resources to perform the contract and all existing commercial commitments,</li> <li>c) They have the necessary similar experience, technical expertise, production capacity, quality certifications, quality assurance procedures and other resources applicable to the supply of goods and/or services required;</li> <li>d) They are able to comply fully with the PCPM General Terms and Conditions of Contract;</li> <li>e) They do not have a consistent history of court/arbitral award decisions against the Bidder; and</li> <li>f) They have a record of timely and satisfactory performance with their clients.</li> </ul>
28. Evaluation of Technical proposal and financial proposal	28.1	The evaluation team shall review and evaluate the Technical Proposals on the basis of their responsiveness to the to the Terms of Reference and other documentation provided, applying the evaluation criteria, sub-criteria, and point system specified in the Section 4 (Evaluation Criteria).
	28.2	A Proposal shall be rendered nonresponsive at the technical evaluation stage if it fails to achieve the minimum technical score indicated in the BDS. When necessary, and if stated in the BDS, PCPM may invite technically responsive bidders for a presentation related to their technical Proposals. The conditions for the presentation shall be provided in the proposal document where required.
	28.3	In the second stage, only the Financial Proposals of those bidders who achieve the minimum technical score will be opened for evaluation. The Financial Proposals corresponding to Technical Proposals that were rendered nonresponsive shall remain unopened, and, in the case of manual submission, be returned to the Proposal der unopened.

	28.4 28.5	The evaluation method that applies for this RFP shall be as indicated in the BDS, which may be either of two (2) possible methods, as follows: (a) the lowest priced method which selects the lowest evaluated financial proposal of the technically responsive bidders; or (b) the combined scoring method which will be based on a combination of the technical and financial score. When the BDS specifies a combined scoring method, the formula for the rating of the Proposals will be as follows: Rating the Technical Proposal (TP):
		TP Rating = (Total Score Obtained by the Offer / Max. Obtainable Score for TP) x 100
		Rating the Financial Proposal (FP):
		FP Rating = (Lowest Priced Offer / Price of the Offer Being Reviewed) x 100
		Total Combined Score:
		Combined Score = (TP Rating) x (Weight of TP, e.g. 70%) + (FP Rating) x (Weight of FP, e.g., 30%)
	The v obtai	vinning proposal will be the one with the highest number of points after the points ned in both technical and financial evaluations, respectively, are added up.
29. Due diligence	29.1	<ul> <li>PCPM reserves the right to undertake a due diligence exercise, aimed at determining to its satisfaction, the validity of the information provided by the Bidder. Such exercise shall be fully documented and may include, but need not be limited to, all or any combination of the following:</li> <li>a) Verification of accuracy, correctness and authenticity of information provided by the Bidder;</li> <li>b) Validation of extent of compliance to the RFP requirements and evaluation criteria based on what has so far been found by the evaluation team;</li> <li>c) Inquiry and reference checking with Government entities with jurisdiction on the Bidder, or with previous clients, or any other entity that may have done business with the Bidder;</li> <li>d) Inquiry and reference checking with previous clients on the performance on on-going or completed contracts, including physical inspections of previous works, as deemed necessary;</li> <li>e) Physical inspection of the Bidder's offices, branches or other places where business transpires, with or without notice to the Bidder;</li> <li>f) Other means that PCPM may deem appropriate, at any stage within the selection process, prior to awarding the contract.</li> </ul>
30. Clarification of Proposals	30.1	To assist in the examination, evaluation and comparison of Proposals, PCPM may, at its discretion, request any Bidder for a clarification of its Proposal.
	30.2	PCPM's request for clarification and the response shall be in writing and no change in the prices or substance of the Proposal shall be sought, offered, or permitted, except to provide clarification, and confirm the correction of any arithmetic errors discovered by PCPM in the evaluation of the Proposals, in accordance with the RFP.
	30.3	Any unsolicited clarification submitted by a Bidder in respect to its Proposal, which is not a response to a request by PCPM, shall not be considered during the review and evaluation of the Proposals.

31. Responsiveness of Proposal	31.1 31.2	A substantially responsive Proposal is one that conforms to all the terms, conditions, TOR and other requirements of the RFP without material deviation, reservation, or omission. If a Proposal is not substantially responsive, it shall be rejected by PCPM and may not subsequently be made responsive by the Bidder by correction of the material deviation, reservation, or omission.
32. Nonconformities, Reparable Errors and Omissions	32.1	Provided that a Proposal is substantially responsive, PCPM may waive any nonconformities or omissions in the Proposal that, in the opinion of PCPM, do not constitute a material deviation.
	32.2	PCPM may request the bidder to submit the necessary information or documentation, within a reasonable period of time, to rectify nonmaterial nonconformities or omissions in the Proposal related to documentation requirements. Such omission shall not be related to any aspect of the price of the Proposal. Failure of the Proposal der to comply with the request may result in the rejection of its Proposal.
	32.3	For Financial Proposal that has been opened, PCPM shall check and correct arithmetical errors as follows:
		a) if there is a discrepancy between the unit price and the line item total that is obtained by multiplying the unit price by the quantity, the unit price shall prevail and the line item total shall be corrected, unless in the opinion of PCPM there is an obvious misplacement of the decimal point in the unit price; in which case the line item total as quoted shall govern and the unit price shall be corrected;
		b) if there is an error in a total corresponding to the addition or subtraction of subtotals, the subtotals shall prevail and the total shall be corrected; and
		c) if there is a discrepancy between words and figures, the amount in words shall prevail, unless the amount expressed in words is related to an arithmetic error, in which case the amount in figures shall prevail.
	lf the be re	e bidder does not accept the correction of errors made by PCPM, its Proposal shall ejected.
F. AWARD OF CONTRACT		
33. Right to Accept, Reject, Any or All Proposals	33.1	PCPM reserves the right to accept or reject any proposal, to render any or all of the proposals as non-responsive, and to reject all Proposals at any time prior to award of contract, without incurring any liability, or obligation to inform the affected Bidder(s) of the grounds for PCPM's action. PCPM shall not be obliged to award the contract to the lowest priced offer.
34. Award Criteria	34.1	Prior to expiration of the proposal validity, PCPM shall award the contract to the qualified bidder based on the award criteria indicated in the BDS.
35. Debriefing	35.1	In the event that a Bidder is unsuccessful, the Bidder may request for a debriefing from PCPM. The purpose of the debriefing is to discuss the strengths and weaknesses of the Bidder's submission, in order to assist the Bidder in improving its future Proposals for PCPM procurement opportunities. The content of other Proposals and how they compare to the Bidder's submission shall not be discussed.

36. Right to Vary Requirements at the Time of Award	36.1	At the time of award of Contract, PCPM reserves the right to vary the quantity of goods and/or services, by up to a maximum twenty-five per cent (25%) of the total offer, without any change in the unit price or other terms and conditions.
37. Contract Signature	37.1	Within seven (7) days from the date of receipt of the Contract, the successful Bidder shall sign and date the Contract and return it to PCPM. Failure to do so may constitute sufficient grounds for the annulment of the award, and on which event, PCPM may award the Contract to the Second highest rated or call for new Proposals.
38. Liquidated Damages	38.1	PCPM shall apply Liquidated Damages for the damages and/or risks caused to PCPM resulting from the Contractor's delays or breach of its obligations as per Contract.
39. Payment Provisions	39.1	Payment conditions shall be governed by the Contract with a successful Bidder.

#### SECTION 3. BID DATA SHEET

The following data for the goods and/or services to be procured shall complement, supplement, or amend the provisions in the Request for Proposal. In the case of a conflict between the Instructions to Bidders, the Bid Data Sheet, and other annexes or references attached to the Bid Data Sheet, the provisions in the Bid Data Sheet shall prevail.

BDS No.	Ref. to Section.2	Data	Specific Instructions / Requirements
1	7	Language of the Proposal	English
2		Submitting Proposals for Parts or sub-parts of the TOR (partial proposals)	Not Allowed
3	20	Number of Copies	1 original
4	19	Alternative Proposals	Shall not be considered
5	15	Proposal Validity Period	60 days
6		Advanced Payment upon signing of contract	To be determined in the contract, as specified in Section 2 point 39.
7	36	Liquidated Damages	Will be imposed as follows: Percentage of contract price per day of delay: 5% Max. number of days of delay 30, after which PCPM may terminate the contract.
8		Performance Security	Not Required
9	12	Currency of Proposal	United States Dollar
10	17	Contact Details for submitting clarifications/questions	E-mail address: <u>lebanon.procurement@pcpm.org.pl</u>
11	18, 19 and 21	Manner of Disseminating Supplemental Information to the RFP and responses/clarifications to queries	Direct communication to prospective Proposers by email
12	23	Deadline for Submission	August 27 <sup>th</sup> , end of day.

13	22	Allowable Manner of Submitting Proposal s	<ul> <li>□ Courier/Hand Delivery</li> <li>⊠ Submission by email</li> <li>□e-Tendering</li> </ul>
14	22	Proposal Submission Address	lebanon.procurement@pcpm.org.pl
15	23	Date, time and venue for the opening of proposal	Date and Time: August 28 <sup>th</sup> , 2022 Noon Venue: PCPM premises
16	27, 36	Evaluation Method for the Award of Contract	Best Value for Money
17		Expected date for commencement of Contract	September 4 <sup>th</sup> 2024
18		Maximum expected duration of contract	2 months
19	32, 35	PCPM will award the contract to:	One Proposer Only
20		Method of payment	The payment shall be made via bank transfer from PCPM offshore bank account in Poland to the vendor bank account outside Lebanon

## SECTION 4. EVALUATION CRITERIA

#### **Required documents**

- Record of previous experience in similar projects in addition to reference letters
- Method statement
- Organizational Structure and resources allocated to the project
- List of subcontractors if applicable
- Health and safety procedures
- Detailed PV layout and SLD as per submitted material
- Material specification conformity sheets with list of deviations
- Material manufacturer's datasheets
- Certifications and test reports
- Implementation schedule

#### **Preliminary Examination Criteria**

## **Minimum Eligibility and Qualification Criteria**

Eligibility and Qualification will be evaluated on a Pass/Fail basis.

Subject	Criteria	Document Submission requirement
ELIGIBILITY		
Legal Status	Vendor is a legally registered entity.	Form B: Bidder Information Form
Eligibility	Vendor is not suspended, nor debarred, nor otherwise identified as ineligible by any UN Organization or the World Bank Group or any other international Organization in accordance with RFP clause 3.	Form A: Proposal Submission Form
Conflict of Interest	No conflicts of interest in accordance with RFP clause 4.	Form A: Proposal Submission Form
Bankruptcy	Has not declared bankruptcy, is not involved in bankruptcy or receivership proceedings, and there is no judgment or pending legal action against the vendor that could impair its operations in the foreseeable future.	Form A: Proposal Submission Form Form B: Proposal der Information Form
Certificates, authorization, and Licenses	Data sheets, Catalogues and Certificates of conformity for the various system components, meet or exceed the requirements of this RFP and relevant international performance standards. Authorizations by the main goods' manufacturer to Proposal der offering to supply the goods in the country of final destination shall be submitted.	Form B: Proposal der Information Form
QUALIFICATION		

History of Non- Performing Contracts <sup>1</sup>	Non-performance of a contract did not occur as a result of contractor default for the last 5 years.	Form C: Qualification Form
Litigation History	No consistent history of court/arbitral award decisions against the Bidder for the last 5 years.	Form C: Qualification Form
Previous Experience	Minimum (3) years of successful experience in the PV sector for all the system's components manufacturers.	Form B: Proposal der Information Form
	Minimum three (3) years of experience in similar contracts within the renewable energy field for the implementing local entity.	Form C: Qualification Form
Technical Evaluation	The technical proposals shall be evaluated Based on weighted scoring method	Form D: Technical Proposal Form

Financial Evaluation	Detailed analysis of the price schedule based on requirements listed in Section 5 and quoted for by the bidders in Form E.	Form E: Price Schedule Form
	Price comparison shall be based on price offered by the bidder, including transportation, insurance and the total cost of ownership (including spare parts, installation, commissioning, training, manpower, scaffolding, civil works, etc, where applicable)	

<sup>&</sup>lt;sup>1</sup> Non-performance, as decided by PCPM, shall include all contracts where (a) non-performance was not challenged by the contractor, including through referral to the dispute resolution mechanism under the respective contract, and (b) contracts that were so challenged but fully settled against the contractor. Non-performance shall not include contracts where Employers decision was overruled by the dispute resolution mechanism. Non-performance must be based on all information on fully settled disputes or litigation, i.e. dispute or litigation that has been resolved in accordance with the dispute resolution mechanism under the respective contract and where all appeal instances available to the Bidder have been exhausted.

#### SECTION 5: TERMS OF REFERENCE

## **1. BACKGROUND ON THE PROJECT:**

The objective of this RFQ is the supply and installation of a Solar Photovoltaic (PV) System consisting of PV arrays, inverters, LFP batteries with BMS, steel structure, and other equipment at the Civil Defense Center in Sed El Baouchrieh in addition to the provision of training and documentation on the operation and maintenance of installed system.

#### 2. DESCRIPTION OF RESPONSIBILITIES / SCOPE OF WORK

The works under this RFQ consists of supplying all the components, installing, testing and handing over in good operating conditions complete system detailed here after, as well as documentation and training.

The Contractor shall provide all necessary components and accessories as well as manpower, scaffolding, elevated structure, civil works, etc., at the Contractor's own expense to install a complete operational system.

The equipment furnished to these specifications must meet or exceed all requirements herein. Modifications of or additions to basic standard equipment of less size or capability to meet these requirements will not be acceptable.

The bidders are invited to read the specifications carefully, as there may be special requirements not commonly offered by all manufacturers. Nevertheless, the technical specifications presented herein are not to be interpreted as necessarily defining a particular manufacturer's product, model or features. The equipment shall conform in capability, strength, quality and workmanship to the accepted industry standards and relevant international quality standards.

#### Reporting:

- I. The contractor shall submit the following reports:
  - Weekly progress report. This progress report shall include:
    - Photographic records
    - o Complete works schedule and details
    - Upcoming week's schedule of works
    - Update on shipment status
- II. The Contractor shall review the detailed bill of quantities and submit a layout drawing, list of the required tools, accessories and labour force needed to complete the scope of work in the contract

# **Functional Configuration**

The PV plants shall be delivered and installed as detailed in Table 1 below:

Facility	PV system Size	Туре
		AC output: Three Phase
Civil Dofonco	BV Array: minimum 11 kWn	Ballery Pack: LifePO4
Civil Deletise	Storage: minimum 20 kWh	EDL grid
Baouchrieh	AC Output: Minimum 10 kW	<u>PV array</u> is roof mounted and <u>remaining equipment</u>
		shall be installed in new equipment space.

The Solar PV system shall be able to feed the load as well as net-meter with EDL if surplus energy is generated. It is the contractor's responsibility to assist the beneficiaries in submitting and following up the net-metering application for the beneficiary (<u>http://www.edlnetmetering.com/</u>).

# It is the contractor's responsibility to fill in all the required official documents such as the permitting available at

# https://lcec.org.lb/node/2869 and submit the application and supporting documents to the representative entity / focal point as per the requirement. A copy of the filled application shall be shared with the PCPM Team.

The system design should prevent the following risks from utility network or Genset network: Fault current, Voltage rise, Reverse Power Flow, and potentially Neutral Voltage Displacement.

The functional description of the Operational Modes can be summarized as follows:

#### EDL Grid Mode: Grid supplies the load

The EDL grid in the center is the main source of energy. When there is grid supply, the PV system can reduce the consumption from the utility grid by parallel connection and offsetting the loads of the facility as well as potentially back-feeding surplus PV production into the grid. This can be achieved through EDL net metering. It is recommended to install EDL net metering following PV installation. It is the contractor's responsibility to assist the beneficiaries in the net metering application and in submitting it to EDL.

# **Batteries Mode:**

Battery storage is requested in the center to cover the load during working hours . Where applicable, If the generator was turned ON manually by the beneficiary, the generator will supply the loads and the inverter/charger will charge the batteries.

The genset shall have the possibility to turn ON automatically once the battery capacity decreased below a certain percentage. The exact battery capacity percentage will be agreed on with the beneficiary on site. The genset must be able to charge the batteries when ON. Back feed to the generator to be prevented.

All necessary controllers and equipment to ensure the correct functioning of the Operational Modes shall be included in the offer.

#### Mechanical design and exposure to environmental conditions

Support structures and mounting arrangements should comply with applicable building codes, regulations and standards. Particular attention should be given to potential corrosive environment, if any, and to wind loads on the PV generators and their structures so that they withstand winds of up to 120 km/h, wind load calculation are to be submitted.

All the mounting structures' material shall be corrosion-resistant, lightweight aluminum or galvanized steel.

All accessories shall be corrosion resistant. The same applies to all bolts, nuts, guy wires and fasteners. PV clamps to be used in between modules must be aluminum.

Outdoor wiring and associated components are exposed to UV, wind, water and other environmental conditions. Wiring and components should be fit for this purpose and built in such a way as to minimize exposure to detrimental environmental effects (hot dip galvanized covered cable trays, underground or rigid conduits). Particular attention is drawn to the need for prevention of water accumulation in cable/module supports.

Batteries, BMS, inverters, and ATS should be installed inside a technical room according to the manufacturer's recommendations.

#### 2.1 SYSTEM SPECIFICATIONS AND INSTALLATION REQUIREMENTS

The technical specifications consist of the description included herein or equivalent and the technical drawings attached. Offerors are advised to study the drawings in detail since the specifications and requirements on the drawings are a relevant part of the requirements and not necessarily included in this text.

The equipment shall conform in capability, strength, quality and work-person-ship to the accepted industry standards and relevant international quality standards.

Critical standards and specifications for individual components to be procured, installed and connected are presented below.

# **General Specifications**

No construction works shall start at the selected sites until the complete manuals and technical specifications are prepared by the Contractor and approved by the consultant.

The contractor must respect all other installations or systems existing at the facilities near the place of his/her works. Any damage to other systems caused by the contractor will be fixed under his/her total expenses.

The works under this project consists of supplying all the systems' components, installing, testing and handing over in good operating conditions in addition to complete O&M complete systems detailed in this RFQ.

The project consists of the supply and installation of the following equipment:

- PV array according to site specifications and equipment standards
- Earthing and protection equipment.
- Energy storage system with BMS, inverters.
- Cables with their mechanical and electrical protection (cables trays, conduits, circuit breakers etc..)
- Datalogging and system local and remote monitoring
- MTS with bypass and necessary timers and relays to transfer between existing power sources as shown on the single line diagrams
- All cable connections required to complete the system operation including
- cable routing of existing cables to the technical rooms inside hot dip galvanized covered cable trays.
- Cables crossing into the technical rooms or buildings to be inside pipes with a treatment to prevent any water leakage inside
- Clear Labelling of all cables and devices where labels must match the as-built drawings. Labels installed outdoor should be UV resistance and weatherproof
- Testing and Handing Over in good operation conditions with as-built drawings
- List of alarms and fault codes with possible troubleshooting information
- Training Manual and Training sessions on the installed equipment to the beneficiaries' staff.

The contractor shall provide all necessary components, and accessories as well as human power, civil works, scaffolding, etc., at the Contractor's own expense to install complete operational units.

The PV power plant shall be installed in existing facility of the indicated beneficiary site and set to operate either with the existing or with the generator subscription.

The equipment furnished to these specifications must meet or exceed all requirements herein and in the attached technical drawings. Modifications of or additions to basic standard equipment of less size or capability to meet these requirements will not be acceptable.

Bidders are cautioned to read the specifications carefully, as there may be special requirements not commonly offered by all manufacturers. Nevertheless, the technical specifications presented herein are not to be interpreted as necessarily defining a particular manufacturer's product, model or features. The equipment shall conform in capability, strength, quality and workmanship to the accepted industry standards and relevant international quality standards.

It should be noted that the equipment offered should be suitable for operation at 380V-400V (3-phase), 50 Hz and there

may be voltage sags and voltage surges from the utility grid side during storms.

# Earthing

- The contractor is responsible for the installation of an electrical earthing system in the site in the form suitable to the site conditions, with a ground resistance value less than 5 ohms.
- The contractor is responsible for the interconnection of all the metallic parts of the plant, including but not limited to metallic structure, cable trays, panelboards, inverters, relevant protection devices, etc. on both DC and AC sides. The bonding connection must be connected to the main earthing terminal.
- The earthing and bonding cables have to be yellow-green colored.
- The earthing system shall be compliant with IEC 60364-7-712 Low voltage electrical installations.

# Lightning Protection

- The contractor is responsible for the supply and installation of a complete external lightning protection system (LPS) in the site.
- The contractor must keep a certain separation distance between the conductive parts of the solar PV system and the LPS, to prevent shadows, induced overvoltage, and arcing.
- If separation distance cannot be maintained, the metal components of the solar PV system must be connected to the LPS through a conductor with a cross-section of at least 16mm<sup>2</sup>.
- The Lightning protection system should be implemented according to IEC 62305-3 and best practices for similar systems.
- The ground rods of the earthing system and lighting protection system should not be bonded.

# Mounting Structure

- Fixed-tilt type, either foundation-mount or ballasted-mount type, concrete density should be at least 2500 kg/m<sup>3</sup>).
- Roof mount elevated structures shall be installed on concrete pads to avoid drilling in the roof.
- Direct fixation into the roof is not allowed. Any direct or indirect impact on the roof waterproofing, should be remediated by the contractor. Either G90 hot-dip galvanized steel or aluminum. The cutting edges and openings should be cold galvanized. Nuts and bolts shall be stainless steel of grade SS 304.
- Mounting structure must be designed in a way to have the solar PV array yield oriented to allow the maximum yearly yield, depending on site conditions. Near and far shading analysis to be submitted.
- The metallic structure must be installed while maintaining a buffer zone from the parapets of the roofs, for safer circulation and shading prevention
- In order to reduce the pressure on structure and foundation, clear spacing between two adjacent modules shall be sufficient to allow wind passage. The structure shall be designed to allow replacement of any module. The mounting structure shall be grounded properly.
- The mounting structure must comply with the decision number 32 of 2019 of the higher council for urban planning, which states that buildings lower than 15m can install PV panels at a maximum elevation of 3m, and buildings higher than 15m can install PV panels at a maximum elevation of 4.5m (with reference to the roof level, not the roof of the staircase or any room or element on the roof)
- The contractor shall provide civil design notes based on wind loads as per Lebanese Standard NL 137:2020, signed by a civil engineer member of the Order of Engineers and Architects of Beirut or Tripoli.

• The contractor shall provide a declaration of the civil engineer that the solar system does not affect the structural safety of the building The bidder shall provide a copy of the membership card of the civil engineer in the Order of Engineers and Architects of Beirut or Tripoli.

# Solar PV Modules

- From Tier 1 manufacturer, bifacial, at least 550 Wp per module, at least 20% efficiency, anti PID, 144 cells, compliant with the following standards:
  - NL EN 61730-1:2016
  - o NL EN 61730-2:2016
  - o NL EN 61215:2016
  - o or equivalent
  - Performance: More than 80% of initial nominal power rating after 20 years
- The manufacturer should warrant the solar modules to be free from defects and/or failures due to manufacturing or quality of materials, for a period not less than 10 years from the date of sale.
- Proof of compliance shall be submitted. Additionally, with clear certificates and **highlighting** the matching standards in each certificate, I-V curve must be supplied.

# DC Cables for PV Array

- Solar DC cables, copper conductor, halogen-free, double insulated, UV protected and fireproof, with IP67 MC4 connectors. DC cables between the modules and the inverters section has to be sized to limit the total voltage drop in the DC circuit to a value less than 4% of its value at rated power.
- All DC wiring shall be installed so that it is mechanically and electrically sound and neat in appearance.
- DC cables shall be routed from the PV array to the junction boxes, DC protection boxes, or inverters in covered UV resistant cable trays.
- The cable trays shall be hot-dip galvanized and shall be equipped with all the needed brackets, clips, junctions, and accessories for installation and fixation.
- The cutting edges and openings of cable trays and cable conduits should be cold galvanized.
- Induction loops must be avoided when cabling strings; where applicable, it is highly recommended to use the skip-wiring method (also known as leap-frog) instead of the conventional daisy-chain method.
- Compliance of DC cables with IEC 62930:2017 and EN 50618:2014.
- Compliance of MC4 connectors with IEC 61984:2008 and IEC 62852:2014.
- Each string of panels has to be properly labeled with the reference and corresponding polarity, every ten (10) meters and at the input and output of cables trays, junction boxes, DC protection boxes, protection devices, or inverters

# DC Protection Box

The contractor is responsible for the supply and installation of a thermoplastic box for general DC load break of a PV array connected to a single inverter input, with the following requirements:

- Class II
- IP54 for indoor use and IP65 for outdoor use
- Includes general DC disconnect switch easily recognizable and readily accessible for disconnection
- Includes suitable DC fuses on each (+) and (-) polarities of each string of panels
- Includes easily accessible and adequately rated Type 2 SPD with fault signal and thermal disconnection at each DC input of the inverter.
- Wiring inside the box shall be done with unipolar double insulated cables.

- Each component installed within the DC protection box shall be labeled.
- The DC protection box shall include the label "Warning: DC Energized Cables".
- The DC protection box shall be equipped with appropriate safety, functionality, grounding and protection.
- Compliance of DC protection box with IEC 60529 and IEC 62208
- Compliance of circuit breakers with IEC 60947 (Part 1, 2, and 3)
- Compliance of SPD with IEC 61643-11

# **AC Cables**

- Multipolar cables with double insulation (Class II)
- AC cables between the inverters and connection have to be sized to limit the total voltage drop in the AC circuit to a value less than 3% of its value at rated power
- All AC wiring should be installed so that it is mechanically and electrically sound and neat in appearance
- AC cables shall be routed in covered UV resistant cable trays
- The cable trays shall be hot-dip galvanized and shall be equipped with all the needed brackets, clips, junctions, and accessories for installation and fixation
- The cutting edges and openings of cable trays and EMT cable conduits should be cold galvanized
- AC cables shall be labeled with "AC solar power" cables every ten (10) meters and at the input and output of cables trays, junction boxes, AC protection boxes, protection devices, or inverters
- Compliance of AC cables with IEC 60228, IEC 60332-1-2 and IEC 60502-1

# **AC Protection Box**

- The contractor is responsible for the supply and installation of a thermoplastic box for general AC protection box with the following requirements
- Class II
- Includes general AC disconnect switch easily recognizable and readily accessible for disconnection
- Includes adequately rated AC circuit breakers
- Includes adequately rated residual current devices
- Includes easily accessible and adequately rated SPD with fault signal and thermal disconnection shall be installed at the grid connection point, if the distance between the inverter and connection point is less than 10m.
- If the distance between the inverter and connection point is more than 10m, an additional Type 2 SPD with fault signal and thermal disconnection must be installed upstream the AC input of the inverter, as close as possible to the AC output of the inverter.
- The AC protection box shall be equipped with appropriate safety, functionality, grounding and protection
- Compliance of AC protection box with IEC 60529 and IEC 62208
- Compliance of circuit breakers with IEC 60947 (Part 1, 2, and 3)
- Compliance of SPD with IEC 61643-11
- Compliance of RCD with NL IEC 60364-4-41:2003

# Inverters/charges

- Hybrid , AC or DC coupled, with the ability to inject the excess of energy into EDL grid.
- Frequency: 50 Hz +/-0.1% .
- For on-grid operation, the frequency shall be adjusted to operate as per EDL grid requirements.
- Maximum Efficiency: At least 97%
- Number of MPPT: At least 2 per inverter
- Maximum Total Harmonic Distortion: Less than 3%
- Protection Required:
- Anti-Islanding Protection
- DC Reverse Polarity Protection
- Degree At least IP65 if placed outdoor
- Labeling: Each inverter shall be labeled with a sticker showing its reference number

- Compliance with the following standards, or equivalent:
  - o NL EN 62116:2016
  - o NL EN 61427-2:2017
  - NL EN 61427-1:2017 (if off-grid inverter)
  - IEC 61000-3 or equivalent (parts 2,3,4,5,11 and/or 12 to be specified)
  - o IEC 62109-1
  - IEC 62109-2
  - NL EN 62509:2016, or equivalent
  - Two or more inverters can be paralleled to reach the required AC output power
- Minimum Warranty: 5 years

# Battery Bank

- Battery Technology: Lithium (liFePO4)
- The battery storage room should be well ventilated and might require the installation of an exhaust fan depending on site conditions
- Nominal Battery Bank Energy (kWh) As per BOQ
- Roundtrip Efficiency > 95%
- Lifecycle (at 80% DoD, 25°C) > 6000 cycles
- Operating Temperature -20°C to 50°C
- Status Indicators ON/OFF LED Run LED Alarm LED State of Charge LED
- Compliance with the following standards, or equivalent:
  - o IEC 63056
  - IEC 62485-1:2015
  - o IEC 60695-1-11:2014
  - o IEC 61000-6-1
  - o IEC 61000-6-2
  - o IEC 62619
- Able to communicate with the selected inverters and on the inverters' battery manufacturers compliant list (or with a letter from the inverter manufacturer confirming that the battery has been tested with the inverter)
- Protection Devices: Overcurrent and over temperature protection
- The battery shall have at least the rated capacity specified in the BOQ at the C20discharge rate.
- On each battery the following information should be provided:
  - o Manufacturer
  - o Serial number
  - o Rated capacity
  - o Manufacturing date
  - Clear indication of the positive and negative pole
  - $\circ \quad \text{Safety warning} \\$
- Full technical data sheets shall be provided by the Offeror. These must include:
  - Curves showing rated Ah capacity at several discharge rates
  - Cycle life versus depth of discharge
  - Self-discharge characteristics
  - Physical size and weight
  - Details of the materials used in construction.
- Minimum Warranty: 5 years

## **Remote Monitoring**

- Data Readings : A data monitoring system shall be accessible locally and also remotely via the web. The monitoring interface shall provide at least the following readings:
  - o On site measured irradiation data
  - $\circ$   $\,$  DC and AC power  $\,$
  - $\circ \quad \text{DC and AC voltage} \\$
  - $\circ \quad \text{DC and AC current} \quad$
  - Energy production (kWh)
  - Battery state of charge
  - Load flow to and from battery (charged or discharged)
  - o Faults and alarms
- The contractor is responsible for the supply of all the needed components to connect the monitoring system to the internet available in the facility.
- A data access for remote monitoring shall be provided to the owner.
- The operators shall have a free remote access to all the requested data, throughout the lifetime of the project.
- Communication: WIFI/LAN/RS485
- Minimum Warranty: 5 years on equipment, data acquisition software, and remote monitoring.

#### **Documentation and Data Sheets**

#### To be submitted as part of the technical proposal

# **Testing and Commissioning**

The contractor is responsible for obtaining the necessary tools and conducting the testing and commissioning of the solar PV systems with battery storage, including but not limited to the below tests.

If the results of the tests are not compliant with the requirements of the RFP, the contractor is responsible for taking the necessary remedial measures in coordination with PCPM.

- Final Checkouts and Visual Inspection:
  - The site is clean and orderly
  - The installation matches the design documentation
  - The modules and cable routing is done properly
  - The equipment is securely mounted
  - Cut metallic edges and openings are cold galvanized
  - The installations are matched to the manufacturer's specifications and recommendations
  - Warning signs and labels are posted appropriately
  - Safety equipment is installed properly
  - The installations are compliant with standards and best practices
  - Mechanical Systems and Civil Works:
    - $\circ$  ~ Concrete compression test: to be conducted and approved before the continuation of work
    - Pull-out test for 5% of the fixations: to be performed using a motorized pull tester and will be given a pass criteria if the accepted values are 2 times the negative load. It is the contractor's responsibility to assign the pull out test to a specialized expert to carry out the test after the fixation of the mounting structure
    - $\circ$  Make sure that there is no rust or cracks formed in the mounting structure or foundation
    - Make sure that all clamps, nuts, and bolts are secured and tightened as per the manufacturer's recommendations, using a torque meter

- Inclination test of panels using inclinometer, shall result in a consistent tilt angle of panels as per the approved design
- Orientation test of panels using compass, shall result in a consistent orientation angle of panels as per the approved design
- Electrical Systems:
  - DC voltage test and comparison with expected voltage
  - o Polarity test
  - $\circ$   $\;$  AC voltage test at inverter output and compare to inverter datasheet
  - Open circuit test
  - Short circuit test
  - Insulation resistance test
  - $\circ \quad \ \ \, {\rm Ground\ resistance\ test}$
  - Voltage drop tests
  - o Battery bank tests
- Functional Tests
  - Start-up procedure
  - $\circ$  Verify the proper operation of components' connection and disconnection sequences
  - Verify that the inverters and AC modules de-energize their output to utility grid upon loss of grid voltage
  - $\circ$   $\,$  Verify that inverters automatically reconnect to their output to the grid once the voltage has been restored
  - $\circ$   $\;$  Verify the proper grid voltage and frequency to operate inverters
  - $\circ$   $\quad$  Verify that the data communication is working properly
  - $\circ \quad \mbox{Conduct a communication equipment functional test}$
  - o Check validity of all data recording and readings including export, download and data transfer
  - Parallel operation with existing power sources
  - o Battery bank tests

# **Operation and Maintenance**

The contractor is responsible for a 2-year Operation and Maintenance of the system.

Operation & Maintenance (O&M) is a critical service provided in any solar PV project. The O&M obligations during the performance guarantee period should cover the various types of maintenance strategies for a PV plant including yet not limited to the following:

- **Preventive Maintenance** activities are the core element of the maintenance services to a PV plant. It comprises regular visual and physical inspections, as well as verification activities conducted with specific frequencies. It is under the responsibility of the contractor to prepare the task plan until the end of the contract
- **Corrective Maintenance** covers the activities performed by the Maintenance team in order to restore a PV plant system, equipment or component to a status where it can perform the required function. Corrective Maintenance include:
  - o Fault Diagnosis: also called troubleshooting to identify fault cause and localization
  - o Temporary Repair: to restore the required function of a faulty item for a limited time, until a Repair is carried out
  - o Repair: to restore the required function permanently
- •**Predictive maintenance** is a Condition-based maintenance carried out by evaluating typical patterns of significant parameters of plant components degradation. Predictive techniques help to determine the condition of in- service equipment to predict when and whether maintenance should be performed.

with tasks' checklist should be sent to the beneficiary within three weeks of the due date. The intervention of the O&M contractor for corrective maintenance should be as follows:

Fault	Response Times
The entire Facility is not generating Energy (i.e. one hundred percent (100%) generation loss)	Twenty-four [(24)] hours
Thirty percent (30%) or more Energy generation loss	Twenty-four [(24)] hours
Less than thirty percent (30%) Energy generation loss	Thirty-six [(36)] hours

The scheduled maintenance should be carried out at intervals planned in accordance with the manufacturers' recommendations and as required by the equipment warranties.

# Preventive Maintenance

The table below includes the frequency of the preventive maintenance activities that must be carried out.

ltem	Preventive Maintenance Service Description	Frequency
PV Arra	ys	
1	Visual inspection and cleaning recommendation to the beneficiary) of PV system's general site conditions and the PV system, PV strings, electrical equipment, mounting structure, shading, vegetation, damage, erosion, corrosion, and discolored panels and cleaning / recommendations to the beneficiary	Every 6 months
2	Visual inspection and correction of PV system for loose electrical connections and ground connections	Every 6 months
3	Clean PV modules with plain de-mineralized water with mild detergent recommended by the manufacturer to remove any dirt or stains from the PV module then dry it with a dry cloth. DO NOT use high-pressure water, chemicals, corrosive solvents, brushes, or hard objects for cleaning	Annual or when required (twice in dry seasons)
4	Measure open-circuit voltage (Voc), Short Circuit Current (Isc) of PV strings, Maximum Power Point (Vmp) and (Imp), and DC operating Power	Annual
5	Check the MC4 Connectors between modules and replace damaged ones	When required
6	Calibrate controllers and sensors	When required

Inverter		
1	Inspect inverter housing or shelter for physical damage maintenance if required	Annual
2	Clean inverter cabinet air vents	Annual
3	Clean and change inverter air filters, if present, per manufacturer's warranty requirements	Annual or when required
4	Clean/remove dust from inverter heat sinks per manufacturer's warranty requirements	Annual
5	Check inverter fan motor	Annually
6	Check inverter data acquisition card (in close coordination with the manufacturer)	Annually
7	Turn off and on logging and communications to ensure they are communicating and ensure battery backups are working	Annual
8	Check the AC cable for any loose connection at the output of the inverter and tighten again the connection	Annual
9	Check the DC SPD for burnt fuses inside or near the inverter	seasonal
10	Collect and inspect inverter logs (alarms and faults logs)	Monthly (remotely)
11	Check inverter's well behavior with safe fallback settings	Monthly (remotely)
12	Perform thermal imaging to test electrical connections for Inverters	Every 6 months
Mountin	g Structure	
1	Inspect mounting structure for abnormal movement and tighten as necessary using torque meter	Annual
2	Inspect roof penetrations to ensure sealant is applied properly and not degrading	Annual
3	Check metallic structure for signs of corrosion, remove rust, and re- paint if necessary	Annual
Batterie	5	
1	Inspecting and cleaning battery racks, cases, trays, and terminations	Every 6 months

2	Inspecting battery disconnects, overcurrent devices, and wiring systems	Every 6 months
3	Checking of all terminals for corrosion and proper torque	Every 6 months
4	Check battery open-circuit voltage	Every 6 months
5	Voltage of the complete battery system (on float charge).	Annually
6	Check battery room for proper ventilation and room temperature as per manufacturer's recommendation	Annual (summer)
7	Check the battery number of cycles completed on the battery monitoring or management system	Every 6 months
8	Check with the owner if any new loads have been added and report as this will affect the system's autonomy	Annual
DC and A	AC Wiring Systems	
1	Open each combiner box and check that no fuses have blown and that all electrical connections are tight. Check for corrosion or intrusion of water or insects. Seal boxes if required.	Annual
2	Inspect combiner boxes and tighten connections to manufacturer's torque specification. Report broken terminal blocks	Annual
3	Look for any signs of intrusion by pests such as insects and rodents. Remove any nests from electrical boxes (junction boxes, pull boxes, combiner boxes) or around the array.	Annual
4	Check proper position of DC disconnect switches and fuses and replace failed fuses.	Annual or when required
5	Check the AC disconnect box and the position of AC disconnect switches and breakers	Annual
6	Inspect cabling for signs of cracks, defects, pulling out of connections, overheating, short or open circuits, and ground faults	Annual
7	Test the disconnect switches to ensure they are not jammed	Annual
8	Test system grounding	Annual
9	Earth Continuity test to check if there is a good connection between the Earth pin on the plug and the case of the appliance	Annually
10	Insulation resistance Riso (resistance in ohms of wires, cables to guard against electric shocks and avoid equipment damage from accidental discharges)	Annually

11	Check the SPDs for any blown fuses	In inspe	every ection	site
12	Perform thermal imaging to test electrical connections for /String Box/AC combiners etc	Every	y 6 month	ıs

Monitoring System, and data logging			
1	Testing of monitoring system communication	Annual or when required	
2	Check internet connectivity and data upload on the web portal	Monthly, online monitoring	
PV Syster	n Documentation		
1	Document details of preventive maintenance work, such as condition observations, work performed, meter readings, and system testing results	As performed	
2	Include non-conformance reports to identify potential short-term and long-term power production issues	Annual	
3	Update as-built drawings if necessary	When required	

# **Corrective Maintenance**

Corrective maintenance is carried out in response to failures. As such, the key parameter when considering unscheduled maintenance is diagnosis, speed of response and repair time.

The common unscheduled maintenance requirements include but not limited to:

- Addressing inverters fails and faults
- Tightening cable connections that have loosened
- Replacing blown fuses
- Repairing lightning damage and surge arresters
- Repairing equipment damaged by intruders or during module cleaning
- Rectifying monitoring system faults
- Repairing mounting structure faults

#### Spare Part Management

In order to facilitate a rapid response considering the current situation the contractor is requested to account for additional critical equipment:

- Additional 2% of total PV panel
- Additional 10 additional DC fuses per site
- Additional 2 DC Surge Arrestors per site
- Additional 2 AC Surge Arrestors per site

The spare equipment is to be kept with the beneficiary.

#### **3.2. TERMS OF EXECUTION**

#### Timeframe

Timeframe: The Start date of the contract is immediate. The overall term of execution of this contract is spread over 2 months, effective from contract signature date. This includes the delivery of the equipment to the warehouse (in or near the indicated regions) accounted for by the Contractor, then to the site, the installation of the equipment, the testing of the system and the delivery of technical documentation, specifications and operation and maintenance manuals of the installed systems to the client/beneficiary. The awarded party must comply with the terms of reference of this invitation to bid, and to have all deliverables completed and approved before/by the last working day of the contract period. Extensions, if deemed necessary, can only be granted through mutual agreement between the parties.

#### **Shipment and Storage**

The awarded party is responsible for clearing delivered equipment from Beirut port. The awarded party is also responsible for ensuring an adequate interim storage space for all delivered equipment.

#### **Branding Display**

All labelling related to the equipment's brand name, model or other, must be highly discreet and unobtrusive, and readable only from very near distances of less than 1m.

#### **Replacement and Spare Parts**

All components that maybe replaced during the lifetime of the product need to have spare parts available with the Contractor. The spare parts need to be available for the equivalent lifetime of the fixtures after the date of installation. Equivalent parts replacing the installed item can be proposed for the customer's approval.

#### Guarantees

The supplied installations shall be tested, commissioned, and handed over complete and in perfect operating condition and shall be covered under a defect's liability (parts and labour) for a minimum period of 24 months from the date of commissioning. This warranty covers all manufacturer / work-person-ship defects only.

Furthermore, all main components shall also have an individual warranty of defects in materials and workmanship and an operation and performance guarantee backed by the manufacturer for a minimum period as specified below:

- PV Modules: overall 25 years of which 10 years on material and manufacturing faults and 25 years 80% power output warranty
- Inverters: 5 years
- Battery and BMS: 5 years
- Mounting structure: 10 years.
- Waterproofing : 10 years

It is understood that any alteration made to the product without the prior written approval of the Contractor will automatically cancel the remaining warranty period on the affected part.

The contractor shall conduct preventive, corrective and predictive maintenance for 2 years based on the contract signed with the beneficiaries and as detailed in section Operation and Maintenance section.

#### **General Conditions**

- The Contractor shall state the manufacturers guarantee on the different components as well as local representation available for service and technical support.
- The Contractor shall secure a team of specialized engineers, technicians and skilled workers qualified to carry out the requested tasks successfully. The number of teams shall be sufficient to carry out the required works within the specified time frame of the contract.

- PCPM has the right to decline the Contractor's team if it proved to be technically unqualified. The Contractor then should secure a replacement within 48 hours from notification and should remain bound to the schedule of delivery.
- The Contractor shall visit the selected site assigned in order to inspect them prior to the installation and to prepare an installation plan to collate the amount of work to be done in each facility.
- As soon as the Contractor receives PCPM's instruction to initiate the work, the Contractor has to secure a prior
  written and signed approval on all the procured materials (solar modules, inverters, cabling, accessories, and
  others) that will be used during the installation and has to obtain prior approval of PCPM on the installation plan
  after coordination with the User/Beneficiary in order to facilitate the access of the Contractor's team.
- The systems and components delivered to the selected site shall be considered under the Contractor's responsibility until the final hand-over.
- The Contractor should remove the waste of works including the trash and dirt and dispose of it according to environmental regulations when applicable. The site should be returned to initial state of cleanliness.

ltem No	DESCRIPTION	UNIT	QTY	RATE USD	AMOUNT USD
	Unit rates here below shall include all required equipment, accessories and services to comply with specifications and drawings; even if not mentioned in the here below descriptions.				
	The contract price is a <b>lump Sum price</b> . Quantities mentioned are indicative. Contractor shall verify exact quantities . Here below unit rates may be used for Variation Orders evaluation(if any)				
1	Solar PV Array				
1,1	PV Array complete with installation, wiring (with earth connection), accessories and installation as per drawings and specifications	КWр	11		
2	Metallic support Structure				
2,1	Supply, install, test and commission of a roof mounted, metallic support structures (as per attached design), with all needed accessories for a complete installation, including site clearing, concrete slabs, metallic structure installation. <u>The contractor shall</u> submit for approval a Wind/Snow load study for the proposed metal structure final design including a metal structure load simulation using specialized software and calculation notes signed by a qualified Civil Engineer. The PV layout shown on the tender is for information purposes only.	LS	1		
3	Hybrid Solar Inverter				
3,2	Supply, install, test and commission of <b>10 kW Single phase</b> hybrid inverter(s) and monitoring system as per technical specifications and drawings complete with configuration accessories, wiring (with earth connection) and installation (multiple inverters can be parallelled).	Pcs	1		

# 5. BOQ

# Bill of quantities for Sed el Baouchrieh Civil Defense Center

#### Breakdown of the Lump Sum

4	Battery Bank				
4.1	LiFePO4 Battery bank with BMS complete with configuration	kWh	20		
	accessories, rack, wiring and installation.	KVVII	20	<u> </u>	
5	Cable Tray	1			
5,1	Supply, install, test and commission of 10 cm width Hot dip galvanized covered cable tray for DC cables, AC cables and connections inside the technical Space as per technical specifications and drawings	Lm	30		
6	DC Combiner / protection				
	Supply, install, test and commission of waterproof IP65 metallic enclosure DC combiner Box as per technical specifications and drawings including:				1
	PV Fuses for positive and negative polarities				
	PV Fuses holders				
	DC Surge arrester				
6,1	Cable glands for the DC cable exiting the combiner box	LS	1		
	MC4 connectors, for direct clip-in/clip-out connection of the PV				
	solar DC cables to the DC combiners				
	Bus bar on positive and posative polarities				
-					
/	DC Solar Cables				
7,1	technical specifications and drawings	LS	1		
8	AC Cables	1			
8,1	Supply, install, test and commission of AC power cables 4x16+16mm2 as per technical specifications and drawings	Lm	40		
9	Technical Equipment Room Balance Of System				
9,1	Supply, install, test and commission of all necessary components for a fully functional and safe system operation. Following is a list of main components and requriements only: Supply and install 2 x Manual Transfer Switches (rated 2x40 amps) including necessary AC cabling and circuit breakers Supply and install 2 x Automatic Transfer Switches (rated 2x40 amps) including necessary AC cabling and circuit breakers Supply and install 2 x Automatic Transfer Switches (rated 2x40 amps) including necessary AC cabling and circuit breakers Supply and install all required accessories and protection devices for inverters and battery pack. The bidder has to make sure to include all necessary equipment relevant to his chosen technical room design.	LS	1		
10	Earthing and Lightning Protection System				
10,1	Supply, install, test and commission of an earthing and Lightning Protection System, including all elements and connections as specified.	LS	1		
11	Spare parts				
11,1	Solar PV modules	Pcs	1		]

11,2	additional DC fuses ditional 2 DC Surge Arrestors ditional 2 AC Surge Arrestors		1		
12	Miscellaneous works				
12,1	Supply and install a double-glazed aluminum sliding window system for balcony use, including all necessary hardware, seals, and locking mechanisms. The system shall feature high-quality aluminum frames with smooth sliding tracks, and durable weatherproofing to ensure energy efficiency and longevity.	m²	9		
12,2	Rehabilitate the all existing Distribution Boards, including the reconfiguration and installation of existing electrical components into a new panel. The scope includes careful removal, inspection, and reinstallation of circuit breakers, busbars, and metering devices, with the addition of new wiring and accessories if needed. Ensure compliance with current electrical standards and safety regulations. Complete with testing, commissioning, and labeling of all circuits.	Units	2		
12,3	Identify, secure, and properly route stray cables to ensure orderly and safe installation. The scope includes bundling, labeling, and fastening cables using appropriate cable management accessories such as ties, conduits, or cable trays. Replace any damaged or non-compliant cables as needed, ensuring all work adheres to current electrical standards and safety regulations.	LS	1		
12,4	Supply and install high-performance waterproofing membrane on the concrete roof surface, including surface preparation, application of primer, and installation of a multi-layer membrane system with reinforcement. The work includes removal of the existing old waterproofing, ensuring full protection and waterproofing integrity before the installation of solar panels. Specifications: Material: Bitumen, polyurethane, or synthetic rubber-based membrane. Thickness: Minimum 1.5 mm to 2.0 mm after curing. Reinforcement: Fiberglass or polyester fabric embedded within the membrane. UV Resistance: UV-stabilized membrane. Temperature Resistance: -20°C to +90°C. Chemical Resistance: Resistant to acids, alkalis, and salts. Application Process: Includes cleaning, surface preparation, primer application, membrane installation, curing, and inspection. Testing: Water ponding or electronic leak detection test to ensure waterproofing integrity. Warranty: Minimum 10 years against defects in materials and workmanship.	m²	180		
13	Lighting upgrade	1	1	1	1

13,1	Supply and install IP 56 LED Street light, 70 watts, SMD type, >100 Im/w efficiency, 4000 K, including necessary wiring, mounting brackets, photocell, in addition to connecting existing LED projectors in the center to the same control.	Pcs	2			
14	Testing & commissioning / O&M manuals and training					
14,1	Testing & commissioning to be executed as described in the specifications, provide as built drawings and O&M manuals.	LS	1			
	VAT					
	TOTAL TTC					

Say Total TTC Lump Sum price (in Letters)

SECTION 6: RETURNABLE BIDDING FORMS / CHECKLIST

This form serves as a checklist for preparation of your Proposal. Please complete the Returnable Proposal ding Forms in accordance with the instructions in the forms and return them as part of your Proposal submission. No alteration to format of forms shall be permitted and no substitution shall be accepted.

Before submitting your Proposal, please ensure compliance with the Proposal Submission instructions of the BDS 22.

Have	you duly completed all the Returnable Bidding Forms?	
-	Form A: Proposal Submission Form	
-	Form B: Bidder Information Form	
-	Form C: Qualification Form	
-	Form D: Format of Technical Proposal /Bill of Quantities	
•	Form E: Format for Financial proposal	
Have evalu	you provided the required documents to establish compliance with the ation criteria in Section 4?	

Name of Bidder:	[Insert Name of Bidder]	Date:	Select date
RFP reference:	7/PA/D/2024		

We, the undersigned, offer to supply the goods and related services required for [Insert Title of goods and services] in accordance with your Request for Proposal No. 7/PA/D/2024 [Insert RFP Reference Number] and our Proposal. We hereby submit our Proposal, which includes this Technical Proposal and Price Schedule. We declare that our Proposal is in compliance with all requirements of the RFP and we accept all terms and conditions specified in the RFP.

Our attached Price Schedule is for the sum of [Insert amount in words and figures and indicate currency].

We hereby declare that our firm:

- a) is not under procurement prohibition by the United Nations, including but not limited to prohibitions derived from the Compendium of United Nations Security Council Sanctions Lists;
- b) have not been suspended, debarred, sanctioned or otherwise identified as ineligible by any UN Organization or the World Bank Group or any other international Organization;
- c) have no conflict of interest in accordance with Instruction to Bidders Clause 4;
- d) do not employ, or anticipate employing, any person(s) who is, or has been a PCPM staff member within the last year, if said PCPM staff member has or had prior professional dealings with our firm in his/her capacity as PCPM staff member within the last three years of service with the PCPM;
- e) have not declared bankruptcy, are not involved in bankruptcy or receivership proceedings, and there is no judgment or pending legal action against them that could impair their operations in the foreseeable future;
- f) undertake not to engage in proscribed practices, including but not limited to corruption, fraud, coercion, collusion, obstruction, or any other unethical practice, and to conduct business in a manner that averts any financial, operational, reputational or other undue risk to PCPM.

We declare that all the information and statements made in this Proposal are true and we accept that any misinterpretation or misrepresentation contained in this Proposal may lead to our disqualification and/or sanctioning by the PCPM.

We offer to supply the goods and related services in conformity with the Bidding documents, and in accordance with the Schedule of Requirements and Technical Specifications.

Our Proposal shall be valid and remain binding upon us for the period specified in the Bid Data Sheet.

We understand and recognize that you are not bound to accept any Proposal you receive.

I, the undersigned, certify that I am duly authorized by [Insert Name of Bidder] to sign this Proposal and bind it should PCPM accept this Proposal.

Name:	
Title:	
Date:	
Signature:	

[Stamp with official stamp of the Bidder]

FORM B: BIDDER INFORMATION FORM

Legal name of Bidder	[Complete]
Legal address	[Complete]
Year of registration	[Complete]
Bidder's Authorized Representative Information	Name and Title: [Complete] Telephone numbers: [Complete] Email: [Complete]
Countries of operation	[Complete]
No. of full-time employees	[Complete]
<b>Quality Assurance Certification (e.g.</b> <b>ISO 9000 or Equivalent)</b> ( <i>If yes, provide</i> <i>a Copy of the valid Certificate):</i>	[Complete]
<b>Does your Company hold any</b> <b>accreditation such as ISO 14001 or ISO</b> <b>14064 or equivalent related to the</b> <b>environment?</b> ( <i>If yes, provide a Copy of</i> <i>the valid Certificate</i> ):	[Complete]
Contact person that PCPM may contact for requests for clarifications during Proposal evaluation	Name and Title: [Complete] Telephone numbers: [Complete] Email: [Complete]
Please attach the following documents:	As per section 4, required documents
	•

Name:

Signature: \_\_\_\_\_

[Stamp with official stamp of the Bidder]

\_\_\_\_\_

#### FORM C: ELIGIBILITY AND QUALIFICATION FORM

Name of Bidder:	[Insert Name of Bidder]	Date:	Select date
RFP reference:	7/PA/D/2024		

## **History of Non- Performing Contracts**

□Non-perfo	Non-performing contracts did not occur during the last 3 years						
□Contract(	□Contract(s) not performed in the last 3 years						
Year	Non- performed portion of contract	Contract Identification	Total Contract Amount (current value in US\$)				
		Name of Client: Address of Client: Reason(s) for non-performance:					

#### Litigation History (including pending litigation)

□No litigation history for the last 3 years								
□Litigation	History as indicated be	elow						
Year of	Amount in dispute	Contract Identification	Total Contract Amount					
dispute	(in US\$)		(current value in US\$)					
		Name of Client:						
		Address of Client:						
		Matter in dispute:						
	Party who initiated the dispute:							
	Status of dispute:							
		Party awarded if resolved:						

#### **Previous Relevant Sale**

Please list a minimum of 5 contracts of similar value, nature and complexity implemented over the last 5 years.

List only those sales for which the Bidder was legally contracted or sub-contracted by the Client as a company. The Bidder should be prepared to substantiate the claimed experience by presenting copies of relevant documents and references.

Project name & Country of Assignment	Client & Reference Contact Details	Contract Value	Period of activity and status	Types of activities undertaken

Bidders may also attach their own Project Data Sheets with more details for assignments above.

□Attached are the Statements of Satisfactory Performance from the Top 3 (three) Clients or more.

# **Financial Standing**

Annual Turnover for the last 5 years	Year	USD
	Year	USD
Latest Credit Rating (if any), indicate the source		

Name:

Signature:

[Stamp with official stamp of the Bidder]

## FORM D: FORMAT OF TECHNICAL PROPOSAL

Name of Bidder:	[Insert Name of Bidder]	Date:	Select date
RFP reference:	7/PA/D/2024		

# Add format / info to be inserted in technical proposal

Name:

Signature: \_\_\_\_\_\_

[Stamp with official stamp of the Bidder]

\_\_\_\_\_

#### FORM E: FINANCIAL PROPOSAL

Name of Bidder:	[Insert Name of Bidder]	Date:	Select date
RFP reference:	7/PA/D/2024		

The Bidder is required to prepare the Price Schedule following the below format. The Price Schedule must include a detailed cost breakdown of all goods and related services to be provided. Separate figures must be provided for each functional grouping or category, if any.

# Currency of the Proposal : USD

#### **Price Schedule**

Item #	Description	UOM	Quantity	Unit Price	Total Price
				Warranty	
After Sales					
VAT					
				GRAND TOTAL	

Name of Bidder:	
Authorised signature:	 
Name of authorised signatory:	 
Functional Title:	 

[Stamp with official stamp of the Bidder]

[insert: address and email address]