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INVITATION TO BID

- **LOT 1:** Providing electric power and lighting for some medical equipment generated from solar energy at Al-Nairab Hospital in addition to a UPS system at Al-Razi Hospital in Aleppo.
- **LOT 2:** Providing hot water, via solar water heating systems, at two Aleppo hospitals (Al-Nairab and Al-Razi).
- **LOT3:** Rehabilitating part of the roof of Al-Razi Hospital.

ITB No.: UNDP-SYR-ITB-110-18

Country: Syrian Arab Republic

Issued on: 1 November 2018

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Section 1. Letter of Invitation

The United Nations Development Programme (UNDP) hereby invites you to submit a Bid to this Invitation to Bid (ITB) for the above-referenced subject.

This ITB 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: Schedule of Requirements and Technical Specifications
- Section 6: Returnable Bidding Forms
 - Form A: Bid Submission Form
 - Form B: Bidder Information Form
 - Form C: Joint Venture/Consortium/Association Information Form
 - Form D: Qualification Form
 - Form E: Format of Technical Bid
 - Form F: Price Schedule
 - Form G: Form of Bid Security

If you are interested in submitting a Bid in response to this ITB, please prepare your Bid in accordance with the requirements and procedure as set out in this ITB and submit it by the Deadline for Submission of Bids set out in Bid Data Sheet.

Please acknowledge receipt of this ITB by sending an email to Syria.procurement@undp.org, indicating whether you intend to submit a Bid or otherwise. You may also utilize the "Accept Invitation" function in eTendering system, where applicable. This will enable you to receive amendments or updates to the ITB. Should you require further clarifications, kindly communicate with the contact person/s identified in the attached Data Sheet as the focal point for queries on this ITB.


UNDP looks forward to receiving your Bid and thank you in advance for your interest in UNDP procurement opportunities.

Issued by



Name: Hanan Al Ali
Title: Procurement Associate
Date: **November 1, 2018**

Approved by:



Name: Mirvat Hammoud
Title: Head of Procurement Team
Date: **November 1, 2018**

Section 2. Instruction to Bidders

GENERAL PROVISIONS

1. Introduction	<p>1.1 Bidders shall adhere to all the requirements of this ITB, including any amendments made in writing by UNDP. This ITB is conducted in accordance with the UNDP Programme and Operations Policies and Procedures (POPP) on Contracts and Procurement which can be accessed at https://popp.undp.org/SitePages/POPPBSUnit.aspx?TermID=254a9f96-b883-476a-8ef8-e81f93a2b38d</p> <p>1.2 Any Bid submitted will be regarded as an offer by the Bidder and does not constitute or imply the acceptance of the Bid by UNDP. UNDP is under no obligation to award a contract to any Bidder as a result of this ITB.</p> <p>1.3 UNDP reserves the right to cancel the procurement process at any stage without any liability of any kind for UNDP, upon notice to the bidders or publication of cancellation notice on UNDP website.</p> <p>1.4 As part of the bid, it is desired that the Bidder registers at the United Nations Global Marketplace (UNGM) website (www.ungm.org). The Bidder may still submit a bid even if not registered with the UNGM. However, if the Bidder is selected for contract award, the Bidder must register on the UNGM prior to contract signature.</p>
2. Fraud & Corruption, Gifts and Hospitality	<p>2.1 UNDP strictly enforces a policy of zero tolerance on proscribed practices, including fraud, corruption, collusion, unethical or unprofessional practices, and obstruction of UNDP vendors and requires all bidders/vendors observe the highest standard of ethics during the procurement process and contract implementation. UNDP's Anti-Fraud Policy can be found at http://www.undp.org/content/undp/en/home/operations/accountability/audit/office_of_audit_andinvestigation.html#anti</p> <p>2.2 Bidders/vendors shall not offer gifts or hospitality of any kind to UNDP staff members including recreational trips to sporting or cultural events, theme parks or offers of holidays, transportation, or invitations to extravagant lunches or dinners.</p> <p>2.3 In pursuance of this policy, UNDP:</p> <p>(a) Shall reject a bid if it determines that the selected bidder has engaged in any corrupt or fraudulent practices in competing for the contract in question;</p> <p>(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 corrupt or fraudulent practices in competing for, or in executing a UNDP contract.</p> <p>2.4 All Bidders must adhere to the UN Supplier Code of Conduct, which may be found at http://www.un.org/depts/ptd/pdf/conduct_english.pdf</p>
3. Eligibility	<p>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 UNDP whether they are subject to any sanction or temporary suspension imposed by</p>

	<p>these organizations.</p> <p>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 UNDP.</p>
4. Conflict of Interests	<p>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:</p> <ul style="list-style-type: none"> a) Are or have been associated in the past, with a firm or any of its affiliates which have been engaged by UNDP 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; b) Were involved in the preparation and/or design of the programme/project related to the goods and/or services requested under this ITB; or c) Are found to be in conflict for any other reason, as may be established by, or at the discretion of UNDP. <p>4.2 In the event of any uncertainty in the interpretation of a potential conflict of interest, Bidders must disclose to UNDP, and seek UNDP's confirmation on whether or not such conflict exists.</p> <p>4.3 Similarly, the Bidders must disclose in their Bid their knowledge of the following:</p> <ul style="list-style-type: none"> a) If the owners, part-owners, officers, directors, controlling shareholders, of the bidding entity or key personnel who are family members of UNDP staff involved in the procurement functions and/or the Government of the country or any Implementing Partner receiving goods and/or services under this ITB; and b) All other circumstances that could potentially lead to actual or perceived conflict of interest, collusion or unfair competition practices. <p>Failure to disclose such an information may result in the rejection of the Bid or Bids affected by the non-disclosure.</p> <p>4.4 The eligibility of Bidders that are wholly or partly owned by the Government shall be subject to UNDP's further evaluation and review of various factors such as being registered, operated and managed as an independent business entity, the extent of Government ownership/share, receipt of subsidies, mandate and access to information in relation to this ITB, among others. Conditions that may lead to undue advantage against other Bidders may result in the eventual rejection of the Bid.</p>
B. PREPARATION OF BIDS	
5. General Considerations	<p>5.1 In preparing the Bid, the Bidder is expected to examine the ITB in detail. Material deficiencies in providing the information requested in the ITB may result in rejection of the Bid.</p> <p>5.2 The Bidder will not be permitted to take advantage of any errors or omissions in the ITB. Should such errors or omissions be discovered, the Bidder must notify the UNDP accordingly.</p>

6. Cost of Preparation of Bid	6.1 The Bidder shall bear all costs related to the preparation and/or submission of the Bid, regardless of whether its Bid is selected or not. UNDP shall not be responsible or liable for those costs, regardless of the conduct or outcome of the procurement process.
7. Language	7.1 The Bid, as well as any and all related correspondence exchanged by the Bidder and UNDP, shall be written in the language (s) specified in the BDS.
8. Documents Comprising the Bid	8.1 The Bid shall comprise of the following documents and related forms which details are provided in the BDS: <ul style="list-style-type: none"> a) Documents Establishing the Eligibility and Qualifications of the Bidder; b) Technical Bid; c) Price Schedule; d) Bid Security, if required by BDS; e) Any attachments and/or appendices to the Bid.
9. Documents Establishing the Eligibility and Qualifications of the 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 UNDP's satisfaction.
10. Technical Bid Format and Content	10.1 The Bidder is required to submit a Technical Bid using the Standard Forms and templates provided in Section 6 of the ITB. 10.2 Samples of items, when required as per Section 5, shall be provided within the time specified and unless otherwise specified by the Purchaser, at no expense to the UNDP. If not destroyed by testing, samples will be returned at Bidder's request and expense, unless otherwise specified. 10.3 When applicable and required as per Section 5, the Bidder shall describe the necessary training programme available for the maintenance and operation of the equipment offered as well as the cost to the UNDP. Unless otherwise specified, such training as well as training materials shall be provided in the language of the Bid as specified in the BDS. 10.4 When applicable and required as per Section 5, the Bidder shall certify the availability of spare parts for a period of at least five (5) years from date of delivery, or as otherwise specified in this ITB.
11. Price Schedule	11.1 The Price Schedule shall be prepared using the Form provided in Section 6 of the ITB and taking into consideration the requirements in the ITB. 11.2 Any requirement described in the Technical Bid but not priced in the Price Schedule, shall be assumed to be included in the prices of other activities or items, as well as in the final total price.
12. Bid Security	12.1 A Bid Security, if required by BDS, shall be provided in the amount and form indicated in the BDS. The Bid Security shall be valid for a minimum of thirty (30) days after the final date of validity of the Bid. 12.2 The Bid Security shall be included along with the Bid. If Bid Security is required by the ITB but is not found in the Bid, the offer shall be rejected.

	<p>12.3 If the Bid Security amount or its validity period is found to be less than what is required by UNDP, UNDP shall reject the Bid.</p> <p>12.4 In the event an electronic submission is allowed in the BDS, Bidders shall include a copy of the Bid Security in their bid and the original of the Bid Security must be sent via courier or hand delivery as per the instructions in BDS.</p> <p>12.5 The Bid Security may be forfeited by UNDP, and the Bid rejected, in the event of any, or combination, of the following conditions:</p> <ul style="list-style-type: none"> a) If the Bidder withdraws its offer during the period of the Bid Validity specified in the BDS, or; b) In the event the successful Bidder fails: <ul style="list-style-type: none"> i. to sign the Contract after UNDP has issued an award; or ii. to furnish the Performance Security, insurances, or other documents that UNDP may require as a condition precedent to the effectivity of the contract that may be awarded to the Bidder.
13. Currencies	<p>13.1 All prices shall be quoted in the currency or currencies indicated in the BDS. Where Bids are quoted in different currencies, for the purposes of comparison of all Bids:</p> <ul style="list-style-type: none"> a) UNDP will convert the currency quoted in the Bid into the UNDP preferred currency, in accordance with the prevailing UN operational rate of exchange on the last day of submission of Bids; and b) In the event that UNDP selects a Bid for award that is quoted in a currency different from the preferred currency in the BDS, UNDP shall reserve the right to award the contract in the currency of UNDP's preference, using the conversion method specified above.
14. Joint Venture, Consortium or Association	<p>14.1 If the Bidder is a group of legal entities that will form or have formed a Joint Venture (JV), Consortium or Association for the Bid, they shall confirm in their Bid that : (i) they have designated one party to act as a lead entity, duly vested with authority to legally bind the members of the JV, Consortium or Association jointly and severally, which shall be evidenced by a duly notarized Agreement among the legal entities, and submitted with the Bid; and (ii) if they are awarded the contract, the contract shall be entered into, by and between UNDP and the designated lead entity, who shall be acting for and on behalf of all the member entities comprising the joint venture.</p> <p>14.2 After the Deadline for Submission of Bid, the lead entity identified to represent the JV, Consortium or Association shall not be altered without the prior written consent of UNDP.</p> <p>14.3 The lead entity and the member entities of the JV, Consortium or Association shall abide by the provisions of Clause 9 herein in respect of submitting only one Bid.</p> <p>14.4 The description of the organization of the JV, Consortium or Association must clearly define the expected role of each of the entities in the joint venture in delivering the requirements of the ITB, both in the Bid and the JV, Consortium or Association Agreement. All entities that comprise the JV, Consortium or Association shall be subject to the eligibility and qualification assessment by UNDP.</p> <p>14.5 A JV, Consortium or Association in presenting its track record and experience</p>

	<p>should clearly differentiate between:</p> <ul style="list-style-type: none"> a) Those that were undertaken together by the JV, Consortium or Association; and b) Those that were undertaken by the individual entities of the JV, Consortium or Association. <p>14.6 Previous contracts completed by individual experts working privately but who are permanently or were temporarily associated with any of the member firms cannot be claimed as the experience of the JV, Consortium or Association or those of its members, but should only be claimed by the individual experts themselves in their presentation of their individual credentials</p> <p>14.7 JV, Consortium or Associations are encouraged for high value, multi-sectoral requirements when the spectrum of expertise and resources required may not be available within one firm.</p>
15. Only One Bid	<p>15.1 The Bidder (including the individual members of any Joint Venture) shall submit only one Bid, either in its own name or as part of a Joint Venture.</p> <p>15.2 Bids submitted by two (2) or more Bidders shall all be rejected if they are found to have any of the following:</p> <ul style="list-style-type: none"> a) they have at least one controlling partner, director or shareholder in common; or b) any one of them receive or have received any direct or indirect subsidy from the other/s; or c) they have the same legal representative for purposes of this ITB; or 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 Bid of another Bidder regarding this ITB process; e) they are subcontractors to each other's Bid, or a subcontractor to one Bid also submits another Bid under its name as lead Bidder; or some key personnel proposed to be in the team of one Bidder participates in more than one Bid received for this ITB process. This condition relating to the personnel, does not apply to subcontractors being included in more than one Bid.
16. Bid Validity Period	<p>16.1 Bids shall remain valid for the period specified in the BDS, commencing on the Deadline for Submission of Bids. A Bid valid for a shorter period may be rejected by UNDP and rendered non-responsive.</p> <p>16.2 During the Bid validity period, the Bidder shall maintain its original Bid without any change, including the availability of the Key Personnel, the proposed rates and the total price.</p>
17. Extension of Bid Validity Period	<p>17.1 In exceptional circumstances, prior to the expiration of the Bid validity period, UNDP may request Bidders to extend the period of validity of their Bids. The request and the responses shall be made in writing, and shall be considered integral to the Bid.</p> <p>17.2 If the Bidder agrees to extend the validity of its Bid, it shall be done without any change to the original Bid.</p> <p>17.3 The Bidder has the right to refuse to extend the validity of its Bid, in which case, the Bid shall not be further evaluated.</p>

<p>18. Clarification of Bid (from the Bidders)</p>	<p>18.1 Bidders may request clarifications on any of the ITB 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 UNDP staff member, UNDP shall have no obligation to respond or confirm that the query was officially received.</p> <p>18.2 UNDP will provide the responses to clarifications through the method specified in the BDS.</p> <p>18.3 UNDP 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 UNDP to extend the submission date of the Bids, unless UNDP deems that such an extension is justified and necessary.</p>
<p>19. Amendment of Bids</p>	<p>19.1 At any time prior to the deadline of Bid submission, UNDP may for any reason, such as in response to a clarification requested by a Bidder, modify the ITB in the form of an amendment to the ITB. Amendments will be made available to all prospective bidders.</p> <p>19.2 If the amendment is substantial, UNDP may extend the Deadline for submission of Bid to give the Bidders reasonable time to incorporate the amendment into their Bids.</p>
<p>20. Alternative Bids</p>	<p>20.1 Unless otherwise specified in the BDS, alternative Bids shall not be considered. If submission of alternative Bid is allowed by BDS, a Bidder may submit an alternative Bid, but only if it also submits a Bid conforming to the ITB requirements. Where the conditions for its acceptance are met, or justifications are clearly established, UNDP reserves the right to award a contract based on an alternative Bid.</p> <p>20.2 If multiple/alternative bids are being submitted, they must be clearly marked as "Main Bid" and "Alternative Bid"</p>
<p>21. Pre-Bid Conference</p>	<p>21.1 When appropriate, a pre-bid conference will be conducted at the date, time and location specified in the BDS. All Bidders are encouraged to attend. Non-attendance, however, shall not result in disqualification of an interested Bidder. Minutes of the Bidder's conference will be disseminated on the procurement website and shared by email or on the e-Tendering platform as specified in the BDS. No verbal statement made during the conference shall modify the terms and conditions of the ITB, unless specifically incorporated in the Minutes of the Bidder's Conference or issued/posted as an amendment to ITB.</p>

C. SUBMISSION AND OPENING OF BIDS

22. Submission	<p>22.1 The Bidder shall submit a duly signed and complete Bid comprising the documents and forms in accordance with requirements in the BDS. The Price Schedule shall be submitted together with the Technical Bid. Bid can be delivered either personally, by courier, or by electronic method of transmission as specified in the BDS.</p> <p>22.2 The Bid 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 Bid.</p> <p>22.3 Bidders must be aware that the mere act of submission of a Bid, in and of itself, implies that the Bidder fully accepts the UNDP General Contract Terms and Conditions.</p>
Hard copy (manual) submission	<p>22.4 Hard copy (manual) submission by courier or hand delivery allowed or specified in the BDS shall be governed as follows:</p> <p>a) The signed Bid shall be marked "Original", and its copies marked "Copy" as appropriate. The number of copies is indicated in the BDS. All copies shall be made from the signed original only. If there are discrepancies between the original and the copies, the original shall prevail.</p> <p>(b) The Technical Bid and Price Schedule must be sealed and submitted together in an envelope, which shall:</p> <ol style="list-style-type: none"> Bear the name of the Bidder; Be addressed to UNDP as specified in the BDS; and Bear a warning not to open before the time and date for Bid opening as specified in the BDS. <p>If the envelope with the Bid is not sealed and marked as required, UNDP shall assume no responsibility for the misplacement, loss, or premature opening of the Bid.</p>
Email and eTendering submissions	<p>22.5 Electronic submission through email or eTendering, if allowed as specified in the BDS, shall be governed as follows:</p> <ol style="list-style-type: none"> Electronic files that form part of the Bid must be in accordance with the format and requirements indicated in BDS; Documents which are required to be in original form (e.g. Bid Security, etc.) must be sent via courier or hand delivered as per the instructions in BDS. <p>22.6 Detailed instructions on how to submit, modify or cancel a bid in the eTendering system are provided in the eTendering system Bidder User Guide and Instructional videos available on this link: http://www.undp.org/content/undp/en/home/operations/procurement/business/procurement-notices/resources/</p>
23. Deadline for Submission of Bids and Late Bids	<p>23.1 Complete Bids must be received by UNDP in the manner, and no later than the date and time, specified in the BDS. UNDP shall only recognise the actual date and time that the bid was received by UNDP</p> <p>23.2 UNDP shall not consider any Bid that is received after the deadline for the</p>

	submission of Bids.
24. Withdrawal, Substitution, and Modification of Bids	<p>24.1 A Bidder may withdraw, substitute or modify its Bid after it has been submitted at any time prior to the deadline for submission.</p> <p>24.2 Manual and Email submissions: A bidder may withdraw, substitute or modify its Bid by sending a written notice to UNDP, 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 Bid, if any, must accompany the respective written notice. All notices must be submitted in the same manner as specified for submission of Bids, by clearly marking them as "WITHDRAWAL" "SUBSTITUTION," or "MODIFICATION"</p> <p>24.3 eTendering: A Bidder may withdraw, substitute or modify its Bid by Cancelling, Editing, and re-submitting the Bid directly in the system. It is the responsibility of the Bidder to properly follow the system instructions, duly edit and submit a substitution or modification of the Bid as needed. Detailed instructions on how to cancel or modify a Bid directly in the system are provided in the Bidder User Guide and Instructional videos.</p> <p>24.4 Bids requested to be withdrawn shall be returned unopened to the Bidders (only for manual submissions), except if the bid is withdrawn after the bid has been opened.</p>
25. Bid Opening	<p>25.1 UNDP will open the Bid in the presence of an ad-hoc committee formed by UNDP of at least two (2) members.</p> <p>25.2 The Bidders' names, modifications, withdrawals, the condition of the envelope labels/seals, the number of folders/files and all other such other details as UNDP may consider appropriate, will be announced at the opening. No Bid shall be rejected at the opening stage, except for late submissions, in which case, the Bid shall be returned unopened to the Bidders.</p> <p>25.3 In the case of e-Tendering submission, bidders will receive an automatic notification once the Bid is opened.</p>
D. EVALUATION OF BIDS	
26. Confidentiality	<p>26.1 Information relating to the examination, evaluation, and comparison of Bids, 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.</p> <p>26.2 Any effort by a Bidder or anyone on behalf of the Bidder to influence UNDP in the examination, evaluation and comparison of the Bids or contract award decisions may, at UNDP's decision, result in the rejection of its Bid and may subsequently be subject to the application of prevailing UNDP's vendor sanctions procedures.</p>
27. Evaluation of Bids	<p>27.1 UNDP will conduct the evaluation solely on the basis of the Bids received.</p> <p>27.2 Evaluation of Bids shall be undertaken in the following steps:</p> <ol style="list-style-type: none"> Preliminary Examination including Eligibility Arithmetical check and ranking of bidders who passed preliminary examination by price. Qualification assessment (if pre-qualification was not done)

	<ul style="list-style-type: none"> a) Evaluation of Technical Bids b) Evaluation of prices <p>Detailed evaluation will be focussed on the 3 - 5 lowest priced bids. Further higher priced bids shall be added for evaluation if necessary</p>
28. Preliminary Examination	<p>28.1 UNDP shall examine the Bids to determine whether they are complete with respect to minimum documentary requirements, whether the documents have been properly signed, and whether the Bids are generally in order, among other indicators that may be used at this stage. UNDP reserves the right to reject any Bid at this stage.</p>
29. Evaluation of Eligibility and Qualification	<p>29.1 Eligibility and Qualification of the Bidder will be evaluated against the Minimum Eligibility/Qualification requirements specified in the Section 4 (Evaluation Criteria).</p> <p>29.2 In general terms, vendors that meet the following criteria may be considered qualified:</p> <ul style="list-style-type: none"> 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; b) They have a good financial standing and have access to adequate financial resources to perform the contract and all existing commercial commitments; 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; d) They are able to comply fully with the UNDP General Terms and Conditions of Contract; e) They do not have a consistent history of court/arbitral award decisions against the Bidder; and f) They have a record of timely and satisfactory performance with their clients.
30. Evaluation of Technical Bid and prices	<p>30.1 The evaluation team shall review and evaluate the Technical Bids on the basis of their responsiveness to the Schedule of Requirements and Technical Specifications and other documentation provided, applying the procedure indicated in the BDS and other ITB documents. When necessary, and if stated in the BDS, UNDP may invite technically responsive bidders for a presentation related to their technical Bids. The conditions for the presentation shall be provided in the bid document where required.</p>
31. Due diligence	<p>31.1 UNDP 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:</p> <ul style="list-style-type: none"> a) Verification of accuracy, correctness and authenticity of information provided by the Bidder; b) Validation of extent of compliance to the ITB requirements and evaluation criteria based on what has so far been found by the evaluation team; 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; d) Inquiry and reference checking with previous clients on the performance on on-going or completed contracts, including physical inspections of previous

	<p>works, as deemed necessary;</p> <p>e) Physical inspection of the Bidder's offices, branches or other places where business transpires, with or without notice to the Bidder;</p> <p>f) Other means that UNDP may deem appropriate, at any stage within the selection process, prior to awarding the contract.</p>
32. Clarification of Bids	<p>32.1 To assist in the examination, evaluation and comparison of Bids, UNDP may, at its discretion, request any Bidder for a clarification of its Bid.</p> <p>32.2 UNDP's request for clarification and the response shall be in writing and no change in the prices or substance of the Bid shall be sought, offered, or permitted, except to provide clarification, and confirm the correction of any arithmetic errors discovered by UNDP in the evaluation of the Bids, in accordance with the ITB.</p> <p>32.3 Any unsolicited clarification submitted by a Bidder in respect to its Bid, which is not a response to a request by UNDP, shall not be considered during the review and evaluation of the Bids.</p>
33. Responsiveness of Bid	<p>33.1 UNDP's determination of a Bid's responsiveness will be based on the contents of the bid itself. A substantially responsive Bid is one that conforms to all the terms, conditions, specifications and other requirements of the ITB without material deviation, reservation, or omission.</p> <p>33.2 If a bid is not substantially responsive, it shall be rejected by UNDP and may not subsequently be made responsive by the Bidder by correction of the material deviation, reservation, or omission.</p>
34. Nonconformities, Repairable Errors and Omissions	<p>34.1 Provided that a Bid is substantially responsive, UNDP may waive any non-conformities or omissions in the Bid that, in the opinion of UNDP, do not constitute a material deviation.</p> <p>34.2 UNDP may request the Bidder to submit the necessary information or documentation, within a reasonable period, to rectify nonmaterial nonconformities or omissions in the Bid related to documentation requirements. Such omission shall not be related to any aspect of the price of the Bid. Failure of the Bidder to comply with the request may result in the rejection of its Bid.</p> <p>34.3 For the bids that have passed the preliminary examination, UNDP shall check and correct arithmetical errors as follows:</p> <p>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 UNDP 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;</p> <p>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</p> <p>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.</p> <p>34.4 If the Bidder does not accept the correction of errors made by UNDP, its Bid shall</p>

be rejected.

E. AWARD OF CONTRACT

35. Right to Accept, Reject, Any or All Bids	35.1 UNDP reserves the right to accept or reject any bid, to render any or all of the bids as non-responsive, and to reject all Bids at any time prior to award of contract, without incurring any liability, or obligation to inform the affected Bidder(s) of the grounds for UNDP's action. UNDP shall not be obliged to award the contract to the lowest priced offer.
36. Award Criteria	36.1 Prior to expiration of the period of Bid validity, UNDP shall award the contract to the qualified and eligible Bidder that is found to be responsive to the requirements of the Schedule of Requirements and Technical Specification, and has offered the lowest price.
37. Debriefing	37.1 In the event that a Bidder is unsuccessful, the Bidder may request for a debriefing from UNDP. 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 Bids for UNDP procurement opportunities. The content of other Bids and how they compare to the Bidder's submission shall not be discussed.
38. Right to Vary Requirements at the Time of Award	38.1 At the time of award of Contract, UNDP 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.
39. Contract Signature	39.1 Within fifteen (15) days from the date of receipt of the Contract, the successful Bidder shall sign and date the Contract and return it to UNDP. Failure to do so may constitute sufficient grounds for the annulment of the award, and forfeiture of the Bid Security, if any, and on which event, UNDP may award the Contract to the Second highest rated or call for new Bids.
40. Contract Type and General Terms and Conditions	40.1 The types of Contract to be signed and the applicable UNDP Contract General Terms and Conditions, as specified in BDS, can be accessed at http://www.undp.org/content/undp/en/home/procurement/business/how-we-buy.html
41. Performance Security	41.1 A performance security, if required in the BDS, shall be provided in the amount specified in BDS and form available at https://popp.undp.org/layouts/15/WopiFrame.aspx?sourcedoc=/UNDP POPP DOCUMENT LIBRARY/Public/PSU Solicitation Performance%20Guarantee%20Form.docx&action=default within a maximum of fifteen (15) days of the contract signature by both parties. Where a performance security is required, the receipt of the performance security by UNDP shall be a condition for rendering the contract effective.
42. Bank Guarantee for Advanced Payment	42.1 Except when the interests of UNDP so require, it is UNDP's standard practice to not make advance payment(s) (i.e., payments without having received any outputs). If an advance payment is allowed as per the BDS, and exceeds 20% of the total contract price, or USD 30,000, whichever is less, the Bidder shall submit a Bank Guarantee in the full amount of the advance payment in the form available at

	https://popp.undp.org/layouts/15/WopiFrame.aspx?sourcedoc=/UNDP.POPP_DOCUMENT_LIBRARY/Public/PSU_Contract%20Management%20Payment%20and%20Taxes_Advanced%20Payment%20Guarantee%20Form.docx&action=default
43. Liquidated Damages	<p>43.1 If specified in the BDS, UNDP shall apply Liquidated Damages for the damages and/or risks caused to UNDP resulting from the Contractor's delays or breach of its obligations as per Contract.</p>
44. Payment Provisions	<p>44.1 Payment will be made only upon UNDP's acceptance of the goods and/or services performed. The terms of payment shall be within thirty (30) days, after receipt of invoice and certification of acceptance of goods and/or services issued by the proper authority in UNDP with direct supervision of the Contractor. Payment will be effected by bank transfer in the currency of the contract.</p>
45. Vendor Protest	<p>45.1 UNDP's vendor protest procedure provides an opportunity for appeal to those persons or firms not awarded a contract through a competitive procurement process. In the event that a Bidder believes that it was not treated fairly, the following link provides further details regarding UNDP vendor protest procedures: http://www.undp.org/content/undp/en/home/procurement/business/protest-and-sanctions.html</p>
46. Other Provisions	<p>46.1 In the event that the Bidder offers a lower price to the host Government (e.g. General Services Administration (GSA) of the federal government of the United States of America) for similar goods and/or services, UNDP shall be entitled to the same lower price. The UNDP General Terms and Conditions shall have precedence.</p> <p>46.2 UNDP is entitled to receive the same pricing offered by the same Contractor in contracts with the United Nations and/or its Agencies. The UNDP General Terms and Conditions shall have precedence.</p> <p>46.3 The United Nations has established restrictions on employment of (former) UN staff who have been involved in the procurement process as per bulletin ST/SGB/2006/15 http://www.un.org/en/ga/search/view_doc.asp?symbol=ST/SGB/2006/15&referer</p>

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 Invitation to Bid. 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 Bid	English
2		Submitting Bids for Parts or sub-parts of the Schedule of Requirements (partial bids)	Allowed Per Lot, however partial bid within the same lot is not allowed.
3	20	Alternative Bids	Shall not be considered
4	21	Pre-Bid conference	<p>Will be Conducted</p> <p>A MANDATORY site visits is scheduled to be held in the targeted sites as the following Schedule:</p> <p>Time: 10:00 am</p> <p>Date: November 11, 2018 10:00 AM</p> <p>Venue: Aleppo city.</p> <p>The UNDP focal point for the arrangement is:</p> <p>Mr. Yasser Al Issa Mobile: 0941111285 Email: yasser.alissa@undp.org</p> <p>Site visit is a MANDATORY requirement. Bids received from companies who did not attend the site visit will not be considered.</p>
5	16	Bid Validity Period	90 days
6	13	Bid Security	Required in the amount of USD 1,000 USD for Lot1, and 1,300 USD for Lot2 and USD 1,500 for Lot3.

			Acceptable Forms of Bid Security <ul style="list-style-type: none"> ▪ Bank Guarantee (See Section 8 for template) ▪ Certified Check
7	41	Advanced Payment upon signing of contract	Not Allowed
8	42	Liquidated Damages	Will be imposed as follows: Percentage of contract price per day of delay: 0.5% Max. number of days of delay 20, after which UNDP may terminate the contract.
9	40	Performance Security	Required in the amount of 10% of the contract value
10	12	Currency of Bid	United States Dollar However, for local suppliers' payments will be in Syrian Pounds at the prevailing UN exchange rate at the date of the invoice <i>Reference date for determining UN Operational Exchange Rate: of the date of deadline of the tender</i>
11	31	Deadline for submitting requests for clarifications/ questions	5 days before the submission deadline
12	31	Contact Details for submitting clarifications/questions	Focal Person in UNDP: Hanan Al Ali Address: Damascus, Mezzeh, West Villas, Ghazawi St. 8 Fax No. : +963 11 611 45 41 E-mail address dedicated for this purpose: Hanan.al-ali@undp.org CC: syria.procurement@undp.org
13	18, 19 and 21	Manner of Disseminating Supplemental Information to the ITB and responses/clarifications to queries	Direct communication to prospective Proposers by email and Posting on the websites: - www.facebook.com/UNDP.Syria - http://www.sy.undp.org/content/syria/en/home/operations/procurement/ - http://procurement-notice.undp.org/
14	23	Deadline for Submission	November 19, 2018 1:00 PM

14	22	Allowable Manner of Submitting Bids	<input checked="" type="checkbox"/> Courier/Hand Delivery <input checked="" type="checkbox"/> Submission by email
15	22	Bid Submission Address	<input checked="" type="checkbox"/> <u>By Courier / Hand Delivery:</u> Mezzeh, West Villas Ghazzawi Street #8 Damascus, Syrian Arab Republic Tel: +963 11 612 9811 Att. Hanan Al Ali, Procurement Associate <input checked="" type="checkbox"/> <u>By Electronic submission:</u> Syria.bids@undp.org with subject: UNDP-SYR-ITB-110-18
16	22	Electronic submission (email or eTendering) requirements	<ul style="list-style-type: none"> ▪ Format: PDF files only ▪ File names must be maximum 60 characters long and must not contain any letter or special character other than from Latin alphabet/keyboard. ▪ All files must be free of viruses and not corrupted. ▪ Max. File Size per transmission: 5 MB ▪ Mandatory subject of email: UNDP-SYR-ITB-110-18. ▪ Documents which are required in original (e.g. Bid Security) should be sent to the below address with a PDF copy submitted as part of the electronic submission: UNDP Syria Country Office, Procurement Unit, Mazze West Villas, Damascus, Syria or UNDP RBAS Regional Center in Jordan, attention Ms. Hanan Abu Baker, Procurement Analyst, at the following address: Abu-Baker Seraj Al-Din ST. Building # 11 – Abdoun Al Shamali P O BOX 852303- AMMAN 11185 - JORDAN
17	25	Date, time and venue for the opening of bid	Date and Time: November 19, 2018 3:00 PM Venue: UNDP Syria Country Office, Mezzeh, West Villas, Ghazzawi Street, No.8. Damascus, Syria
18	27, 36	Evaluation Method for the Award of Contract	Lowest priced technically responsive, eligible and qualified bid.
19		Expected date for commencement of Contract	<i>Upon contract signature</i>

20		Maximum expected duration of contract	3 months for Lot-1 and Lot-2 starting from the date of contract signature and 2 months for Lot1 starting from the date of contract signature
21	35	UNDP will award the contract to:	One or more Proposers, depending on the following factors: each lot might be awarded to a different supplier.
22	39	Type of Contract	Contract for Goods and/or Services to UNDP http://www.undp.org/content/undp/en/home/procurement/business/how-we-buy.html
23	39	UNDP Contract Terms and Conditions that will apply	UNDP General Terms and Conditions for Contracts http://www.undp.org/content/undp/en/home/procurement/business/how-we-buy.html
24		Other Information Related to the ITB	N/A

Section 4. Evaluation Criteria

Preliminary Examination Criteria

Bids will be examined to determine whether they are complete and submitted in accordance with ITB requirements as per below criteria on a Yes/No basis:

- Appropriate signatures
- Power of Attorney
- Minimum Bid documents provided
- Bid Validity
- Bid Security (if required) submitted as per ITB requirements with compliant validity period

Minimum Eligibility and Qualification Criteria

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

If the Bid is submitted as a Joint Venture/Consortium/Association, each member should meet the minimum criteria, unless otherwise specified.

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 ITB clause 3.	Form A: Bid Submission Form
Conflict of Interest	No conflicts of interest in accordance with ITB clause 4.	Form A: Bid 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: Bid Submission Form
Certificates and Licenses	<ul style="list-style-type: none"> ▪ Duly authorized to act as Agent on behalf of the Manufacturer, or Power of Attorney, if bidder is not a manufacturer ▪ Official appointment as local representative, if Bidder is submitting a Bid on behalf of an entity located outside the country ▪ Export/Import Licenses, if applicable ▪ Business registration certificate 	Form B: Bidder Information Form
QUALIFICATION		
History of Non-Performing	Non-performance of a contract did not occur as a result of contractor default for the last 3 years.	Form D: Qualification Form

Contracts¹		
Litigation History	No consistent history of court/arbitral award decisions against the Bidder for the last 3 years.	Form D: Qualification Form
Previous Experience	Minimum 3 years of relevant experience.	Form D: Qualification Form
	Minimum 3 contracts of similar value, nature and complexity implemented by the company. <i>(For JV/Consortium/Association, all Parties cumulatively should meet requirement).</i>	Form D: Qualification Form
Financial Standing	<input checked="" type="checkbox"/> Minimum average annual turnover of twice the proposed bid value for any of the last 3 years. <i>(For JV/Consortium/Association, all Parties cumulatively should meet requirement).</i>	Form D: Qualification Form
	Bidder must demonstrate the current soundness of its financial standing and indicate its prospective long-term profitability. <i>(For JV/Consortium/Association, all Parties cumulatively should meet requirement).</i>	Form D: Qualification Form
Technical Evaluation	The technical bids shall be evaluated on a pass/fail basis for compliance or non-compliance with the technical specifications identified in the bid document.	Form E: Technical Bid Form
Financial Evaluation	Detailed analysis of the price schedule based on requirements listed in Section 5 and quoted for by the bidders in Form F. Price comparison shall be based on the landed price, including transportation, insurance and the total cost of ownership (including spare parts, consumption, installation, commissioning, training, special packaging, etc., where applicable) Comparison with budget/internal estimates.	Form F: Price Schedule Form

¹ Non-performance, as decided by UNDP, 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 5a: Schedule of Requirements and Technical Specifications/Bill of Quantities

Lot (1):

المواصفات الفنية والأعمال المطلوبة لترتيب منظومة الطاقة الكهربائية الشمسية لمشفى النيرب ووحدة عدم انقطاع التيار الكهربائي لمشفى الرازي:

Technical specifications and works required for installation of a Solar Power System for Al-Nairab Hospital and a UPS for Al-Razi Hospital:

الغاية من المشروع:

- توفير انارة وكهرباء لبعض التجهيزات الطبية من الطاقة الشمسية ضمن مشفى النيرب ووحدة عدم انقطاع التيار الكهربائي UPS لمشفى الرازي في مدينة حلب. **Lot-1**

- توفير مياه ساخنة عن طريق الطاقة الشمسية ضمن مشفين في مدينة حلب (النيرب والرازي). **Lot-2**

- اعادة تأهيل قسم من سطح مشفى الرازي. **Lot-3**

مكونات المشروع:

توليد الكهرباء من الطاقة الشمسية:

- الألواح شمسية + القواعد اللازمة لتثبيتها + تاريض لكامل المنظومة (DC&AC) + مانع صواعق + قواعد للبطاريات.
- شاحن MPPT.
- انفيرتر هايبرد مدمج (شمسي + شبكة المدينة) ذو موجة جيبية حقيقية.
- بطاريات جبل جافة خاصة بتطبيقات الطاقة الشمسية.
- أجهزة عدم انقطاع التيار الكهربائي (UPS).
- لوحة توزيع تيار متناوب + قواطع + متممات.
- جميع الملحقات من كوابل ومستلزمات تمديد وتثبيت وقواطع وحمايات كهربائية (Earthing – Isolators for (DC & AC) – Surge Protection – Lightning Protection).

مشفى النيرب:

- سيتم تغذية كامل مشفى النيرب من منظومة الطاقة الكهروشمسية بعد استثناء الأحمال الحرارية والمكيفات وأجهزة التعقيم الجافة والتصوير الشعاعي (والأحمال التي لا يشكل توقفها عن العمل أي خطر على الأداء الطبي للمشفى) والتي تؤمن عمل هذه المرافق لمدة 10 ساعات ليلاً على أساس الواقع التشغيلي ليلاً والذي يساوي 50% من الاستطاعة الكلية. وتشغيل هذه المرافق لمدة 6 ساعات نهاراً اعتماداً على الطاقة المولدة من الألواح والبطاريات وذلك (في حال فشل الشبكة الرئيسية والمولدات الاحتياطية).
- يتم توزيع وحدات On Line UPS استطاعة 3 كيلو واط عدد 3 على ثلاث مرافق أساسية لتغذية الأحمال الحساسة مثل الحواضن وأجهزة العناية المشددة والإنعاش.
- إن استطاعة الألواح المدروس تركيبها بحدود 15 كيلو واط واستطاعة التبديل للانفترقات الكهروشمسية 15 كيلو فولت أمبير ثلاثي الأطوار.
- السبب الرئيسي لتصميم المنظومة بخرج ثلاثي الطور وباستطاعة 15 كيلو واط هي تحقيق التلازم الفني بين مواصفات الشبكة الكهربائية للمشفى والمنظومة الشمسية وإمكانية تركيب تجهيزات إضافية لاحقاً كون المشفى في طور التطوير

واستحداث أقسام جديدة.

• الأحمال لمشفى النيرب المراد تغذيتها من المنظومة الكرومونية:

الاستطاعة الإجمالية المقدرة	العدد	الجهاز	الغرفة
3000 [watts]	2	حاضنة	غرفة الحواضن
80 [watts]	4	إنارة	
300 [watts]	1	مونيتور	غرفة العناية المشددة
80 [watts]	4	إنارة	
400 [watts]	4	إنارة فقط	غرفة الطيبات
	4	إنارة فقط	غرفة الإنعاش
	8	إنارة فقط	غرفة المنامة للمرضى عدد 12/
	4	إنارة فقط	غرفة الغسيل
300 [watts]	1	جهاز تخطيط قلب	غرفة الإسعاف
300 [watts]	1	جهاز أكسجين	
300 [watts]	1	جهاز رذاذ	
300 [watts]	1	جهاز سحب مفرزات	
320 [watts]	16	إنارة	
5380 [watts]			الاستطاعة الإجمالية بالواط:

ملاحظة هامة:

على المتعهد تقديم رسم صندوقي للنظام الشمسي المقدم (3 أنظمة) مع تفصيلات كافة التجهيزات المقدمة. كما يجب أن يبين ويقدم النشرات الفنية لكافة العناصر الأساسية والمضافة من قبله (قواطع-نظام التأسيس-Surge Protection- فيوزات البطاريات والألواح الشمسية -عوازل- علب وصل الكبلات....الخ). يرفض العرض بدون وجود كافة هذه التفاصيل.

المواصفات الفنية:

**1- مشفى النيرب
Al-Nairab Hospital**

Items to be Supplied*	Qty	Unit	Description/Specifications of Goods	Latest Delivery Date
انفرتر	3	عدد	<p>1- <u>انفرتر شمسي نوع هايبرد (Hybrid)</u></p> <ul style="list-style-type: none"> - تقديم وتركيب انفرتر شمسي مع شاحن كهربائي وشمسي مدمج - استطاعة 5 KVA <u>موجة جيبية حقيقية</u>. - شاحن نوع Mppt مدمج عدد 2. - مجال دخل جهد الشاحن لا يقل عن 60 الى 115 VDC . - تيار الدخل من الألواح الشمسية الأعظمي (60A X 2). - تيار الدخل من المدينة أو المولدة الأعظمي (60A). - إمكانية وصل خرج الانفرترات على التفرع للحصول على خرج ثلاثي الأطوار 3 Phases - الجهد الأعظمي الذي يتحمله من اللاقط $\leq 145(Voc)$. - مجال الجهد لدخل شاحن ال MPPT -115~60 (VDC) (Vmpp). - مجال جهد الدخل المتناوب 230 متناوب. - مدة التبديل لا تزيد عن 10 الى 20 ميلي ثانية. - تردد جهد الدخل المتناوب - $50/60 \pm 5\%$ (Hz) - مجال جهد الخرج المتناوب 230(VAC) - مردود الخرج لا يقل عن 90%. - استطاعة الدخل الأعظمي من الألواح الشمسية 6000 واط. - تحمل تدفق استطاعة أعظمي حتى 1000 فولت أمبير. - المردود الأعظمي للشواحن لا تقل عن 98%. - درجة الحرارة في حال التشغيل من 0 حتى 55 درجة مئوية. - يعمل في حال الرطوبة بنسبة لا تقل عن 95%~0 . - جهد توصيل البطاريات 48 VDC . - مزود بشاشة اظهر LCD. - درجة الحماية من تغيرات جهد الدخل والخرج (زيادة ونقصان) والحمل الزائد والقصير ودرجة الحرارة. - يعمل على كافة أنواع البطاريات المفتوحة السائلة والمغلقة الجافة. - أن يكون من صناعة شركة عالمية في هذا المجال مثل Victron أو SMA أو ما يعادلها وحسب معايير IEC. 	3 أشهر من تاريخ توقيع العقد
الواح كهروضوئية	54	عدد	<p>2- <u>الواح الطاقة الكهروضوئية:</u></p> <ul style="list-style-type: none"> - تقديم وتركيب ألواح طاقة شمسية باستطاعة لا تقل عن 280 واط حسب شروط فحص ال STC و NOCT: - عدد الخلايا في اللوح الكهروضوئي 60 خلية على التسلسل. - نوع الخلية : Monocrystalline أو Polycrystalline. - الاستطاعة العظمى لا تقل عن 280 Wp . - عامل الملء للألواح لا يقل عن 75%. - توتر التشغيل الاسمي 24V - توتر الدارة المفتوحة لا يقل عن 38.5V - تيار الدارة القصيرة $\leq 9.3A$ - تيار الطاقة الأعظمي ≤ 8.9 أمبير - جهد الطاقة الأعظمي: ≤ 31 فولت - مردود اللاقط $\leq 16\%$ 	

			<ul style="list-style-type: none"> - علبه الوصل ذات عزل : IP67 مع وجود ديودات حماية ومادة عازلة لملاء العلبه والحماية من الرطوبة والماء (هلامية أو سيليكونية) . - نوع الوصلات MC4. - الزجاج الأمامي من الزجاج المقسى الخاص بالألواح الكهروضوئية (نسبة حديد منخفضة). - الإطار من الألمنيوم المؤكسد. - توجيه الألواح نحو الجنوب بزاوية ميل من 40 الى 45 درجة مئوية. - يجب على العارض بالضرورة ارفاق العرض بالوثائق التالية وهي شرط أساسي في قبول العرض: ○ تقرير اختبار وشهادة ذات صلاحية من أحد هيئات اختبار الجودة المعتمدة عالمياً لمواصفات الألواح والتي تحقق المعايير: IEC 61730 - IEC/EC 61215 ○ تقرير اختبار وشهادة ذات صلاحية من أحد هيئات اختبار الجودة المعتمدة عالمياً لمواصفات اللوح الزجاجي المستخدم في صناعة اللوح. ○ تقرير اختبار وشهادة ذات صلاحية من أحد هيئات اختبار الجودة المعتمدة عالمياً لمواصفات مادة EVA المستخدمة في صناعة اللوح وجمع مكوناته. ○ تقرير اختبار وشهادة ذات صلاحية من أحد هيئات اختبار الجودة المعتمدة عالمياً لمواصفات الغلاف الخلفي المستخدمة في صناعة اللوح. ○ تقرير اختبار وشهادة ذات صلاحية من أحد هيئات اختبار الجودة المعتمدة عالمياً لمواصفات الكبل المستخدم في تصنيع اللوح. ○ رسالة من الشركة المصنعة للألواح تبين من خلالها عقد الضمان للألواح وشروط الضمان على ألا تقل فترة الضمان عن 10 سنوات. ○ رسالة من الشركة المصنعة للألواح تدعم فيه الشركة صاحبة العرض في عرضه من الناحية الفنية.
علب تجميع	6	عدد	<p>3- تقديم وتركيب علب جمع الألواح PV Compiler مزود بفيوزات حماية وديودات وقاطع وحماية من أجل ارتفاع الجهد</p>
بطارية	24	عدد	<p>4- <u>البطاريات (المدخرات)</u></p> <ul style="list-style-type: none"> ● تقديم وتركيب مجموعة بطاريات تخزين الطاقة بسعة 4800 أمبير ساعي / 48 فولط. ● نوع البطارية جافة (جل - Deep Cycle) أو مفتوحة نوع توبلر. ● مكون من بطاريات 200 أمبير ساعي / 12 فولت ● الجهد الإسمي للبطارية 12V ● السعة الإسمية البطارية 200Ah من أجل تفريغ 10 ساعة حتى جهد خلية 1.8V ● المقاومة الداخلية لا تزيد عن 3.6mΩ ● -التيار الأعظمي المسموح به للشحن لا ينقص عن 40A ● وزن البطارية لا يقل عن 60 Kg ● التفريغ الذاتي لا يزيد عن 5% خلال فترة شهر لدرجة حرارة °(20) ● العمر الافتراضي لا يقل عن 10 سنوات لدرجة حرارة °(20) ● عدد مرات الشحن والتفريغ عند درجة حرارة °(20) وبشروط مثالية لا يقل عن Cycle 1600 عند منحنى تفريغ 50% DOD . ● العمر الفني ≤ 3 Years ● درجة حرارة العمل (0 to 55) ● أن تكون متطابقة مع المواصفات والمعايير الأوروبية والبريطانية. ● كفاءة البطارية لا تقل عن سنتان من تاريخ التركيب. ● عمر البطارية لا يزيد عن 6 أشهر من تاريخ التصنيع.

5-	الحامل المعدني: • من الألمنيوم أو الحديد مع طبقة سيراقون وطبقتي دهان. • التثبيت باتجاه الجنوب بزاوية 40 درجة. • يجب على العارض تزويد دراسة انشائية للمقاطع والتشكيل المستخدم في التثبيت بحيث يحقق معايير السلامة في الجمهورية العربية السورية لسرعات رياح 140 كم في الساعة. • على العارض إجراء زيارة ميدانية لمكان التركيب لمعاينته وبوجود المهندس الدارس للمشروع.	لا يقل وزنها عن 490Kg	حامل معدني للألواح
6-	تقديم وتركيب حوامل معدنية للبطاريات مع طبقتي دهان.	كغ	حامل معدني للبطارية
7-	تقديم وتركيب كابلات كهربائية نحاسي شعري 4*6 mm ² مخصصة لتطبيقات الطاقة الشمسية.	م.ط.	لا يقل عن 25m كابلات كهربائية
8-	تقديم وتركيب كابلات كهربائية نحاسي شعري 4*4 mm ² مخصصة لتطبيقات الطاقة الشمسية.	م.ط.	لا يقل عن 50m كابلات كهربائية
9-	تركيب وتجهيز مكان للإنفرترات الشمسية مع البطاريات في غرفة معدنية Sandwich Panel مع تهوية مناسبة في موقع قريب من الألواح والذي يحدده لجنة الإشراف/ كغ	كغ	150 مكان للإنفرترات
10-	إضافة لوحة كهربائية جديدة وتعديل بعض التمديدات في اللوحة الرئيسية.	عدد	1 لوحة كهربائية
11-	تقديم وتركيب قاطع رئيسي 40 A ماركة ABB أو ما يعادلها.	عدد	2 قاطع رئيسي
12-	تقديم وتركيب قلاب 40 A رباعي.	عدد	1 قلاب 40 A
13-	تقديم وتركيب قفل ميكانيكي.	عدد	1 قفل ميكانيكي
14-	تقديم وتركيب لمبة إشارة.	عدد	2 لمبة إشارة
15-	تقديم وتركيب محلل شبكة.	عدد	1 محلل شبكة
16-	تقديم وتركيب محولات شدة.	عدد	6 محولات شدة
17-	تقديم وتركيب جنكسيونات (سكة 16 مم + 6 مم).	عدد	10 جنكسيونات
18-	تقديم وتركيب (مجاري + شريط + سكك + برايز).	عدد	1 اكسسوارات
19-	تقديم وتركيب قاطع مفرد 15A نوع Eaton أو ما يعادله	عدد	5 قاطع مفرد
20-	وحدة عدم انقطاع التيار الكهربائي - UPS : • True On-Line UPS • الاستطاعة: 3000VA/3000Watt • جهد الدخل 220VAC • تردد الدخل من 40 الى 70 هرتز • معامل الاستطاعة أكبر أو يساوي 0.99% • THDI أقل من أو يساوي 5% • جهد الخرج: 1% +/- 220 VAC • تردد الخرج من 47 الى 53 هرتز • زمن التحويل لا تزيد عن 4 ميلي ثانية • الخرج موجة جيبية حقيقية • المردود أحسن من 90% • زمن البطارية عند الحمل الكامل لا تقل عن 10 دقائق. • لوحة عرض LCD تعرض (وضعية العمل، نسبة الحمل، مستوى البطارية، جهود الدخل والخرج، زمن التفريغ والإنذارات.	عدد	3 وحدة عدم انقطاع التيار الكهربائي UPS

			<ul style="list-style-type: none"> • انذار صوتي • Bypass • الجهاز مصمم حسب معايير IEC - EN62040-2 C1 و EN62040-2 C2 • الضجيج أقل من 50dbA على بعد 1 متر • من صناعة شركة Triplite أو ما يعادلها
نظام أرضي	1	عدد	21- تقديم وتركيب نظام أرضي لكامل المنظومة وأن لا تزيد المقاومة المقاسة عن 5 أوم.
نظام مانع صاعق	1	عدد	22- تقديم وتركيب نظام مانع صواعق لكامل المنظومة حسب الكود السوري + (DC & AC surge protection devices).

ملاحظات هامة:

مشفى النيرب: سيتم التوصيل على شبكة المشفى الرئيسية وسيتم إنارة المشفى كاملة وكذلك تشغيل بعض الأجهزة الرئيسية للمشفى في حال حدث أي طارئ في المنظومة الأساسية المغذية للمشفى وسيتم التبادل والتناوب بين المنظومتين منظومة الطاقة الشمسية وشبكة المشفى الرئيسية كما سيتم عزل الأحمال الغير ممكن تغذيتها من الطاقة الشمسية مثل سخانات المياه وقسم الغسيل وجهاز الأشعة والمكيفات.

Items to be Supplied	QTY	Unit	Description/Specifications of Goods	Latest Delivery Date
2- مشفى الرازي Al-Razi Hospital				
وحدة عدم انقطاع التيار الكهربائي UPS	1	عدد	1- تقديم وتركيب وحدة عدم انقطاع التيار الكهربائي - UPS : <ul style="list-style-type: none"> • True On-Line UPS • الاستطاعة: 60 KVA / 48 KW • جهد الدخل ثلاثي الطور 380 VAC • مجال جهد الدخل من 304 الى 456 فولت متناوب • تردد الدخل من 50 هرتز +/- 10% • معامل الاستطاعة أكبر أو يساوي 0.8 • THDv أقل من أو يساوي 4% للأحمال اللاخطية • جهد الخرج: 220 VAC +/- 1% • تردد الخرج من 50 هرتز +/- 1% • زمن التحويل 0 ميلي ثانية • الخرج موجة جيبية حقيقية • المردود أحسن من 90% • زمن البطارية عند الحمل الكامل لا تقل عن 10 دقائق • لوحة عرض LCD تعرض (وضعية العمل، نسبة الحمل، مستوى البطارية، جهود الدخل والخرج، زمن التفريغ والانذارات • انذار صوتي • Bypass • الجهاز مصمم حسب معايير IEC - EN62040-2 C1 و EN62040-2 C2 • الضجيج أقل من 70 dbA على بعد 1 متر • من صناعة شركة Tripplite أو ما يعادلها • كل ما يلزم للتركيب من مواد وكابلاتالخ. 	3 أشهر من تاريخ توقيع العقد

Lot-2:

المواصفات الفنية والأعمال المطلوبة لتركيب منظومة الطاقة الشمسية (تسخين مياه) لمشفى النيرب والرازي

Technical specifications and works required for installation of Solar Water Heating Systems for Al-Nairab and Al-Razi Hospitals

مكونات المشروع:

توفير مياه ساخنة عن طريق الطاقة الشمسية:

- لواقط شمسية ذات نظام أنابيب.
- جهاز PLC.
- خزانات تعويض الماء البارد.
- قواعد للخزانات.
- خزانات مياه ساخنة.
- اسطوانات ملحقة بالخزانات.
- سكورة، مضخات، أنابيب واكسسوارات.

منظومة الطاقة الشمسية (تسخين مياه) لمشفى النيرب

Items to be Supplied	Quantity	Unit	Description/Specifications of Goods	Latest Delivery Date
أجهزة تسخين مياه بالطاقة الشمسية بنظام الأنابيب المفرغة	3	عدد	<p>1. تقديم وتركيب مجموعة من أجهزة تسخين المياه بالطاقة الشمسية ذات نظام الأنابيب الزجاجية المفرغة بالمواصفات التالية:</p> <ul style="list-style-type: none">• يعتمد اللاقط في عمله على الأنابيب المفرغة.• أنابيب اللواقط الشمسية يجب أن تكون حائزة على شهادة الجودة العالمية ISO9001، وأن تكون سهلة الفك والتركيب والاستبدال.• عدد الأنابيب المفرغة في اللاقط الواحد 30 أنبوب• مواصفات الأنابيب المفرغة : الطول /1.8/ متر، القطر الخارجي /5.8/ سم، القطر الداخلي /4.7/ سم، ثلاثي الطبقات مع عنصر دلالة لزوال التفريغ.• خزان المياه الساخنة بسعة /300/ لتر، ومزود بفتحة خاصة لتركيب سخان كهربائي داخله.• مادة الحيز الداخلي للخزان الملامس للماء: كروم عيار 304• سماكة الكروم للحيز الداخلي للخزان /0.5/ مم وسماكة الجوانب /0.8/ مم• وصلات الدخل والخرج معدنية مع لحام أرغون بفتحة مقاسها /1/ إنش أو /1.25/ إنش.• العزل من الفوم بسماكة لا تقل عن /50/ مم• الغلاف الخارجي من الستانليس ستيل عيار /430/ بسماكة /0.4/ مم	3 أشهر من تاريخ توقيع العقد

			<ul style="list-style-type: none"> الحامل من الستانليس ستيل بسماكة لا تقل عن 1/ مم مع عواكس محرقية خلفية يتم وصل اللواقط مع بعضها في مواقع التركيب، وفق تعليمات جهاز الإشراف.
سخانات كهربائية 1500/ واط	3	عدد	2. تقديم وتركيب سخان مياه كهربائي لخزانات المياه الساخنة، باستطاعة 1500/ واط على الأقل مع كل ما يلزم.
خزان مياه 1000/ ليتر	1	عدد	3. تقديم وتركيب خزان للمياه الباردة من الصاج المزليق بسعة 1000/ ليتر وبسماكة 2/ مم مع أرجل حاملة أو قاعدة معدنية مناسبة، ومزود بفواشة، لتعويض مياه الخزانات الساخنة، في الموقع المحدد من قبل جهاز الإشراف، مع جميع الإكسسوارات اللازمة وكل ما يلزم.
مضخة تعبئة مياه	1	عدد	4. تقديم وتركيب مضخة تعبئة مياه لخزان المياه الباردة باستطاعة 0.5/ حصان، مع جميع الإكسسوارات اللازمة وكل ما يلزم.
مضخة تدوير وموقت	1	عدد	5. تقديم وتركيب مضخة تدوير شلال مخصصة للاستعمال مع المياه الساخنة باستطاعة 0.5/ حصان مع دائرة مؤقت زمني، مع جميع الإكسسوارات اللازمة وكل ما يلزم.
جهاز تحكم رقمي	1	عدد	6. تقديم وتركيب جهاز تحكم رقمي مع التجهيزات والملحقات والتحديدات اللازمة ، ضمن علبة معدنية أو بلاستيكية تضمن حمايته من عوامل المناخ (أشعة الشمس – أمطار.....)، مع البرمجة والضبط اللازمين بحيث يمكن من خلاله التحكم بـ: <ul style="list-style-type: none"> عمل مضخة تعبئة خزان المياه الباردة (خزان التعويض). عمل سخانات الماء الكهربائية الدائمة عند الحاجة، عن طريق كونتاكتورات.
شبكة أنابيب بطبقة PPR ألمنيوم	95	متر طولي	7. تقديم وتركيب تمديدات لشبكات المياه الباردة والساخنة لمنظومة التدخين، مؤلفة من أنابيب مصنوعة من ال PPR المزود بطبقة من الألمنيوم، وبضغط تشغيلي لا يقل عن 10/ بار، بقطر 25/ مم، مع العزل بطبقة عازل اسفنجي وطبقة شريط عازل لاصق أسود من ال PVC ، مع جميع الإكسسوارات اللازمة، وكل ما يلزم.
	80	متر طولي	8. تقديم وتركيب تمديدات لشبكات المياه الباردة والساخنة لمنظومة التدخين، مؤلفة من أنابيب مصنوعة من ال PPR المزود بطبقة من الألمنيوم، وبضغط تشغيلي لا يقل عن 10/ بار، بقطر 32/ مم، مع العزل بطبقة عازل اسفنجي وطبقة شريط عازل لاصق أسود من ال PVC ، مع جميع الإكسسوارات اللازمة، وكل ما يلزم.

	50	متر طولي	9. تقديم وتركيب تمديدات لشبكات المياه الباردة والساخنة لمنظومة التسخين، مؤلفة من أنابيب مصنوعة من الـ PPR المزود بطبقة من الألمنيوم، وبضغط تشغيلي لا يقل عن 10/ بار، بقطر 10/ مم، مع العزل بطبقة عازل اسفنجي وطبقة شريط عازل لاصق أسود من الـ PVC ، مع جميع الإكسسوارات اللازمة، وكل مايلزم.	
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منظومة الطاقة الشمسية (تسخين مياه) لمشفى الرازي

Items to be Supplied	Qty	Unit	Description/Specifications of Goods	Latest Delivery Date
لواقط شمسية بنظام الأنابيب الزجاجية المفرغة	48	عدد	<p>1- تقديم وتركيب مجموعة من اللواقط الشمسية ذات نظام الأنابيب الزجاجية المفرغة لتسخين المياه بالموصفات التالية:</p> <ul style="list-style-type: none"> يعتمد اللاقط في عمله على الأنابيب الزجاجية المفرغة. يجب أن تكون أنابيب اللواقط الشمسية حائزة على شهادة الجودة العالمية ISO9001، وأن تكون سهلة الفك والتركيب والاستبدال. مواصفات الأنبوب المفرغ: الطول 1.8/ متر، القطر الخارجي 5.8/ سم، القطر الداخلي 4.7/ سم، ثلاثي الطبقات مع عنصر دالة لزوال التفريغ. عدد الأنابيب المفرغة في اللاقط الواحد 30/ أنبوب مادة الحيز الداخلي لجسم الإسطوانة الملامس للماء: كروم عيار 304/ سماعة الكروم للحيز الداخلي لجسم الإسطوانة 0.5/ مم وسماعة الجوانب 0.8/ مم طبقة العزل الوسطى من الفوم بسماعة 40-45/ مم الغلاف الخارجي من الستانليس ستيل عيار 430/ بسماعة 0.4/ مم يتم دخول الماء وخروجه عبر وصلات معدنية مثبتة على جسم اللاقط بلحام أرغون وذات مقاس 1/ إنش أو 1.25/ إنش. الحامل من الستانليس ستيل بسماعة لا تقل عن 1/ مم مع عواكس محرقية خلفية يتم وصل اللواقط مع بعضها ومع خزانات المياه الباردة والساخنة في مواقع التركيب ضمن مجموعات رئيسية وفرعية، وفق تعليمات جهاز الإشراف. 	3 أشهر من تاريخ توقيع العقد لكافة البنود

خزانات تعويض 2000/ لتر	4	عدد	<p>2- تقديم وتركيب خزان تعويض للمياه بسعة 2000/ لتر وفق المواصفات التالية:</p> <ul style="list-style-type: none"> مصنوع من الصاج المزيبق غير القابل للصدأ وبسماكة لا تقل عن 2/ مم مع التدعيم الداخلي المناسب مواصفات وأبعاد فتحة التفقيش والصيانة ، وكذلك فتحات دخول وخروج المياه، تحدد من قبل لجنة الإشراف. مزود بفواشة من النوع الجيد مزود بأرجل أو قاعدة معدنية حاملة مناسبة.
خزان تعويض 2000/ لتر بقاعدة خاصة	1	عدد	<p>3- تقديم وتركيب خزان تعويض للمياه بسعة 2000/ لتر مع قاعدة خاصة وفق المواصفات التالية:</p> <ul style="list-style-type: none"> مصنوع من الصاج المزيبق غير القابل للصدأ وبسماكة لا تقل عن 2/ مم مع التدعيم الداخلي المناسب مواصفات وأبعاد فتحة التفقيش والصيانة ، وكذلك فتحات دخول وخروج المياه، تحدد من قبل لجنة الإشراف. مزود بفواشة من النوع الجيد مزود بقاعدة حاملة مصنوعة من بروفيل حديدي مقطعه 4سم×6سم/ ومزودة بثمانية أرجل من نفس المادة والمقطع بارتفاع 2.5/ م اعتباراً من أسفل القاعدة ويربط بين الأرجل أذرع تدعيم أفقية من نفس المادة والمقطع وتستند كل رجل منها على وسط صفيحة معدنية مستطيلة بأبعاد 20×20سم/ بسمكة 2/ مم (تلحم الصفائح مع الأرجل في موقع التركيب بشكل متوافق مع ميل البلاط).
خزانات مياه ساخنة 1500/ لتر	4	عدد	<p>4- تقديم وتركيب خزانات للمياه الساخنة بسعة 1500/ لتر، مع قواعد أو أرجل حاملة لها، وفق المواصفات التالية:</p> <ul style="list-style-type: none"> المبادل الحراري من نوع (Jacket) مصنوع من معدن غير قابل للصدأ (مغلّف) بسماكة لا تقل عن 4/ مم الجسم الداخلي مصنوع من معدن غير قابل للصدأ (مغلّف) بسماكة لا تقل أيضاً عن 4/ مم. الخزانات معزولة بعازل حراري من الصوف الزجاجي بسماكة من 8/ سم إلى 10 سم، بغلفة طبقة خارجية من قماش معالج يمنع تسرب المياه إلى طبقة العزل. كل خزان مزود بفواشة مناسبة، تركب خارجياً (كاسر ضغط).
خزانات مياه ساخنة 1000/ لتر	3	عدد	<p>5- تقديم وتركيب خزانات للمياه الساخنة بسعة 1000/ لتر، مع قواعد أو أرجل حاملة لها، وفق المواصفات التالية:</p> <ul style="list-style-type: none"> المبادل الحراري من نوع (Jacket) مصنوع من معدن غير قابل للصدأ (مغلّف) بسماكة لا تقل عن 4/ مم الجسم الداخلي مصنوع من معدن غير قابل للصدأ (مغلّف) بسماكة لا تقل أيضاً عن 4/ مم. الخزانات معزولة بعازل حراري من الصوف الزجاجي بسماكة من 8/ سم إلى 10 سم، بغلفة طبقة خارجية من قماش معالج يمنع تسرب المياه إلى طبقة العزل.

			<ul style="list-style-type: none"> كل خزان مزود بفواشة مناسبة ، تركيب خارجيا" (كاسر ضغط).
خزان مياه ساخنة 500 ليتر	1	عدد	<p>6- تقديم وتركيب خزان إضافي ملحق بخزانات المياه الساخنة بسعة 500/ لتر، وذلك لتغذية قسم الحروق، وفق المواصفات التالية:</p> <ul style="list-style-type: none"> المبادل الحراري من نوع (Jacket) مصنوع من الكروم الغذائي القابل للتعقيم (كروم 304) بسماكة 2/ مم . الجسم الداخلي مصنوع من الكروم الغذائي القابل للتعقيم (كروم 304) بسماكة 2/ مم أيضا". معزول بطبقة عزل حراري من الفوم بسماكة 5/ سم، يغلفها طبقة خارجية بسماكة 8/0, مم من الصاج المزينق المبخوخ. مزود بفتحة خاصة محكمة الإغلاق لإضافة مواد معقمة للماء. مزود بفواشة مناسبة، تركيب خارجيا" (كاسر ضغط).
مضخات تدوير عيارية	1	مقطوعة	<p>7- تقديم وتركيب مضخات تدوير عيارية مخصصة للاستعمال مع المياه الساخنة (بمخرج ذي قياس بين 1.25/ إنش إلى 2/ إنش) بعدد واستطاعات كافية لتحقيق عملية تحريك للمياه بين خزانات الماء الساخن و مجموعات اللواقط الشمسية بشكل يحقق كفاءة عمل منظومة التسخين بالتوافق مع شبكة التمديدات المنفذة على الواقع (يمكن أن تركيب أكثر من مضخة تدوير على خط واحد لتحقيق الغاية المرجوة)، وذلك حسب تعليمات جهاز الإشراف.</p>
مضخات تدوير شلال	5	عدد	<p>8- تقديم وتركيب مضخات تدوير شلال مخصصة للاستعمال مع المياه الساخنة، لتدوير المياه في شبكة الأنابيب الواصلة بين خزانات الماء الساخن والأقسام المغذاة من المشفى، باستطاعة 0.5/ حصان لمياه الساخنة ، مع جميع الإكسسوارات اللازمة، وكل مايلزم، في المواقع المحددة من قبل جهاز الإشراف.</p>
PLC جهاز مع حساسات	1	عدد	<p>9- تقديم وتركيب جهاز PLC مع الحساسات والتمديدات اللازمة وتنفيذ عملية برمجة له وفق احتياج المنظومة وحسب تعليمات جهاز الإشراف، بالمواصفات العامة التالية:</p> <ul style="list-style-type: none"> أن يقبل ربط 24/ حساس حرارة على الأقل أن يحتوي على 4/ مداخل تشابهية على الأقل أن يحتوي على 4/ مخارج تشابهية على الأقل. أن يحتوي على 16/ مدخل رقمي على الأقل. أن يحتوي على 24/ مخرج رقمي على الأقل أن تحتوي اللوحة من الخارج على لمبات إشارة للدلالة على عمل كل جزء من الأجزاء المرتبطة بها من المنظومة، وعلى مجموعة عناصر تنبيه مرئي وصوتي في حال وجود خلل، مع إضافة مجموعة ثانية من عناصر التنبيه المرئي والصوتي في موقع ضمن مبنى المشفى يحدده جهاز الإشراف.

			<ul style="list-style-type: none"> • مرتبط ببطارية مناسبة لعمل الجهاز مزودة بشاحن آلي مناسب لها، بحيث تضمن البطارية عمل نظام التحكم فقط، لفترة لا تقل عن /30/ دقيقة في حال انقطاع الجهد الكهربائي. • أن يركب الجهاز مع البطارية وشاحنها في موقع مناسب على السطح (يوافق عليه جهاز الإشراف) ضمن علبة معدنية أو بلاستيكية تضمن حمايتهم من عوامل المناخ (أشعة الشمس – أمطار.....). • أن يضمن التحكم بمايلي: <ul style="list-style-type: none"> - تشغيل وإطفاء المنظومة. - تنظيم تسخين الماء داخل خزانات المياه الساخنة من خلال التحكم بمضخات التدوير العيارية بين اللواقط الشمسية وخزانات الماء الساخن، وقراءة درجات الحرارة اللازمة لهذه المهمة، مع الأخذ بعين الاعتبار وجود ثلاث أقسام منفصلة للمنظومة أحدها يحوي على خزان خاص تحتاج المياه فيه إلى تعقيم. - التحكم بتشغيل مضخات الشلالات بصورة مبرمجة زمنياً حسب الشهر واليوم وساعات الليل والنهار وحسب درجة حرارة الوسط الخارجي. - الاستمرار تلقائياً بالعمل عن طريق البطارية في حال انقطاع الجهد الكهربائي. - إظهار الأعطال وتشغيل عناصر التنبيه إليها، وتشمل هذه الأعطال: <ul style="list-style-type: none"> ❖ مشاكل تسرب المياه ❖ مشاكل في عملية التسخين (فشل مضخات التدوير العيارية مثلاً) ❖ انقطاع الجهد الكهربائي .
سكورة كروية 0.75 إنش	30	عدد	10- تقديم وتركيب سكر كروي معدني بقلب نحاسي قياس /0.75/ إنش مع كل ما يلزم.
شبكة أنابيب PPR بطبقة المنيوم	300	متر طولي	11- تقديم وتركيب تمديدات لشبكات الربط بين الخزانات للمياه الباردة وللمياه الساخنة، مؤلفة من أنابيب مصنوعة من ال PPR المزود بطبقة من الألمنيوم، وبضغط تشغيلي لا يقل عن /10/ بار، بقطر /25/ مم، مع العزل بطبقة عازل اسفنجي وطبقة شريط عازل لاصق أسود من ال PVC ، مع جميع الإكسسوارات اللازمة، وكل ما يلزم.
	110	متر طولي	12- تقديم وتركيب تمديدات لشبكات الربط بين الخزانات للمياه الباردة وللمياه الساخنة، مؤلفة من أنابيب مصنوعة من ال PPR المزود

			بطبقة من الألمنيوم، وبضغط تشغيلي لا يقل عن 10/ بار، وبقطر 32/ مم، مع العزل بطبقة عازل اسفنجي وطبقة شريط عازل لاصق أسود من الـ PVC ، مع جميع الإكسسوارات اللازمة، وكل مايلزم.
	125	متر طولي	13- تقديم وتركيب تمديدات لشبكات الربط بين الخزانات للمياه الباردة وللمياه الساخنة، مؤلفة من أنابيب مصنوعة من الـ PPR المزود بطبقة من الألمنيوم، وبضغط تشغيلي لا يقل عن 10/ بار، وبقطر 40/ مم، مع العزل بطبقة عازل اسفنجي وطبقة شريط عازل لاصق أسود من الـ PVC ، مع جميع الإكسسوارات اللازمة، وكل مايلزم.
عدم رجوع	30	عدد	14- تقديم وتركيب عدم رجوع نحاسي قطر 0.75/ إنش
	10	عدد	15- تقديم وتركيب عدم رجوع نحاسي قطر 1/ إنش من نوع جيد
	10	عدد	16- تقديم وتركيب عدم رجوع نحاسي قطر 1.25/ إنش من نوع جيد

ملاحظة:

فيما يتعلق بمنظومة الطاقة الشمسية (تسخين مياه) لمشفى الرازي

تقديم وتركيب تمديدات لشبكات الربط بين الخزانات للمياه الباردة و أخرى للمياه الساخنة، على أن تنتهي شبكات المياه الساخنة بمجمعات للأنابيب لا يقل قطرها عن 2/ إنش (يحمل سعرها على أسعار التمديدات الواردة في البنود رقم (11 - 12 - 13) من منظومة الطاقة الشمسية (تسخين مياه) لمشفى الرازي

كما يراعى خلال أعمال تمديد الأنابيب المغذية للمياه الساخنة في المشفى إمكانية دمج المخارج (عبر تمديدات إضافية يحمل سعرها أيضا" على أسعار التمديدات الواردة أعلاه) من أجل توزيع القدرة التسخينية على كافة الأجزاء المغذاة وذلك في حال اختلاف نسبة الاستهلاك بين الأقسام المختلفة.

Lot-3:

الأعمال اللازمة لتنفيذ صيانة وإعادة تأهيل قسم من سطح مشفى الرازي بحلب
تمهيدا" لتكريب منظومة توليد كهرباء ومنظومة تسخين مياه بالطاقة الشمسية للمشفى:

مدة التنفيذ	م	بيان الأعمال	الوحدة	الكمية
60 يوم من تاريخ توقيع العقد	1	إزاحة وإعادة تمديد وتثبيت الكابلات الكهربائية على السطح و تقديم الصيانة اللازمة لها وتتضمن (رفع الكابلات لإتمام أعمال السطح - توصيل الكابلات بطريقة مناسبة - تقديم القطع الناقصة و بدل التالفة ...) حسب تعليمات جهاز الإشراف مع كل ما يلزم	مقطوعة	1
	2	فك اللواقط الشمسية المسطحة القديمة الموجودة على السطح وتسليمها لمستودع الإدارة	مقطوعة	1
	3	فك الخزانات وإزالة العوارض المعدنية لسقف غرفة التحلية وتسليم الصالح للإدارة بموافقة لجنة الإشراف بعد تنزيلها من السطح مع كافة التمديدات الموجودة على السطح وترحيل التالف وهدم جدران في الغرفة الموجودة على السطح مع الترحيل والتنظيف وكل ما يلزم حسب تعليمات جهاز الإشراف	مقطوعة	1
	4	فك النوازل المطرية القديمة وتسليمها للإدارة وكل مايلزم	عدد	30
	5	قلع طبقة البلاط وماتحتها حتى الوصول الى الطبقة البيتونية أو صبة الميول إن وجدت في الأماكن المحددة من قبل جهاز الإشراف مع الترحيل والتنظيف وكل ما يلزم (مع قلع وترحيل وزرة البلاط المجاورة في أماكن تواجدها حسب تعليمات جهاز الإشراف)	م2	900
	6	قلع طبقة إنهاء السطح حتى الوصول الى الطبقة البيتونية أو صبة الميول إن وجدت في الأماكن المحددة من قبل جهاز الإشراف مع الترحيل والتنظيف وكل ما يلزم	م2	450
	7	تقديم وتنفيذ صبة اسمنتية سوداء للميول على السطح مصقولة بالمروحة عيار 250 كغ /م3 بسماكة وسطية بين 7 / سم و 5/سم مع شطفة بيتونية (تعصيبة) بارتفاع مناسب حسب الموقع وفق تعليمات جهاز الإشراف وكل ما يلزم	م3	115
	8	تقديم وتنفيذ طبقة عزل بيتومينية للسطح مع الشطفة البيتونية سماكة 4 مم صناعة أجنبية معدلة ببوليمر الـ SBS ومسلحة بطبقة من البوليستر غير محاك بوزن 160-180 غ / م2 وفق الشروط والمواصفات الفنية المطلوبة وكل ما يلزم	م2	1350
	9	تقديم وبناء تياخات من البلوك الملآن على السطح 15/ 40× سم مع الزريقة والصقل (الستارة - بين النوازل) وذلك لتحقيق الصرف الجيد للسطح وكل ما يلزم	م.ط	175
	10	تقديم وتركيب بلاط موزاييك بإسمنت أبيض قياس 40 × 40 × 3 سم نمرة 2 وطنية على الاتقل سماكة طبقة الموزاييك عن 12 مم مع الجلي والروبة باستخدام مواد مكتمة مضافة وكل ما يلزم	م2	1350
	11	تقديم وتركيب وزرة مجلية ومنكلة ارتفاع 10/ سم سماكة لا تقل عن 3 سم من نفس نوع بلاط الموزاييك المركب للسطح (للستارة - للتياخات) وذلك باستخدام إسمنت أبيض وكل ما يلزم	م.ط	675
	12	تقديم وتركيب نوازل مطرية 4 انش PVC ضغط عالي سماكة 5.3 مم مع الإكسسوارات والمواد اللاصقة الخاصة اللازمة مع كل ما يلزم	م.ط	300

13	تقديم وتركيب غطاء سيفونات مطرية مدورة لتصريف السطح	عدد	30
14	تقديم وتركيب قساطل مزبقة /1.5/ إنش لتمديدات المياه الحلوة على السطح مع الإكسسوار اللازم ومع العزل بالفلين + شبر لاصق بلاستيك PVC أسود، من أجود الأنواع الموجودة في الأسواق المحلية وكل ما يلزم حسب تعليمات جهاز الإشراف	م.ط	175
15	تقديم وتركيب قساطل مزبقة /1/ إنش لتمديدات المياه الحلوة على السطح مع الإكسسوار اللازم ومع العزل بالفلين + شبر لاصق بلاستيك PVC أسود، من أجود الأنواع الموجودة في الأسواق المحلية وكل ما يلزم حسب تعليمات جهاز الإشراف	م.ط	350
16	تقديم وتركيب سكر جارور نحاسي قطر 1.5 إنش موديل تشيكي وكل ما يلزم حسب تعليمات جهاز الإشراف	عدد	8
17	تقديم وتركيب تمديدات للمياه الساخنة مؤلفة من أنابيب مصنوعة من ال PPR المزود بطبقة من الألمنيوم وبقطر /40/ مم، مع العزل بطبقة عازل اسفنجي وطبقة لاصق أسود من ال PVC ، مع الإكسسوار اللازم للوصل والتثبيت والتشغيل وكل مايلزم، وذلك من خزانات المياه الساخنة لنظام الطاقة الشمسية على السطح لتمديدات النوازل والتفريعات الداخلية ضمن الأقسام المطلوبة حسب تعليمات جهاز الإشراف.	م.ط	150
18	تقديم وتركيب تمديدات للمياه الساخنة مؤلفة من أنابيب مصنوعة من ال PPR المزود بطبقة من الألمنيوم وبقطر /32/ مم، مع العزل بطبقة عازل اسفنجي وطبقة لاصق أسود من ال PVC ، مع الإكسسوار اللازم للوصل والتثبيت والتشغيل وكل مايلزم، وذلك من خزانات المياه الساخنة لنظام الطاقة الشمسية على السطح لتمديدات النوازل والتفريعات الداخلية ضمن الأقسام المطلوبة حسب تعليمات جهاز الإشراف.	م.ط	150
19	تقديم وتركيب تمديدات للمياه الساخنة مؤلفة من أنابيب مصنوعة من ال PPR المزود بطبقة من الألمنيوم وبقطر /25/ مم، مع العزل بطبقة عازل اسفنجي وطبقة لاصق أسود من ال PVC ، مع الإكسسوار اللازم للوصل والتثبيت والتشغيل وكل مايلزم، وذلك من خزانات المياه الساخنة لنظام الطاقة الشمسية على السطح لتمديدات النوازل والتفريعات الداخلية ضمن الأقسام المطلوبة حسب تعليمات جهاز الإشراف.	م.ط	450
20	تقديم وتركيب تمديدات للمياه الساخنة مؤلفة من أنابيب مصنوعة من ال PPR المزود بطبقة من الألمنيوم وبقطر /20/ مم، مع العزل بطبقة عازل اسفنجي وطبقة لاصق أسود من ال PVC ، مع الإكسسوار اللازم للوصل والتثبيت والتشغيل وكل مايلزم، وذلك من خزانات المياه الساخنة لنظام الطاقة الشمسية على السطح لتمديدات النوازل والتفريعات الداخلية ضمن الأقسام المطلوبة حسب تعليمات جهاز الإشراف.	م.ط	200
21	تقديم وتركيب سكر كروي بقلب نحاسي قطر 1.25 إنش وكل ما يلزم حسب تعليمات جهاز الإشراف	عدد	4
22	تقديم وتركيب سكر كروي بقلب نحاسي قطر 1 إنش وكل ما يلزم حسب تعليمات جهاز الإشراف	عدد	4
23	تقديم وتركيب سكر كروي بقلب نحاسي قطر 0.75 إنش وكل ما يلزم حسب تعليمات جهاز الإشراف	عدد	16
24	تقديم وتركيب سكر كروي بقلب نحاسي قطر 0.5 إنش وكل ما يلزم حسب تعليمات جهاز الإشراف	عدد	4

ملاحظات:

- مشفى الرازي: يتم تأمين خمس مخارج مياه ساخنة، لأقسام العمليات والغسيل والمطبخ والحروق والمقيمين.
- مشفى النيرب: كمية المياه الساخنة المطلوب تأمينها من النظام ستغطي غرفة الولادة وغرفة الغسيل والحمام والمغاسل والغرف التي فيها مغاسل الموجودة في المشفى.

- يشترط على العارض الالتزام بما يلي:

1. مدة التنفيذ **3 أشهر: Lot-1 و Lot-2** تبدأ من تاريخ توقيع العقد مع برنامج الأمم المتحدة الإنمائي في سورية.
2. مدة التنفيذ **شهران: Lot-3** تبدأ من تاريخ توقيع العقد مع برنامج الأمم المتحدة الإنمائي في سورية.
3. يمكن تجزئة العرض بالتقديم على كل **Lot** بشكل منفصل.
4. اللجنة الفنية تعد مشرفة على متابعة عمليات التجميع والتركيب والتثبيت لضمان الحفاظ على جودة الأجهزة والتركيب.
5. يشترط على العارض المتقدم أن يكون شركة مختصة في هذا المجال ولديه حساب مصرفي وأن يكون المهندس المشرف من قبله فني ومختص في هذا المجال وممارسا للمهنة، وعليها تقديم وثائق تثبت ذلك من الجهات المعنية.
6. يشترط على العارض المتقدم أن يكون لديه خبرة ثلاث سنوات وأن يكون قد نفذ 3 مشاريع مشابهة على الأقل وعليه تقديم ما يثبت ذلك.
7. على العارض تقديم كافة المخططات البيانية والكتالوجات للأجهزة واللواقي وكافة البنود المذكورة في الجداول الفنية والتي ستستخدم في المنظومة الشمسية مع بيان مصدرها وأن تكون مكفولة لمدة لا تقل عن سنتين، وملزم بتقديم الصيانة الكاملة خلال مدة الكفالة وكل ما يلزم لتشغيلها بالشكل الأمثل. تقديم برنامج الصيانة المقترح من قبل العارض.
8. على العارض تقديم جدول مقارنة (بند - بند) للمواصفات الفنية المطلوبة والمواصفات المقدمة من قبله (نسخة ورقية وأخرى بملف ورد أو اكسل) وبيان الفروقات إن وجدت.
9. على العارض تقديم مخطط تفصيلي يبين كافة أجزاء الأنظمة وطريقة توصيلها.
10. تركيب وتثبيت منظومة الطاقة الكهربائية الشمسية مع تقديم كافة المستلزمات من ألواح الطاقة الشمسية والبطاريات والإنفترات وأجهزة وقطع خاصة وإكسسوارات لازمة وفق رأي اللجنة الفنية.
11. تركيب وتثبيت منظومة الطاقة لتسخين المياه مع تقديم كافة المستلزمات مع كافة الإكسسوارات اللازمة وفق رأي اللجنة الفنية.
12. سيتم التركيب وفق معايير محددة بوثيقة المشروع بحيث توضع اللواقي الشمسية على السطح لمشفى النيرب والرازي.
13. على العارض تقديم ضمان عمل لمدة لا تقل عن سنتين للبطاريات وباقي التجهيزات.
14. جميع الأجزاء المتممة من قواعد وحوامل معدنية وقطع خاصة وإكسسوارات ووصلات وجميع الأجزاء المعدنية وقطع التثبيت والحوامل يجب أن تكون من النوع المتين ومحمية من الصدأ أو الأكسدة.
15. على العارض معاينة موقع العمل **بوجود المهندس الدارس** للأنظمة ومطابقة الأعمال المطلوبة وفق المذكور في المواصفات الفنية وكشف الأعمال المبينة أعلاه وبناء عليه يقدم عرضه **ولا يتم قبول العروض التي لم يشارك مقدميها بالزيارة الميدانية**
16. يحق للجنة الفنية المشرفة على المشروع تعديل أي بند من بنود الأعمال ضمن المبالغ المحددة ووفق مقتضيات العمل ورأي الجهة المعنية واللجنة الفنية على المشروع.
17. سيتم تركيب وتقديم وتجميع كافة مستلزمات منظومة الطاقة الكهربائية الشمسية من قبل نفس المورد.
18. سيتم تركيب وتقديم وتجميع كافة مستلزمات منظومة الطاقة الشمسية لتسخين المياه من قبل نفس المورد.
19. عملية نقل التجهيزات من لواقط شمسية وتجهيزات أخرى لمواقع التركيب وتركيب وتثبيت الأجهزة مع تقديم الكابلات اللازمة وكافة الروافع والآليات اللازمة للعمل تقع على مسؤولية العارض ووفق رأي اللجنة الفنية. هذا مشروع مفتاح باليد وعلى العارض تسليم المنظومات جاهزة للاستثمار من قبل المستفيد.
20. على المتعهد الذي يرسو عليه العقد القيام بتدريب المهندسين الذين تقوم الجهة المستفيدة بتعيينهم على كافة أمور الصيانة والاستثمار الأمثل للمنظومات وتقديم كتاب إلى مكتب الـ **UNDP** في دمشق موقع من قبل الجهة المستفيدة يؤكد أن التدريب قد تم.
21. يتم خصم 0.5 بالآلاف عن كل يوم تأخير من قيمة العقد على أن لا تتجاوز مدة التأخير أكثر من 20 يوم.

22. يتم حساب كشف الأعمال المنفذة وفق الأعمال الفعلية والمنجزة ويوقع على الكشف اللجنة الفنية بعد إجراء اختبار التشغيل لكافة الأجهزة ومدى كفاءتها ، ويتم تنظيم محاضر تركيب للأجهزة ويصدق من اللجنة الفنية والجهة المعنية، ويتم الصرف وفق ذلك وبالسعر المقدم بالعرض وبالليرة السورية {حسب سعر صرف UN في حال العرض مقدم بالدولار} وحسب الكميات المقررة والمذكورة بالجدول أعلاه.
23. يتوجب على المتعهد تعيين لا يقل عن 50 عامل خلال مدة المشروع وفق معايير اختيار العمال المعتمدة لدى برنامج الأمم المتحدة الإنمائي والمذكورة بنص المقترح وذلك في أعمال نقل وتجميع وتركيب وتثبيت التجهيزات، وعليه دفع التعويضات المستحقة والمتعارف عليها لهم وفق جداول أجور معتمدة لدى البرنامج وعليه إبراز الجداول وتسليمها لإدارة المشروع والتي تعتبر وثيقة من وثائق المشروع .
24. يتحمل العارض المسؤولية الكاملة على كل ضرر يقع على العمال والأجهزة قبل التسليم، كما يتحمل العارض دفع كافة الأجور المستحقة لعاملي المشروع.
25. لا يتم صرف قيمة البند في حال مخالفة أي محتوى فيه.
26. على العارض الالتزام بالشروط المتعلقة بتنفيذ الأعمال المذكورة أعلاه وفق معايير ومواصفات الجهات المعتمدة بهذا المجال.
27. يتم الصرف على دفعة واحدة عند الاستلام النهائي لأعمال التركيب ووضع المنظومات في الخدمة.
28. جميع إجراءات التعاقد ستتم وفق أنظمة برنامج الأمم المتحدة الإنمائي في سورية.

الملاحق:

سطح مشفى الرازي:



سطح مشفى النيرب:



Lot 1

Technical specifications and works required for the installation of a Solar Power System for Al-Nairab Hospital and a UPS for Al-Razi Hospital:

The Purpose of the Project:

- **LOT 1:** Providing electric power and lighting for some medical equipment generated from solar energy at Al-Nairab Hospital in addition to a UPS system at Al-Razi Hospital in Aleppo.
- **LOT 2:** Providing hot water, via solar water heating systems, at two Aleppo hospitals (Al-Nairab and Al-Razi).
- **LOT3:** Rehabilitating part of the roof of Al-Razi Hospital.

The Project Contents:

Generating electricity from the solar energy:

- Solar panels + pedestals + AC & DC earthing system + lightning rod + cells pedestals
- MPPT charger
- Hybrid inverter (solar energy + electricity grid) with a real sine wave.
- Dry gel cells specially made for solar energy applications.
- Uninterruptible power supply units (UPS)
- AC distribution panel + breakers + accessories
- All other accessories and supplies, wiring, breakers, protection requirements in addition to earthing, lightning protection, surge protection, AC & DC insulators.

Al-Nairab Hospital:

- The whole hospital building shall be supplied with an electro-solar power system after excluding the thermal loads, air conditioning, sterilizers, x-ray units (and the loads whose suspension does not pose any risk to the hospital's medical performance), which ensure the performance of these facilities for 10 hours at night based on the actual night operation that forms 50% of the overall capacity, as well as operating these facilities for 6 hours during the day based on the power generated from the solar panels and cells, in case of the failure of the main network and reserve generators.
- Three 3-watt online UPS units shall be distributed on three main facilities to supply the sensitive loads such as incubators, intensive care units and resuscitation units.
- The capacity of the panels intended to install is approximately 15kw and that of the electro-solar inverters is 3-phase 15kva.
- The main reason behind designing the system with 3-phase 15kva capacity is meeting the technical needs of the hospital electric grid and solar energy system as well as the possibility of installing additional equipment at a later stage, since the hospital is under development and creating new departments.

- **Al-Nairab Hospital Loads to be photo-electrically supplied**

Room	Device	Number	Overall estimated capacity
Incubators room	Incubator	2	3000 watts
	Lighting	4	80 watts
Intensive care unit	Monitor	1	300 watts
	Lighting	4	80 watts
Doctors' room	Lights only	4	400 watts
Resuscitation room	Lights only	4	
2 patients overnight room	Lights only	8	
Laundry room	Lights only	4	
Ambulance room	Electrocardiograph	1	300 watts
	Oxygen ventilator	1	300 watts
	Nebulizer	1	300 watts
	Suction device	1	300 watts
	Lighting	16	320 watts
Overall capacity			5380 watts

NB:

The contractor shall provide a drawing for the supplied solar power system (3 systems) with all the equipment details. Moreover, he shall provide the technical brochures of all the main and additional parts provided (breakers, earthing system, surge protection, cell fuses, insulators, cable connector boxes, etc.) Any bid without the aforementioned details shall be declined.

Technical Specifications

Al-Nairab Hospital				
Items to be Supplied*	Qty	Unit	Description/Specifications of Goods	Latest Delivery Date
<i>Inverter</i>	3	Item	<p>1. Hybrid solar inverter:</p> <ul style="list-style-type: none"> • Providing and installing a hybrid electro-solar inverter • 5kva capacity – <u>real sine wave</u> • Two MPPT charger • Charger voltage input 60-115VDC • Maximal input current from solar panels 2x60A • Maximal input current from the grid or generator 60A • Ability of connecting the inverters output to have a 3-phase output • The maximal voltage it tolerates ≥ 145 (Voc) • The MPPT charger input voltage 60~115 VDC (Vmpp) • The AC input voltage 230 • Conversion time 10-20 milliseconds • Frequency of the AC input 50/60\pm5% (Hz) • AC output voltage 230 VAC • Output efficiency not less than 90% • Maximal input capacity from solar panels 6000 watt • Maximal flow capacity tolerance up to 1000 V Amp • Chargers maximal efficiency not less than 98% • Temperature during operation 0-55°C • Operation during humidity no less than 0~95% • Batteries connection voltage 48VDC • Provided with LCD • Protection degree from the fluctuations of the input/ output voltage, overload, short and temperature • Operates on all types of liquid open and dry closed cells • Manufactured by an international company like Victron, SMA or an equivalent and according to IEC standards 	<p style="text-align: center;">3 months from the date of signing the contract</p>
<i>Electro-solar panel</i>	54	Item	<p>2. PV-solar panel:</p> <ul style="list-style-type: none"> • Providing and installing PV-solar panels of a capacity no less than 280w according to STC and NOCT test conditions. • 60 sequential cells in the electro-solar panels • Cell type: monocrystalline or polycrystalline • Maximal capacity not less than 280wp • Panels fill factor not less than 75% • Nominal operation voltage 24V • Open circuit voltage not less than 38.5v • Short circuit current greater or equal to 9.3A • Maximal power current ≥ 8.9 Amp 	

			<ul style="list-style-type: none"> • Maximal power voltage $\geq 31V$ • Panel outcome $\geq 16\%$ • Insulated connection box: IP67 with protection diodes plus a gel or silicon insulator to fill the box and protect it from humidity and water • MC4 connectors • Surface glass made from hardened glass specially made for electro-solar panels (with a low iron ratio) • Oxidized aluminum frames • Panels shall face the south with a 40-45° inclination • The bidder shall attach the following original documents: <ul style="list-style-type: none"> ○ A test report and a valid certificate from one of the best internationally accredited quality assurance bodies for the panels specifications that meet the standards: IEC/EC 61215- IEC 61730 ○ A test report and a valid certificate from one of the best internationally accredited quality assurance bodies for the glass boards used in manufacturing the panels. ○ A test report and a valid certificate from one of the best internationally accredited quality assurance bodies for the specifications of the EVA material used in manufacturing the panels and their components. ○ A test report and a valid certificate from one of the best internationally accredited quality assurance bodies for the specifications of the back cover used in manufacturing the panels ○ A test report and a valid certificate from one of the best internationally accredited quality assurance bodies for the specifications of the cable used in manufacturing the panels. ○ A note from the panel manufacturing company stating the warranty of the panels and the guarantee conditions, which must be 10 years, at least. ○ A note from the panel manufacturing company technically supporting the bidder in his bid. 	
Compilers	6	Item	<p>3. Providing and installing the PV compilers with protection fuses, diodes, a breaker and surge protection</p>	
Cells	24	Item	<p>4. Cells (batteries)</p> <ul style="list-style-type: none"> • Providing and installing a set of 4800amp-hr/48v cells • Dry Cell type: Deep Cycle- Gel, or Tubular open batteries • 200amp-hr/12v • Cell Nominal voltage: 12v • Cell nominal capacity: 200Ah per 10hrs of discharge for 1.8v cells • Internal resistance no more than 3.6mΩ • Maximal current allowed for charging no less than 40A • Cell weight no less than 60kg • Auto-discharge no more than 5% per month at a 20°C 	

			<p>temperature</p> <ul style="list-style-type: none"> • Virtual age no less than 10 years at a 20°C temperature • Charge/discharge times at a 20°C temperature and in ideal conditions no less than 1600 cycles at a discharge curve of 50%DOD • Technical age ≥3 years • Operation temperature 0 to 55° • Must meet the EU and British standards and specifications • Cell warranty must be no less than 2 years from the installation date. • Cell age no more than 6 months from the manufacturing date 	
Panel metal pedestal	No less than 490Kg	Item	<p>5. Metal pedestal:</p> <ul style="list-style-type: none"> • Made from aluminum or iron and coated with an insulation paint layer and two layers of paint • Installation towards the south at 40°angle • The contractor shall provide a constructional study for the sections and formation used in installing the panels to meet the safety standards in Syria in terms of 140km/h winds • The contractor shall pay a field visit to the installation site with the presence of the project engineer 	
	100	Kg	6. Providing and installing metal pedestals for the cells coated with two layers of paint	
Electric cables	No less than 25m	M	7. Providing and installing 6*24mm wire cables specially made for solar energy applications	
	No less than 50m	M	8. Providing and installing 4*24mm brass wire cables specially made for solar energy applications.	
Place for solar inverters	150	Kg	9. Providing and installing a well-ventilated place for the solar inverters with cells in a sandwich panel close to the panels, to be determined by the supervisory body/ kg	
Electric Panel	1	Item	10. Adding a new electric panel and modifying some wirings in the main panel	
Main Breaker	2	Item	11. Providing and installing a 40amp main breaker, brand ABB or an equivalent	
Switch Breaker	1	Item	12. Providing and installing a four-switched 40Amp switch breaker	
Mechanical Lock	1	Item	13. Providing and installing a mechanical lock	
Signal Lamp	2	Item	14. Providing and installing a signal lamp	
Network Analyzer	1	Item	15. Providing and installing network analyzer	
Converters	6	Item	16. Providing and installing converters	
Junction Boxes	10	item	17. Providing and installing junction boxes (16mm + 6mm)	
Accessories	1	Item	18. Providing and installing tubes and sockets	
Single Phase Breaker	5	Item	19. Providing and installing a 15amp single phase breaker, brand Eaton or an equivalent	
UPS	3	Item	20. An Uninterruptible Power Supply Unit – UPS	

			<ul style="list-style-type: none"> • True online UPS • Capacity: 3000w/3000va • Input voltage 220vac • Input frequency 40-70Hz • Capacity factor $\geq 0.99\%$ • THDI $\leq 5\%$ • Output voltage: 220vac $\pm 1\%$ • Output frequency 47-53Hz • Conversion time: no more than 4milliseconds • Real sine wave output • Outcome more than 90% • Full load battery time: no less than 10 minutes • LCD showing operation status, load rate, battery level, input/output voltages, discharge time and warnings • Audio warning • Bypass • Device must meet IEC-EN62040-2 C1 and EN62040-2 C2 • Noise less than 50dbA at 1m • Manufactured by Triplite or an equivalent 	
Earthing System	1	Item	21. Providing and installing a complete earthing system provided that the resistance does not exceed 5Ω	
Lightning rod system	1	Item	22. Providing and installing a complete lightning rod system in conformity with the Syrian code in addition to DC & AC surge protection devices.	

NB: Installation and connection shall be conducted to Al-Nairab hospital main grid. The entire hospital shall be lighted in addition to operating some main devices/appliances in case of emergency in the hospital main supply system. Exchange and alternation between the two systems (solar energy and main grid) shall be conducted. Loads that cannot be solar-powered such as water heaters, laundry department, x-ray unit and air conditioning shall be disconnected.

Items to be Supplied	Qty	Unit	Description/Specifications of Goods	Latest Delivery Date
Al-Razi Hospital				
UPS Unit	1	Item	1. Providing and installing a UPS unit <ul style="list-style-type: none"> • True online UPS • Capacity: 48kw/ 60kva • 3-phase Input voltage 380vac • Input voltage 304-456v alternating • Input frequency 50Hz $\pm 10\%$ • Capacity factor ≥ 0.8 • THDv $\leq 4\%$ for non-linear loads • Output voltage 220vac $\pm 1\%$ • Output frequency 50Hz $\pm 1\%$ 	3 months from the date of signing the contract

			<ul style="list-style-type: none"> • Conversion time 0 millisecond • Real sine wave output • Outcome more than 90% • Full load battery time no less than 10 minutes • LCD showing operation status, load rate, battery level, input/output voltages, discharge time and warnings • Audio warning • Bypass • Device must meet IEC–EN62040-2 C1and EN62040-2 C2 • Noise less than 70dbA at 1m • Manufactured by Triplite or an equivalent • All required materials including cables, etc. 	
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Lot-2:

**Technical specifications and works required for installation of
Solar Water Heating Systems for Al-Nairab and Al-Razi Hospitals**

The Project Contents:

Providing hot water from via solar energy:

- Solar panels with a pipe system
- PLC device
- Cold water tanks
- Tanks pedestals
- Hot water tanks
- Cylinders attached to the tanks
- Valves, pumps, pipes and accessories

Al-Nairab Hospital				
Items to be Supplied	Quantity	Unit	Description/Specifications of Goods	Latest Delivery Date
Vacuum-piped solar systems for heating water	3	Item	<p>1. Providing and installing a set of hollow-piped solar systems for heating water with the following specifications:</p> <ul style="list-style-type: none">- The receiver operates based on the hollow pipes- The solar receiver pipes shall have ISO9001, must be easily installed, uninstalled and replaced.- The vacuum pipes must be 30pipes per receiver- Hollow pipe specification: 1.8m long, 5.8cm outside diameter/ 4.7cm inside diameter, 3-layered with a discharge indicator- Hot water tank capacity is 300 Lt. with a hole for installing the electric heater inside it- The interior surface in contact with water is 304 chromes- Thickness of the interior layer 0.5mm and that of the sides 0.8mm- The input/output connectors must be argon-welded metal with a 1 inch or 1¼ inch vent- At least 50mm thick foam insulated- 0.4mm thick 430 stainless steel coated from the outside- No less than 1mm thick stainless-steel holder with rear focal reflectors- Receivers shall be connected together on site according to the supervisory body's instructions	3 months from the date of signing the contract for all items
1500w electric water heaters	3	Item	<p>2. Providing and installing electric water heaters (1500w minimum) into the hot water tanks with all that is required</p>	

1000 liters Water tank	1	Item	3. Providing and installing a 1000lt. 2mm thick galvanized metal tank to supply cold water. The tank shall have a proper pedestal, equipped with a floater and refill the hot water tanks. It is to be placed in the site determined by the supervisory body with all the required accessories.	
Water Pump	1	Item	4. Providing and installing a 0.5hp water pump for the cold-water tank with all the accessories required	
Water pump with a timer	1	Item	5. Providing and installing a 0.5hp water pump with a timer to be used with hot water with all the accessories required	
Digital controller	1	Item	6. Providing and installing a digital control device with the equipment and accessories required inside a metal or plastic box to protect it from weather conditions (sun, rain, etc.) with the programming and adjustment required to control: <ul style="list-style-type: none"> - The cold-water tank pumping - The supporting electric water heaters, when needed, through contactors 	
Aluminum-coated PPR pipes network	95	M	7. Providing and installing cold water and hot water system pipes made from aluminum-coated PPR pipes with an operational pressure not less than 10bar, a diameter of 25mm, an insulation with a sponge insulator covered with a black PVC adhesive tape and all accessories required	
	80	M	8. Providing and installing cold water and hot water system pipes made from aluminum-coated PPR pipes with an operational pressure not less than 10bar, a diameter of 32mm, an insulation with a sponge insulator covered with a black PVC adhesive tape and all accessories required	
	50	M	9. Providing and installing cold water and hot water system pipes made from aluminum-coated PPR pipes with an operational pressure not less than 10bar, a diameter of 40mm, an insulation with a sponge insulator covered with a black PVC adhesive tape and all accessories required	

2. Al-Razi Hospital

Items to be Supplied	Quantity	Unit	Description/Specifications of Goods	Latest Delivery Date
Solar receivers with vacuum pipes	48	Item	1. Providing and installing a set of solar receivers with hollow glass pipes with the following specifications: <ul style="list-style-type: none"> - The receiver operates based on vacuum pipes - The solar receiver pipes shall have ISO9001, must be easily installed, uninstalled and replaced. - Vacuum pipe specifications: 1.8m long, 5.8cm outside diameter/ 4.7cm inside diameter, 3-layered with a discharge indicator - The hollow pipes must be 30pipes per receiver - The interior surface in contact with water is 304 chrome - Thickness of the interior layer 0.5mm and that of the sides 0.8mm - 40-45mm thick foam insulated - 0.4mm thick 430 stainless steel coated from the outside - The input/output connectors must be argon-welded metal with a 1inch or 1¼ inch hole size - No less than 1mm thick stainless-steel holder with rear focal reflectors - Receivers shall be connected and with the cold/hot water tanks on sites within main and subordinate groups according to the supervisory body's instructions 	3 months from the date of signing the contract for all items
2000 Lt. water tanks	4	Item	2. Providing and installing 2000 Lt. water tanks as per the following specifications: <ul style="list-style-type: none"> - Made from galvanized stainless steel with a thickness of at least 2mm and a proper interior support - The specifications and dimensions of the inspection and maintenance hole in addition to the input/output holes shall be determined by the supervisory committee - Equipped with a quality floater - Provided with a proper metal pedestal 	
2000 Lt. water tank with a special pedestal	1	Item	3. Providing and installing 2000 Lt. water tank with a special pedestal as per the following specifications: <ul style="list-style-type: none"> - Made from galvanized stainless steel with a thickness of at least 2mm and a proper interior support - The specifications and dimensions of the inspection and maintenance hole in addition to the input/output holes shall be determined by the supervisory committee - Equipped with a quality floater - Provided with a 4x4cm profile iron pedestal with 8 legs of the same material and a 2.5m high section from the bottom of the pedestal. Horizontal supports of the same material shall be added between the legs each of which is based on a 20x20cm metal plate with a thickness of 2mm (the plates 	

			shall be welded with the legs on site taking into account the floor tiles tilting)	
1500 Lt hot water tanks	4	Item	<p>4. Providing and installing 1500 Lt hot water tanks with pedestals or legs as per the following specifications:</p> <ul style="list-style-type: none"> - The thermal exchanger (brand 'Jacket') shall be made from 4mm thick galvanized stainless steel - The interior body shall be also made from 4mm thick galvanized stainless steel - Tanks shall be insulated with 8-10cm layers of asbestos to be covered with a water-resistant treated cloth - Each tank shall be equipped with a proper floater to be externally installed 	
1000 Lt hot water tanks	3	Item	<p>5. Providing and installing 1000 Lt hot water tanks with pedestals or legs as per the following specifications:</p> <ul style="list-style-type: none"> - The thermal exchanger (brand 'Jacket') shall be made from 4mm thick galvanized stainless steel - The interior body shall be also made from 4mm thick galvanized stainless steel - Tanks shall be insulated with 8-10cm layers of asbestos to be covered with a water-resistant treated cloth - Each tank shall be equipped with a proper floater to be externally installed 	
500 Lt hot water tank	1	Item	<p>6. Providing and installing an additional 500 Lt tank to be annexed to the hot water tanks to supply the burn department, as per the following specifications:</p> <ul style="list-style-type: none"> - The thermal exchanger (brand 'Jacket') shall be made from 2mm thick sterilisable 304 Chrome - The interior body shall be also made from 2mm thick sterilisable 304 Chrome - The tank shall be insulated with a 5cm layer of foam to be covered with a 0.8mm thick galvanized metal - The tank shall be equipped with a firmly closed special hole to add water sterilizers - The tank shall be equipped with a proper floater to be externally installed 	
Adjustable water pump	1	full	<p>7. Providing and installing adjustable water pumps to be used for hot water (with a 1.25-2inch outlet) in capacities enough for moving water between the hot water tanks and the solar receivers in a way ensuring an efficient water heating function in conformity with the actually executed water supply network (more than one pump may be installed onto one line to reach the desired purpose) as per the supervisory body's instructions</p>	
Water Pumps	5	Item	<p>8. Providing and installing 0.5hp pumps to be used for hot water to rotate water in the network connecting the hot water tanks and the hospital supplied departments, with all the accessories required and, in the sites, determined by the supervisory body</p>	

PLC device with sensors	1		<p>9. Providing and installing a PLC device with sensors and supplies required in addition to programming it according to the system needs and the supervisory body's instructions. It shall have the following specifications:</p> <ul style="list-style-type: none"> - Ability to be connected to 24 thermal sensors minimum - To have 4 inputs minimum - To have 4 outputs minimum - To have 16 digital inputs minimum - To have 24 digital outputs minimum - The panel must have signal lamps showing the function of each of the system parts connected to it in addition to audio-visual alarm elements to be placed indoor in a site determined by the supervisory body. - To be connected to an appropriate cell equipped with an appropriate automatic charger so that the cell ensures the functionality of the control system for at least 30 minutes in case of voltage failure. - The device must be installed with the cell and charger at a proper site on the roof (approved by the supervisory body) set in a metal or plastic box ensuring their protection from climate conditions (sunlight, rain, etc.) - To ensure controlling the following: <ul style="list-style-type: none"> o Switching on/off the system o Organising the heating of water inside the hot water tanks through controlling the rotational pumps between the solar receivers and hot water tanks, and reading the temperatures required, taking into account having 3 separate parts of the system one of which with a special tank with water to be sterilized. o Controlling the operation of pumps timely programmed as per the month, day, day/night hours and the outdoor temperature. o Automatically continuing work via the battery in case of voltage failure. o Showing breakdowns and operating the alarm elements, including: <ul style="list-style-type: none"> • Water leakage problems • Water heating problems (e.g. failure of the rotational pumps) • Voltage failure 	
0.75-inch ball valves	30	Item	10. Providing and installing 0.75-inch brass ball valves with all that is required	3 month s from the date of signing the contra
Aluminum-coated PPR pipes network	300	M	11. Providing and installing network supplies to connect the cold and hot water tanks, consisting of aluminium coated PPR pipes with an operational pressure not less than 10 bar, a diameter of 25mm, an insulation made from sponge insulator and a layer of black PVC adhesive tape with all the required accessories.	

	110	M	12. Providing and installing network supplies to connect the cold and hot water tanks, consisting of aluminium coated PPR pipes with an operational pressure not less than 10 bar, a diameter of 32mm, an insulation made from sponge insulator and a layer of black PVC adhesive tape with all the required accessories.	ct
	125	M	13. Providing and installing network supplies to connect the cold and hot water tanks, consisting of aluminium coated PPR pipes with an operational pressure not less than 10 bar, a diameter of 40mm, an insulation made from sponge insulator and a layer of black PVC adhesive tape with all the required accessories.	
Non-return valves	30	Item	14. Providing and installing 0.75-inch brass non-return valves	
	10	Item	15. Providing and installing 1-inch brass non-return valves of good quality	
	10	Item	16. Providing and installing 1.25-inch brass non-return valves of good quality	

Important Note:

Providing and installing network supplies requirements between cold water tanks and others between hot water tanks, provided that the latter end at pipes collectors whose diameter does not exceed 2 inches (price shall be added to the supplies mentioned in items 11,12 & 13)

Moreover, it is important to take into account during the installation of the hospital hot water pipes that the outputs be converged (via additional supplies whose prices is to be added to that of supplies mentioned in Items 11,12 & 13) in order to distribute the heating capacity onto all the water supplied parts in case of difference in the consumption rates between the different departments.

Lot-3

Works required for the maintenance and rehabilitation of part of the roof of Al-Razi Hospital in Aleppo in preparation for installing solar-energy power generation & water heating systems for the hospital

No	Works Description	Unit	Qty	Delivery Period
1	Removing and rewiring electrical cables on the roof in addition to executing maintenance. This includes lifting the cables to conclude the roof works, properly connecting the cables, providing the worn and missing parts, etc. according to the instructions of the supervisory body, with all that is required	Full	1	2 Months from the date of signing the contract
2	Removing the old flat solar receivers on the roof and admitting them to the management warehouse	Full	1	
3	Uninstalling the water tanks, removing the metal beams of the desalination room and handing in the valid ones to the management with the approval of the supervisory body after removing them from the roof with all the supplies and removing the worn parts, demolishing walls in the room on top of the roof with transferring the debris, cleaning and all that is required	Full	1	
4	Uninstalling the old rain gutters and handing them in to the management, and all other required works	Item	30	
5	Uninstalling the tiles and the layers beneath until reaching the concrete layer in the areas named by the supervisory body with transferring the debris, cleaning all that is required (removing and transferring the baseboard tiles according to the supervisory body's instructions)	m ²	900	
6	Uninstalling the roof finishing layer until reaching the concrete layer in the areas named by the supervisory body with transferring the debris, cleaning and all that is required	m ²	450	
7	Providing and executing a 250kg/ m ³ polished black cement layer on the roof with an average thickness of 5-7cm and a concrete edge of an appropriate height based on the site according to the supervisory body's instructions and all that is required	m ³	115	
8	Providing and executing a bitumen insulating layer for the roof and a 4mm thick concrete edge. The layer must not be locally made, and must be SBS polymer modified and reinforced with a 160-180g/ m ² non-simulated polyester according to the conditions and technical specifications required and all that required	m ²	1350	
9	Providing and building 15x40cm full-block gutter edges with render and polishing (the parapet, and between gutters) to ensure good drainage, and all that is required	m	175	
10	Providing and installing 40x40x3cm locally made mosaic tiles type2, with white cement provided that the mosaic thickness is not less than 12mm, in addition to polishing, grouting with insulating materials added to it, and all that is required	m ²	1350	
11	Providing and installing 10cm high polished and nicked baseboards of at least 3cm thickness of the same kind of the mosaic tiles installed on the roof (parapet and gutter edges) by using white cement and all that is required	m	675	
12	Providing and installing 4" high pressure PVC gutter pipes of 3.5mm thickness with accessories, adhesives and all that is required	m	300	

13	Providing and installing lids for the gutter sifters for the roof drainage	Item	30
14	Providing and installing 1.5" galvanized pipes for potable water on the roof with the accessories needed, cork-insulation, black adhesive PVC of the finest brands available in the local market and all that is required according to the instructions of the supervisory body	m	175
15	Providing and installing 1" galvanized pipes for potable water on the roof with the accessories needed, cork-insulation, black adhesive PVC of the finest brands available in the local market and all that is required according to the instructions of the supervisory body	m	350
16	Providing and installing 1.5" brass valve, Czech model, and all that is required as per the instructions of the supervisory body	Item	8
17	Providing and installing cold water and hot water system pipes made from aluminum-coated PPR pipes with a diameter of 40mm, an insulation with a sponge insulator covered with a black PVC adhesive tape and all accessories required from hot water tanks of solar system exists on roof to the connections & sub-connections within required sectors and according to the instructions of the supervisory body	m	150
18	Providing and installing cold water and hot water system pipes made from aluminum-coated PPR pipes with a diameter of 32mm, an insulation with a sponge insulator covered with a black PVC adhesive tape and all accessories required from hot water tanks of solar system exists on roof to the connections & sub-connections within required sectors and according to the instructions of the supervisory body	m	150
19	Providing and installing cold water and hot water system pipes made from aluminum-coated PPR pipes with a diameter of 25mm, an insulation with a sponge insulator covered with a black PVC adhesive tape and all accessories required from hot water tanks of solar system exists on roof to the connections & sub-connections within required sectors and according to the instructions of the supervisory body	m	450
20	Providing and installing cold water and hot water system pipes made from aluminum-coated PPR pipes with a diameter of 20mm, an insulation with a sponge insulator covered with a black PVC adhesive tape and all accessories required from hot water tanks of solar system exists on roof to the connections & sub-connections within required sectors and according to the instructions of the supervisory body	m	200
21	Providing and installing 1.25" brass ball valves and all that is required as per the instructions of the supervisory body	Item	4
22	Providing and installing 1" brass ball valves and all that is required as per the instructions of the supervisory body	Item	4
23	Providing and installing 0.75" brass ball valves and all that is required as per the instructions of the supervisory body	Item	16
24	Providing and installing 0.5" brass ball valves and all that is required as per the instructions of the supervisory body	Item	4

NB:

Al-Razi Hospital: Five hot water outlets shall be ensured for the departments of operations, laundry, kitchen, burns and residents

Al-Nairab Hospital: The quantity of the hot water to be ensured must meet the needs of the delivery room,

laundry room, WC facilities, and the rooms with sinks

The bidder is required to comply with the following:

1. Execution period: 3 months for Lot-1 and Lot-2 starting from the date of signing the contract with the United Nations Development Program in Syria.
2. The period of execution is two months for Lot-3 starting from the date of signing the contract with the United Nations Development Program in Syria
3. The bid can be divided per Lot.
4. The Technical Committee is responsible for monitoring the assembly, installation and fixation to ensure the maintenance of the quality of the equipment and installation.
5. The bidder shall be required to be a specialized company in this field with a private bank account. The supervising engineer shall be an expert technician in this field and practicing the profession and shall submit a supporting document from the concerned authorities.
6. The bidder shall have three years of experience and have executed at least 3 similar projects, of which he shall provide evidence.
7. The bidder shall submit all the drawings and catalogs of the devices and switches and all the items mentioned in the technical tables, which shall be used in the solar systems, indicating their source and shall be guaranteed for a period of no less than two years, and shall be subject to full maintenance during the warranty period and all necessary requirements to operate them in the optimum way.
8. The bidder shall submit a comparison table (item by item) of the required technical specifications and specifications provided by him (a hard copy and another in a Word or Excel file) in addition to a statement of differences, if any.
9. The bidder shall submit a detailed outline showing all parts of the systems and their connection/installation method.
10. The installation and fixation of the solar power system with the provision of all the supplies of solar panels, batteries, inverters, devices, special parts and accessories required in accordance with the opinion of the Technical Committee.
11. Installing and fixing the energy system to heat the water with the provision of all supplies with all the accessories required in accordance with the opinion of the Technical Committee.
12. The installation shall be according to the criteria specified in the project document, so that the solar receivers shall be placed on the roof of the Nairab and Al-Razi hospitals.
13. The bidder shall provide a warranty for a period no less than two years for both the batteries and the remaining equipment.
14. All parts completed from pedestals, metal bearings, special parts, fittings, joints, all metal parts, fasteners and holders shall be of a solid type and protected from rust or oxidation.
15. The bidder shall inspect the work site **in the presence of the engineer** studying the regulations and matching the required works in accordance with the mentioned in the technical specifications and the checklist of the works described above, and accordingly he shall submit his offer. **Bids whose owners did not take part in the field visit shall not be accepted.**
16. The Technical Committee supervising the project shall have the right to amend any item of work within the amounts specified in accordance with the work requirements and the opinion of the concerned authority and the technical committee of the project.
17. All solar power system requirements shall be installed, supplied and assembled by the same supplier.
18. All solar power system requirements for heating water shall be installed, supplied and assembled by the same supplier.
19. The transfer of equipment including solar water heaters and other equipment to the installation sites, and the installation and fixation of the equipment with the necessary cables and all cranes and

vehicles necessary for the work are the responsibility of the bidder and according to the opinion of the technical committee. This is a turnkey project and the bidder must deliver the systems ready for investment by the beneficiary.

20. The winning contractor shall undertake the training of the engineers who are appointed by the beneficiary on all matters of maintenance and optimal investment of the systems and submit a note to the UNDP office in Damascus, signed by the beneficiary confirming that the training has been done.
 21. A rate of 0.5% per day shall be deducted from the contract value provided that the delay shall not exceed 20 days.
 22. The list of executed works shall be calculated according to the actual and completed works. The Technical Committee shall sign after the operating test for all the devices and the verification of their efficiency. The installation records shall be organized by the technical committee and the concerned authority. Payment shall be affected accordingly and at the price offered in the bid in the Syrian pound (UN exchange rate in case the bid was done in US dollars) and according to the amounts prescribed in the table above
 23. The contractor must appoint at least 50 workers during the period of the project in accordance with the workers selection criteria in UNDP mentioned in the text of the proposal in the transfer, assembly, installation and fixation of equipment. Accordingly, payment shall be done according to the norms and UNDP rates. Payrolls shall be submitted to project management as a project document.
 24. The bidder shall be fully responsible for any damage caused to workers and equipment prior to delivery and shall bear all the wages of the project workers.
 25. The value of an item shall not be disbursed if any content is violated.
 26. The bidder shall comply with the conditions related to the implementation of the aforementioned works in accordance with the standards and specifications of the accredited bodies in this field.
 27. Payment shall be made in one lump sum upon the final receipt of the installation works and the systems entry in service.
 28. All contracting procedures shall be in accordance with the UNDP regulations in Syria.
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Appendices

Al-Razi Hospital Roof



Al-Nairab Hospital Roof



Section 5b: Other Related Requirements

Further to the Schedule of Requirements in the preceding Table, Bidders are requested to take note of the following additional requirements, conditions, and related services pertaining to the fulfillment of the requirements: *[check the condition that applies to this ITB, delete the entire row if condition is not applicable to the goods being procured]*

Delivery Term [INCOTERMS 2010] <i>(Pls. link this to price schedule)</i>	DAP
Exact Address of Delivery/Installation Location	Aleppo city for the three lots
Mode of Transport Preferred	No preferred mode of transport
UNDP Preferred Freight Forwarder, if any	N/A
Distribution of shipping documents <i>(if using freight forwarder)</i>	N/A
Customs, if required, clearing shall be done by:	Supplier
Ex-factory / Pre-shipment inspection	No
Inspection upon delivery	Yes
Installation Requirements	Yes
Testing Requirements	Yes
Scope of Training on Operation and Maintenance	Yes, train technical staff on operation and maintenance before handing over the project.
Commissioning	yes
Warranty Period	Two years
Local Service Support	yes
Technical Support Requirements	yes
After-sale services Requirements	<input checked="" type="checkbox"/> Warranty on Parts and Labor for minimum period of 2 years <input checked="" type="checkbox"/> Technical Support
Payment Terms <i>(max. advanced payment is 20% as per UNDP policy)</i>	100% within 30 days upon UNDP's acceptance of the goods delivered as specified and receipt of invoice
Conditions for Release of Payment	<input checked="" type="checkbox"/> Inspection upon arrival at destination <input checked="" type="checkbox"/> Installation <input checked="" type="checkbox"/> Testing <input checked="" type="checkbox"/> Training on Operation and Maintenance <input checked="" type="checkbox"/> Written Acceptance of Goods based on full compliance with ITB requirements
All documentations, including catalogues, instructions and operating manuals, shall be in this language	English

Section 6: Returnable Bidding Forms / Checklist

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

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

Technical Bid:

Have you duly completed all the Returnable Bidding Forms?	
▪ Form A: Bid Submission Form	<input type="checkbox"/>
▪ Form B: Bidder Information Form	<input type="checkbox"/>
▪ Form C: Joint Venture/Consortium/ Association Information Form	<input type="checkbox"/>
▪ Form D: Qualification Form	<input type="checkbox"/>
▪ Form E: Format of Technical Bid/Bill of Quantities	<input type="checkbox"/>
▪ Form G: Form of Bid Security	
▪ [Add other forms as necessary]	<input type="checkbox"/>
Have you provided the required documents to establish compliance with the evaluation criteria in Section 4?	<input type="checkbox"/>

Price Schedule:

▪ Form F: Price Schedule Form	<input type="checkbox"/>
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Form A: Bid Submission Form

Name of Bidder:	[Insert Name of Bidder]	Date:	Select date
ITB reference:	[Insert ITB Reference Number]		

We, the undersigned, offer to supply the goods and related services required for [Insert Title of goods and services] in accordance with your Invitation to Bid No. [Insert ITB Reference Number] and our Bid. We hereby submit our Bid, which includes this Technical Bid and Price Schedule.

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

We hereby declare that our firm, its affiliates or subsidiaries or employees, including any JV/Consortium /Association members or subcontractors or suppliers for any part of the contract:

- 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 UN staff member within the last year, if said UN staff member has or had prior professional dealings with our firm in his/her capacity as UN staff member within the last three years of service with the UN (in accordance with UN post-employment restrictions published in ST/SGB/2006/15);
- 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, with the UN or any other party, and to conduct business in a manner that averts any financial, operational, reputational or other undue risk to the UN and we embrace the principles of the United Nations Supplier Code of Conduct and adhere to the principles of the United Nations Global Compact.

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

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

Our Bid 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 Bid you receive.

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

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]
Are you a UNGM registered vendor?	<input type="checkbox"/> Yes <input type="checkbox"/> No If yes, [insert UGNM vendor number]
Are you a UNDP vendor?	<input type="checkbox"/> Yes <input type="checkbox"/> No If yes, [insert UNDP vendor number]
Countries of operation	[Complete]
No. of full-time employees	[Complete]
Quality Assurance Certification (e.g. ISO 9000 or Equivalent) (If yes, provide a Copy of the valid Certificate):	[Complete]
Does your Company hold any accreditation such as ISO 14001 or ISO 14064 or equivalent related to the environment? (If yes, provide a Copy of the valid Certificate):	[Complete]
Does your Company have a written Statement of its Environmental Policy? (If yes, provide a Copy)	[Complete]
Does your organization demonstrates significant commitment to sustainability through some other means, for example internal company policy documents on women empowerment, renewable energies or membership of trade institutions promoting such issues	[Complete]
Is your company a member of the UN Global Compact	[Complete]
Contact person that UNDP may	Name and Title: [Complete]

**contact for requests for
clarifications during Bid evaluation**

Telephone numbers: [Complete]

Email: [Complete]

**Please attach the following
documents:**

- ☒ Company Profile, which should not exceed fifteen (15) pages, including printed brochures and product catalogues relevant to the goods/services being procured;
- ☒ Certificate of Registration of the business, including Articles of Incorporation, or equivalent document if Bidder is not a corporation;
- ☒ Certification or authorization to act as Agent on behalf of the Manufacturer, or Power of Attorney, if bidder is not a manufacturer;
- ☒ Official Letter of Appointment as local representative, if Bidder is submitting a Bid on behalf of an entity located outside the country;
- ☒ Statement of Satisfactory Performance from the Top Three (3) Clients in terms of Contract Value and related to similar nature and complexity to our project;
- ☒ Time schedule in compliance with the deadlines set in the ITB. Detailed work plan including the project timeline and duration for the main activities. The proposal shall be clear and comprehensive;
- ☒ In case of subcontracting, the bidder should submit the company profile, experience and team composition of the designated subcontractor;
- ☒ List and value of projects performed by the bidder with similar nature and complexity, plus client's contact details who may be contacted for further information on those contracts;
- ☒ The bidder should present graphical charts and catalogues of the provided lighting devices in addition to the country of origin,
 - ☒ The bidder should submit a statement confirming that he will provide full maintenance during the warranty period along with all requirements for optimal operation.
- ☒ The bidder should submit the CV of his supervising engineer who will supervise the execution of the project.
- ☒ Quality Certificate (e.g., ISO, etc.) and/or other similar certificates, accreditations, awards and citations received by the Bidder, if any
- ☒ Latest Audited Financial Statement (Income Statement and Balance Sheet) including Auditor's Report for the past Two (2) years
- ☒ Statement of warranty of defects in materials and workmanship and operation and performance guarantee, backed by the manufacturers guarantee on the main component, meets or exceeds the required period.

☒ Proof of after-sales service capacity (during defect liability Period) and appropriateness of local service and technical support available.

☒ A statement confirming that the vendor will employ 50 workers during the period of the project in accordance with the workers selection criteria in UNDP mentioned in the text of the proposal in the transfer, assembly, installation and fixation of equipment. Accordingly, payment shall be done according to the norms and UNDP rates. Payrolls shall be submitted to project management as a project document.

☒ A statement confirming that the bidder shall be fully responsible for any damage caused to workers and equipment prior to delivery and shall bear all the wages of the project workers

Form C: Joint Venture/Consortium/Association Information Form

Name of Bidder:	[Insert Name of Bidder]	Date:	Select date
ITB reference:	[Insert ITB Reference Number]		

To be completed and returned with your Bid if the Bid is submitted as a Joint Venture/Consortium/Association.

No	Name of Partner and contact information <i>(address, telephone numbers, fax numbers, e-mail address)</i>	Proposed proportion of responsibilities (in %) and type of goods and/or services to be performed
1	[Complete]	[Complete]
2	[Complete]	[Complete]
3	[Complete]	[Complete]

Name of leading partner (with authority to bind the JV, Consortium, Association during the ITB process and, in the event a Contract is awarded, during contract execution)	[Complete]
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We have attached a copy of the below referenced document signed by every partner, which details the likely legal structure of and the confirmation of joint and severable liability of the members of the said joint venture:

☐ Letter of intent to form a joint venture
 OR
☐ JV/Consortium/Association agreement

We hereby confirm that if the contract is awarded, all parties of the Joint Venture/Consortium/Association shall be jointly and severally liable to UNDP for the fulfillment of the provisions of the Contract.

Name of partner: _____ Name of partner: _____

Signature: _____ Signature: _____

Date: _____ Date: _____

Name of partner: _____ Name of partner: _____

Signature: _____ Signature: _____

Date: _____ Date: _____

Form D: Eligibility and Qualification Form

Name of Bidder:	[Insert Name of Bidder]	Date:	Select date
ITB reference:	[Insert ITB Reference Number]		

If JV/Consortium/Association, to be completed by each partner.

History of Non- Performing Contracts

<input type="checkbox"/> Non-performing contracts did not occur during the last 3 years			
<input type="checkbox"/> 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)

<input type="checkbox"/> No litigation history for the last 3 years			
<input type="checkbox"/> Litigation History as indicated below			
Year of dispute	Amount in dispute (in US\$)	Contract Identification	Total Contract Amount (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 Experience

Please list only previous similar assignments successfully completed in the last 3 years.

List only those assignments for which the Bidder was legally contracted or sub-contracted by the Client as a company or was one of the Consortium/JV partners. Assignments completed by the Bidder's individual experts working privately or through other firms cannot be claimed as the relevant experience of the Bidder, or that of the Bidder's partners or sub-consultants, but can be claimed by the Experts themselves in their CVs. The Bidder should be prepared to substantiate the claimed experience by presenting copies of relevant documents and references if so requested by UNDP.

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 3 years	Year	USD
	Year	USD
	Year	USD
Latest Credit Rating (if any), indicate the source		

Financial information (in US\$ equivalent)	Historic information for the last 3 years		
	Year 1	Year 2	Year 3
	<i>Information from Balance Sheet</i>		
Total Assets (TA)			
Total Liabilities (TL)			
Current Assets (CA)			
Current Liabilities (CL)			
	<i>Information from Income Statement</i>		
Total / Gross Revenue (TR)			
Profits Before Taxes (PBT)			
Net Profit			
Current Ratio			

☐ Attached are copies of the audited financial statements (balance sheets, including all related notes, and income statements) for the years required above complying with the following condition:

- Must reflect the financial situation of the Bidder or party to a JV, and not sister or parent companies;
 - Historic financial statements must be audited by a certified public accountant;
 - Historic financial statements must correspond to accounting periods already completed and audited.
- No statements for partial periods shall be accepted.

Form E: Format of Technical Bid

Name of Bidder:	[Insert Name of Bidder]	Date:	Select date
ITB reference:	[Insert ITB Reference Number]		

The Bidder's Bid should be organized to follow this format of the Technical Bid. Where the bidder is presented with a requirement or asked to use a specific approach, the bidder must not only state its acceptance, but also describe how it intends to comply with the requirements. Where a descriptive response is requested, failure to provide the same will be viewed as non-responsive.

SECTION 1: Bidder's qualification, capacity and expertise

- 1.1 General organizational capability which is likely to affect implementation: management structure, financial stability and project financing capacity, project management controls, extent to which any work would be subcontracted (if so, provide details).
- 1.2 Relevance of specialized knowledge and experience on similar engagements done in the region/country.
- 1.3 Quality assurance procedures and risk mitigation measures.
- 1.4 Organization's commitment to sustainability.

SECTION 2: Scope of Supply, Technical Specifications, and Related Services

This section should demonstrate the Bidder's responsiveness to the specification by identifying the specific components proposed, addressing the requirements, as specified, point by point; providing a detailed description of the essential performance characteristics proposed; and demonstrating how the proposed bid meets or exceeds the requirements/specifications. All important aspects should be addressed in sufficient detail.

- 2.1 A detailed description of how the Bidder will deliver the required goods and services, keeping in mind the appropriateness to local conditions and project environment. Details how the different service elements shall be organized, controlled and delivered.
- 2.2 Explain whether any work would be subcontracted, to whom, how much percentage of the requirements, the rationale for such, and the roles of the proposed sub-contractors and how everyone will function as a team.
- 2.3 The bid shall also include details of the Bidder's internal technical and quality assurance review mechanisms.
- 2.4 Implementation plan including a Gantt Chart or Project Schedule indicating the detailed sequence of activities that will be undertaken and their corresponding timing.
- 2.5 Demonstrate how you plan to integrate sustainability measures in the execution of the contract.

Goods and services to be Supplied and Technical Specifications	Your response				
	Compliance with technical specifications		Delivery Date <i>(confirm that you comply or indicate your delivery date)</i>	Quality Certificate/Export Licenses, etc. <i>(indicate all that apply and attach)</i>	Comments
	Yes, we comply	No, we cannot comply <i>(indicate discrepancies)</i>			
Lot1					
Hybrid solar inverter: <ul style="list-style-type: none"> • Providing and installing a hybrid electro-solar inverter • 5kva capacity – <u>real sine wave</u> • Two MPPT charger • Charger voltage input 60-115VDC • Maximal input current from solar panels 2x60A • Maximal input current from the grid or generator 60A • Ability of connecting the inverters output to have a 3-phase output • The maximal voltage it tolerates ≥ 145 (Voc) • The MPPT charger input voltage 60~115 VDC (Vmpp) • The AC input voltage 230 • Conversion time 10-20 milliseconds • Frequency of the AC input 50/60\pm5% (Hz) • AC output voltage 230 VAC • Output efficiency 					

<p>not less than 90%</p> <ul style="list-style-type: none"> • Maximal input capacity from solar panels 6000 watt • Maximal flow capacity tolerance up to 1000 V Amp • Chargers maximal efficiency not less than 98% • Temperature during operation 0-55°C • Operation during humidity no less than 0~95% • Batteries connection voltage 48VDC • Provided with LCD • Protection degree from the fluctuations of the input/output voltage, overload, short and temperature • Operates on all types of liquid open and dry closed cells <p>Manufactured by an international company like Victron, SMA or an equivalent and according to IEC standards</p>					
<p><u>PV-solar panel:</u></p> <ul style="list-style-type: none"> • Providing and installing PV-solar panels of a capacity no less than 280w according to STC and NOCT test conditions. • 60 sequential cells in the electro-solar panels • Cell type: 					

<p>monocrystalline or polycrystalline</p> <ul style="list-style-type: none"> • Maximal capacity not less than 280wp • Panels fill factor not less than 75% • Nominal operation voltage 24V • Open circuit voltage not less than 38.5v • Short circuit current greater or equal to 9.3A • Maximal power current ≥ 8.9 Amp • Maximal power voltage $\geq 31V$ • Panel outcome $\geq 16\%$ • Insulated connection box: IP67 with protection diodes plus a gel or silicon insulator to fill the box and protect it from humidity and water • MC4 connectors • Surface glass made from hardened glass specially made for electro-solar panels (with a low iron ratio) • Oxidized aluminum frames • Panels shall face the south with a 40-45° inclination • The bidder shall attach the following original documents: <ul style="list-style-type: none"> ○ A test report and a valid certificate from one of the best internationally 					
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<p>accredited quality assurance bodies for the panels specifications that meet the standards: IEC/EC 61215- IEC 61730</p> <ul style="list-style-type: none"> ○ A test report and a valid certificate from one of the best internationally accredited quality assurance bodies for the glass boards used in manufacturing the panels. ○ A test report and a valid certificate from one of the best internationally accredited quality assurance bodies for the specifications of the EVA material used in manufacturing the panels and their components. ○ A test report and a valid certificate from one of the best internationally accredited quality assurance bodies for the specifications of the back cover used in manufacturing the panels ○ A test report and a valid certificate from one of the 					
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<p>best internationally accredited quality assurance bodies for the specifications of the cable used in manufacturing the panels.</p> <p>○ A note from the panel manufacturing company stating the warranty of the panels and the guarantee conditions, which must be 10 years, at least.</p> <p>A note from the panel manufacturing company technically supporting the bidder in his bid.</p>					
<p>Providing and installing the PV compilers with protection fuses, diodes, a breaker and surge protection</p>					
<p><u>Cells (batteries)</u></p> <ul style="list-style-type: none"> • Providing and installing a set of 4800amp-hr/48v cells • Dry Cell type: Deep Cycle- Gel, or Tubular open batteries • 200amp-hr/12v • Cell Nominal voltage: 12v • Cell nominal capacity: 200Ah per 10hrs of discharge for 1.8v cells • Internal resistance no more than 3.6mΩ • Maximal current 					

<p>allowed for charging no less than 10A</p> <ul style="list-style-type: none"> • Cell weight no less than 60kg • Auto-discharge no more than 5% per month at a 20°C temperature • Virtual age no less than 10 years at a 20°C temperature • Charge/discharge times at a 20°C temperature and in ideal conditions no less than 1600 cycles at a discharge curve of 50%DOD • Technical age ≥ 3 years • Operation temperature 0 to 55° • Must meet the EU and British standards and specifications • Cell warranty must be no less than 2 years from the installation date. <p>Cell age no more than 6 months from the manufacturing date</p>					
<p>Metal pedestal:</p> <ul style="list-style-type: none"> • Made from aluminum or iron and coated with an insulation paint layer and two layers of paint • Installation towards the south at 40°angle • The contractor shall provide a constructional study for the sections and formation used in 					

installing the panels to meet the safety standards in Syria in terms of 140km/h winds					
The contractor shall pay a field visit to the installation site with the presence of the project engineer					
Providing and installing metal pedestals for the cells coated with two layers of paint					
Providing and installing 6*24mm wire cables specially made for solar energy applications					
Providing and installing 4*24mm brass wire cables specially made for solar energy applications.					
Providing and installing a well-ventilated place for the solar inverters with cells in a sandwich panel close to the panels, to be determined by the supervisory body/ kg					
Adding a new electric panel and modifying some wirings in the main panel					

Providing and installing a 40amp main breaker, brand ABB or an equivalent					
Providing and installing a four-switched 40Amp switch breaker					
Providing and installing a mechanical lock					
Providing and installing a signal lamp					
Providing and installing network analyzer					
Providing and installing converters					
Providing and installing junction boxes (16mm + 6mm)					
Providing and installing tubes and sockets					
Providing and installing a 15amp single phase breaker, brand Eaton or an equivalent					
An Uninterruptible Power Supply Unit – UPS <ul style="list-style-type: none"> • True online UPS • Capacity: 3000w/3000va • Input voltage 220vac • Input frequency 40-70Hz • Capacity factor 					

<ul style="list-style-type: none"> • $\geq 0.99\%$ • TIIDI $\leq 5\%$ • Output voltage: 220vac $\pm 1\%$ • Output frequency 47-53Hz • Conversion time: no more than 4milliseconds • Real sine wave output • Outcome more than 90% • Full load battery time: no less than 10 minutes • LCD showing operation status, load rate, battery level, input/output voltages, discharge time and warnings • Audio warning • Bypass • Device must meet IEC-EN62040-2 C1 and EN62040-2 C2 • Noise less than 50dbA at 1m <p>Manufactured by Triplite or an equivalent</p>					
Providing and installing a complete earthing system provided that the resistance does not exceed 5Ω					
Providing and installing a complete lightning rod system in conformity with the Syrian code in addition to DC & AC					

surge protection devices.					
Al Razi Hospital UPS					
<p>3. Providing and installing a UPS unit</p> <ul style="list-style-type: none"> • True online UPS • Capacity: 48kw/60kva • 3-phase Input voltage 380vac • Input voltage 304-456v alternating • Input frequency 50Hz $\pm 10\%$ • Capacity factor ≥ 0.8 • THDv $\leq 4\%$ for non-linear loads • Output voltage 220vac $\pm 1\%$ • Output frequency 50Hz $\pm 1\%$ • Conversion time 0 millisecond • Real sine wave output • Outcome more than 90% • Full load battery time no less than 10 minutes • LCD showing operation status, load rate, battery level, input/output voltages, discharge time and warnings • Audio warning • Bypass • Device must meet IEC-EN62040-2 C1 and EN62040-2 C2 • Noise less than 70dbA at 1m • Manufactured by Triplite or an equivalent 					

All required materials including cables, etc.					
Lot2					
<p>Providing and installing a set of solar receivers with hollow glass pipes with the following specifications:</p> <ul style="list-style-type: none"> - The receiver operates based on vacuum pipes - The solar receiver pipes shall have ISO9001, must be easily installed, uninstalled and replaced. - Vacuum pipe specifications: 1.8m long, 5.8cm outside diameter/ 4.7cm inside diameter, 3-layered with a discharge indicator - The hollow pipes must be 30pipes per receiver - The interior surface in contact with water is 304 chrome - Thickness of the interior layer 0.5mm and that of the sides 0.8mm - 40-45mm thick foam insulated - 0.4mm thick 430 stainless steel coated from the outside - The input/output connectors must be argon-welded metal with a 1inch or 1¼ inch hole size 					

<ul style="list-style-type: none"> - No less than 1mm thick stainless-steel holder with rear focal reflectors <p>Receivers shall be connected and with the cold/hot water tanks on sites within main and subordinate groups according to the supervisory body's instructions</p>					
<p>Providing and installing 2000 Lt. water tanks as per the following specifications:</p> <ul style="list-style-type: none"> - Made from galvanized stainless steel with a thickness of at least 2mm and a proper interior support - The specifications and dimensions of the inspection and maintenance hole in addition to the input/output holes shall be determined by the supervisory committee - Equipped with a quality floater <p>Provided with a proper metal pedestal</p>					
<p>Providing and installing 2000 Lt. water tank with a special pedestal as per the following specifications:</p> <ul style="list-style-type: none"> - Made from galvanized stainless 					

<p>steel with a thickness of at least 2mm and a proper interior support</p> <ul style="list-style-type: none"> - The specifications and dimensions of the inspection and maintenance hole in addition to the input/output holes shall be determined by the supervisory committee - Equipped with a quality floater <p>Provided with a 4x4cm profile iron pedestal with 8 legs of the same material and a 2.5m high section from the bottom of the pedestal.</p> <p>Horizontal supports of the same material shall be added between the legs each of which is based on a 20x20cm metal plate with a thickness of 2mm (the plates shall be welded with the legs on site taking into account the floor tiles tilting)</p>					
<p>Providing and installing 1500 Lt hot water tanks with pedestals or legs as per the following specifications:</p> <ul style="list-style-type: none"> - The thermal exchanger (brand 'Jacket') shall be 					

<p>made from 4mm thick galvanized stainless steel</p> <ul style="list-style-type: none"> - The interior body shall be also made from 4mm thick galvanized stainless steel - Tanks shall be insulated with 8-10cm layers of asbestos to be covered with a water-resistant treated cloth <p>Each tank shall be equipped with a proper floater to be externally installed</p>					
<p>Providing and installing 1000 Lt hot water tanks with pedestals or legs as per the following specifications:</p> <ul style="list-style-type: none"> - The thermal exchanger (brand 'Jacket') shall be made from 4mm thick galvanized stainless steel - The interior body shall be also made from 4mm thick galvanized stainless steel - Tanks shall be insulated with 8-10cm layers of asbestos to be covered with a water-resistant treated cloth <p>Each tank shall be equipped with a proper floater to be externally installed</p>					

<p>Providing and installing an additional 500 Lt tank to be annexed to the hot water tanks to supply the burn department, as per the following specifications:</p> <ul style="list-style-type: none"> - The thermal exchanger (brand 'Jacket') shall be made from 2mm thick sterilisable 304 Chrome - The interior body shall be also made from 2mm thick sterilisable 304 Chrome - The tank shall be insulated with a 5cm layer of foam to be covered with a 0.8mm thick galvanized metal - The tank shall be equipped with a firmly closed special hole to add water sterilizers <p>The tank shall be equipped with a proper floater to be externally installed</p>					
<p>Providing and installing adjustable water pumps to be used for hot water (with a 1.25-2inch outlet) in capacities enough for moving water between the hot water tanks and the solar receivers in a way ensuring an efficient water heating function in conformity</p>					

with the actually executed water supply network (more than one pump may be installed onto one line to reach the desired purpose) as per the supervisory body's instructions					
Providing and installing 0.5hp pumps to be used for hot water to rotate water in the network connecting the hot water tanks and the hospital supplied departments, with all the accessories required and, in the sites, determined by the supervisory body					
<p>Providing and installing a PLC device with sensors and supplies required in addition to programming it according to the system needs and the supervisory body's instructions. It shall have the following specifications:</p> <ul style="list-style-type: none"> - Ability to be connected to 24 thermal sensors minimum - To have 4 inputs minimum - To have 4 outputs minimum - To have 16 digital inputs minimum - To have 24 digital outputs minimum - The panel must 					

<p>have signal lamps showing the function of each of the system parts connected to it in addition to audio-visual alarm elements to be placed indoor in a site determined by the supervisory body.</p> <ul style="list-style-type: none"> - To be connected to an appropriate cell equipped with an appropriate automatic charger so that the cell ensures the functionality of the control system for at least 30 minutes in case of voltage failure. - The device must be installed with the cell and charger at a proper site on the roof (approved by the supervisory body) set in a metal or plastic box ensuring their protection from climate conditions (sunlight, rain, etc.) - To ensure controlling the following: <ul style="list-style-type: none"> o Switching on/off the system o Organising the heating of water inside the hot water tanks through controlling the 					
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<p>rotational pumps between the solar receivers and hot water tanks, and reading the temperatures required, taking into account having 3 separate parts of the system one of which with a special tank with water to be sterilized.</p> <ul style="list-style-type: none"> ○ Controlling the operation of pumps timely programmed as per the month, day, day/night hours and the outdoor temperature. ○ Automatically continuing work via the battery in case of voltage failure. ○ Showing breakdowns and operating the alarm elements, including: <ul style="list-style-type: none"> • Water leakage problems • Water heating problems (e.g. failure of the rotational pumps) <p>Voltage failure</p>					
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Providing and installing 0.75 inch brass ball valves with all that is required					
Providing and installing network supplies to connect the cold and hot water tanks, consisting of aluminium coated PPR pipes with an operational pressure not less than 10 bar, a diameter of 25mm, an insulation made from sponge insulator and a layer of black PVC adhesive tape with all the required accessories.					
Providing and installing network supplies to connect the cold and hot water tanks, consisting of aluminium coated PPR pipes with an operational pressure not less than 10 bar, a diameter of 32mm, an insulation made from sponge insulator and a layer of black PVC adhesive tape with all the required accessories.					
Providing and installing network supplies to connect the cold and hot water tanks, consisting of aluminium coated PPR pipes with an operational pressure not less than 10 bar, a diameter of 40mm, an insulation made from					

sponge insulator and a layer of black PVC adhesive tape with all the required accessories.					
Providing and installing 0.75-inch brass non-return valves					
Providing and installing 1-inch brass non-return valves of good quality					
Providing and installing 1.25-inch brass non-return valves of good quality					
Lot3					
Removing and rewiring electrical cables on the roof in addition to executing maintenance. This includes lifting the cables to conclude the roof works, properly connecting the cables, providing the worn and missing parts, etc. according to the instructions of the supervisory body, with all that is required					
Removing the old flat solar receivers on the roof and admitting them to the management warehouse					
Uninstalling the water tanks, removing the metal beams of the desalination room and handing in the valid ones to the management with the approval of the supervisory body after removing them from the roof with all the supplies and removing the worn					

parts, demolishing walls in the room on top of the roof with transferring the debris, cleaning and all that is required					
Uninstalling the old rain gutters and handing them in to the management, and all other required works					
Uninstalling the tiles and the layers beneath until reaching the concrete layer in the areas named by the supervisory body with transferring the debris, cleaning all that is required (removing and transferring the baseboard tiles according to the supervisory body's instructions)					
Uninstalling the roof finishing layer until reaching the concrete layer in the areas named by the supervisory body with transferring the debris, cleaning and all that is required					
Providing and executing a 250kg/ m ³ polished black cement layer on the roof with an average thickness of 5-7cm and a concrete edge of an appropriate height based on the site according to the supervisory body's instructions and all that is required					
Providing and executing a bitumen insulating layer for the roof and a 4mm thick concrete edge. The layer must not be locally made, and must be SBS polymer modified and					

reinforced with a 160-180g/ m ² non-simulated polyester according to the conditions and technical specifications required and all that required					
Providing and building 15x40cm full-block gutter edges with render and polishing (the parapet, and between gutters) to ensure good drainage, and all that is required					
Providing and installing 40x40x3cm locally made mosaic tiles type2, with white cement provided that the mosaic thickness is not less than 12mm, in addition to polishing, grouting with insulating materials added to it, and all that is required					
Providing and installing 10cm high polished and nickeled baseboards of at least 3cm thickness of the same kind of the mosaic tiles installed on the roof (parapet and gutter edges) by using white cement and all that is required					
Providing and installing 4" high pressure PVC gutter pipes of 3.5mm thickness with accessories, adhesives and all that is required					
Providing and installing lids for the gutter sifters for the roof drainage					
Providing and installing 1.5" galvanized pipes for potable water on the roof with the accessories needed, cork-insulation,					

black adhesive PVC of the finest brands available in the local market and all that is required according to the instructions of the supervisory body					
Providing and installing 1" galvanized pipes for potable water on the roof with the accessories needed, cork-insulation, black adhesive PVC of the finest brands available in the local market and all that is required according to the instructions of the supervisory body					
Providing and installing 1.5" brass valve, Czech model, and all that is required as per the instructions of the supervisory body					
Providing and installing cold water and hot water system pipes made from aluminum-coated PPR pipes with a diameter of 40mm, an insulation with a sponge insulator covered with a black PVC adhesive tape and all accessories required from hot water tanks of solar system exists on roof to the connections & sub-connections within required sectors and according to the instructions of the supervisory body					
Providing and installing cold water and hot water system pipes made from aluminum-coated PPR pipes with a diameter of 32mm, an insulation with a sponge insulator					

covered with a black PVC adhesive tape and all accessories required from hot water tanks of solar system exists on roof to the connections & sub-connections within required sectors and according to the instructions of the supervisory body					
Providing and installing cold water and hot water system pipes made from aluminum-coated PPR pipes with a diameter of 25mm, an insulation with a sponge insulator covered with a black PVC adhesive tape and all accessories required from hot water tanks of solar system exists on roof to the connections & sub-connections within required sectors and according to the instructions of the supervisory body					
Providing and installing cold water and hot water system pipes made from aluminum-coated PPR pipes with a diameter of 20mm, an insulation with a sponge insulator covered with a black PVC adhesive tape and all accessories required from hot water tanks of solar system exists on roof to the connections & sub-connections within required sectors and according to the instructions of the supervisory body					

Providing and installing 1.25" brass ball valves and all that is required as per the instructions of the supervisory body					
Providing and installing 1" brass ball valves and all that is required as per the instructions of the supervisory body					
Providing and installing 0.75" brass ball valves and all that is required as per the instructions of the supervisory body					
Providing and installing 0.5" brass ball valves and all that is required as per the instructions of the supervisory body					

Other Related services and requirements <i>(based on the information provided in Section 5b)</i>	Compliance with requirements		Details or comments on the related requirements
	Yes, we comply	No, we cannot comply <i>(indicate discrepancies)</i>	
e.g. Delivery Term			
Warranty			
Local Service Support			
Training			
Installation			
commissioning			

SECTION 3: Management Structure and Key Personnel

- 3.1 Describe the overall management approach toward planning and implementing the project. Include an organization chart for the management of the project describing the relationship of key positions and designations. Provide a spreadsheet to show the activities of each personnel and the time allocated for his/her involvement.
- 3.2 Provide CVs for key personnel that will be provided to support the implementation of this project using the format below. CVs should demonstrate qualifications in areas relevant to the scope of goods and/or services.

Format for CV of Proposed Key Personnel

Name of Personnel	[Insert]
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Position for this assignment	[Insert]
Nationality	[Insert]
Language proficiency	[Insert]
Education/ Qualifications	<i>[Summarize college/university and other specialized education of personnel member, giving names of schools, dates attended, and degrees/qualifications obtained.]</i> [Insert]
Professional certifications	<i>[Provide details of professional certifications relevant to the scope of goods and/or services]</i> <ul style="list-style-type: none"> ▪ Name of institution: [Insert] ▪ Date of certification: [Insert]
Employment Record/ Experience	<i>[List all positions held by personnel (starting with present position, list in reverse order), giving dates, names of employing organization, title of position held and location of employment. For experience in last five years, detail the type of activities performed, degree of responsibilities, location of assignments and any other information or professional experience considered pertinent for this assignment.]</i> [Insert]
References	<i>[Provide names, addresses, phone and email contact information for two (2) references]</i> Reference 1: [Insert] Reference 2: [Insert]

I, the undersigned, certify that to the best of my knowledge and belief, the data provided above correctly describes my qualifications, my experiences, and other relevant information about myself.

Signature of Personnel

Date (Day/Month/Year)