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INVITATION TO BID

Procurement of Portable Solar Power Systems

LOT 1: 340Wp Portable Solar Power Set

LOT 2: 510Wp Portable Solar Power Set

ITB No.: UNDP-TUR-ITB(UR)-2022-70

Project: Uplands Rural Development Programme (URDP)

Country: Turkey

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Section I. Letter of Invitation

The Government of the Republic of Turkey has obtained a loan from the International Fund for Agricultural Development (IFAD), a specialized agency of the United Nations, for the Financing of the Uplands Rural Development Programme (URDP). The programme is implemented by the Ministry of Agriculture and Forestry and aims to enhance the prosperity and resilience of the upland smallholder farmers by improving economic opportunities for the rural poor. It will be implemented in 6 provinces of 2 regions covering 35 districts and targeting 30.000 rural households which represent 294.000 beneficiaries.

Consistent with its role of Technical Assistant to the Programme implementation, the United Nations Development Programme (UNDP) hereby invites you to submit a Bid in response 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
 - o Form A: Bid Submission Form
 - o Form B: Bidder Information Form
 - o Form C: Joint Venture/Consortium/Association Information Form
 - o Form D: Qualification Form
 - o Form E: Format of Technical Bid
 - o Form F: Price Schedule
 - o Form G: Form of Bid Security

Please be informed that this procurement process is being conducted through the online tendering system of UNDP. Bidders who wish to submit an offer must be registered in the system.

- Visit this page for system user guides and videos in different languages:

<https://www.undp.org/content/undp/en/home/procurement/business/resources-for-bidders.html>

- If already registered, go to <https://etendering.partneragencies.org> and sign in using your username and password.
- Use “Forgotten password” link if you do not remember your password. Do not create a new profile.
- If you have never registered in the system before, you can register by visiting the link below and follow the instructions in the user guide (attached): <https://etendering.partneragencies.org>
 - o Username: event.guest
 - o Password: why2change
- It is strongly recommended to create a username with two parts: your first name and last name separated by a “.”, (similar to the one shown above). Once registered you will receive a valid password to the registered email address which you can use for signing in and changing your password.

- Please note that your new password should meet the following criteria:
 - Minimum 8 characters
 - At least one UPPERCASE LETTER
 - At least one lowercase letter
 - At least one number

You can view and download tender documents with the guest account as per the above username and password, However, if you are interested to participate, you must register in the system and subscribe to this tender to be notified when amendments are made.

E-Mail and Hard Copy Submissions are not accepted. Bids shall be submitted through e-tendering only.

If you are interested in submitting a Bid in response to this ITB, please prepare your Bid in accordance with the requirements and procedures as set out in this ITB and submit it by the “Deadline for Submission of Bids” set out in the eTendering System. Note that e-tendering system time zone is in **EST/EDT (New York)** time zone.

Please acknowledge receipt of this ITB by utilizing the “Accept Invitation” function in eTendering system. This will enable you to receive amendments or updates to the ITB. Should you require further clarifications, kindly communicate with the contact person 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.

Sincerely;

UNDP Turkey Country Office

Section 2. Instruction to Bidders

GENERAL PROVISIONS

<p>1. Introduction</p>	<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>
<p>2. Fraud & Corruption, Gifts and Hospitality</p>	<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>IFAD's Policy on Preventing Fraud and Corruption in its Activities and Operations is available at www.ifad.org/anticorruption_policy</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 https://www.un.org/Depts/ptd/about-us/un-supplier-code-conduct</p>
<p>3. Eligibility</p>	<p>3.1 A vendor should not be suspended, debarred, or otherwise identified as</p>

	<p>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 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>
<p>4. Conflict of Interests</p>	<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>
<p>B. PREPARATION OF BIDS</p>	
<p>5. General Considerations</p>	<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>

	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.
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)

	<p>days after the final date of validity of the Bid.</p> <p>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> <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.
<p>13. Currencies</p>	<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) If 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.
<p>14. Joint Venture, Consortium or Association</p>	<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</p>

	<p>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 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>
<p>15. Only One Bid</p>	<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.
<p>16. Bid Validity Period</p>	<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>
<p>17. Extension of Bid Validity Period</p>	<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>
18. Clarification of Bid (from the Bidders)	<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>
19. Amendment of Bids	<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>
20. Alternative Bids	<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>
21. Pre-Bid Conference	<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 style="margin-left: 20px;">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 style="margin-left: 20px;">(b) The Technical Bid and Price Schedule must be sealed and submitted together in an envelope, which shall:</p> <ul style="list-style-type: none"> i. Bear the name of the Bidder. ii. Be addressed to UNDP as specified in the BDS; and iii. Bear a warning not to open before the time and date for Bid opening as specified in the BDS. <p style="margin-left: 20px;">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> <p style="margin-left: 20px;">a) Electronic files that form part of the Bid must be in accordance with the format and requirements indicated in BDS.</p> <p style="margin-left: 20px;">b) 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> <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"> a) Preliminary Examination including Eligibility. b) Arithmetical check and ranking of bidders who passed preliminary examination by price. c) 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

<p>35. Right to Accept, Reject, Any or All Bids</p>	<p>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.</p>
<p>36. Award Criteria</p>	<p>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.</p>
<p>37. Debriefing</p>	<p>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.</p>
<p>38. Right to Vary Requirements at the Time of Award</p>	<p>38.1 At the time of award of Contract, UNDP reserves the right to vary (increase or decrease) 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.</p>
<p>39. Contract Signature</p>	<p>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.</p>
<p>40. Contract Type and General Terms and Conditions</p>	<p>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</p>
<p>41. Performance Security</p>	<p>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.</p>
<p>42. Bank Guarantee for Advanced Payment</p>	<p>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</p>

	<p>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</p>
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 affected 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 that are 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 Please note that Turkish version of this ITB and its Annexes are given only for information purposes. In case of an inconsistency between Turkish and English versions, the English version shall prevail.
2		Submitting Bids for Parts or sub-parts of the Schedule of Requirements (partial bids)	Permitted The Technical Specifications define 2 LOTs: LOT 1: 340Wp Portable Solar Power Set LOT 2: 510Wp Portable Solar Power Set The bidder may submit a bid for either LOT 1 or LOT 2, or both LOTs. However, bidders are not allowed to submit a bid only for some part of any LOT. The bidders shall offer the whole of the quantities indicated for each LOT. Bids for only part of the items required by any LOT will be rejected. Those bidders who submit bids for both LOTs should fill out the price schedule form separately for each of the two LOTs.
3	20	Alternative Bids	Not Permitted
4	21	Pre-Bid conference	Will not be conducted
5	16	Bid Validity Period	90 days following bid submission deadline
6	12	Bid Security	Required in the following amounts for each LOT: For LOT 1: TRY 80,000.00

			<p>For LOT 2: TRY 32,000.00</p> <p>Bidders shall submit the required amount of Bid Security for each LOT they place a bid. The bidders applying for both LOTs, shall provide separate bid securities for each LOT.</p> <p>Acceptable Forms of Bid Security: Bank Guarantee (See Section 6, Form G for the template)</p> <ul style="list-style-type: none"> ▪ Bid Security shall be in English as per the template ▪ Currency of the Bid Security shall be in TRY as per the amount indicated above. For bidders who are registered in a country other than Turkey, the Bid Security may be submitted in USD or EUR. The Bid Security amount must at least be the equivalent of the TRY amount defined above, as per the United Nations Operational Rate of Exchange applicable on the bid submission deadline. ▪ No change shall be made to the template except for fields indicated in the template ▪ Bid Security shall be valid until 30 days after the expiry of Bid Validity Period (i.e. 120 days after bid submission deadline) ▪ Original Bid Security shall be delivered to the below address on or before the submission deadline indicated in e-tendering system, with a PDF copy submitted as part of the electronic submission. <p>Focal Point: Ömer Tugrul Zor</p> <p>Oran Mahallesi, Mustafa Fehmi Gerçeker Sokak, No:12 06450 Çankaya/Ankara/Turkey</p>
7	41	Advanced Payment upon signing of contract	Allowed up to a maximum of 20 % of contract value upon receipt and acceptance by UNDP of a bank guarantee for the full amount of the advance payment issued by a Bank and in a form acceptable to UNDP
8	42	Liquidated Damages	Will be imposed as follows: Percentage of contract price per week of delay in delivery of the goods/services as per Contract requirements: 2% Max. number of weeks of delay is 5, after which UNDP may terminate the contract.
9	40	Performance Security	<p>Required in the amount of 10% of the total contract amount per each LOT.</p> <p>Note: Performance Security will be a condition for signing of the contracts. Contracts for each LOT will be signed after receipt of Performance Security from the successful bidder(s).</p> <p><u>Condition for release of Performance Security:</u> Performance Security will be released 30 days after positive "Inspection and acceptance report" to be issued by UNDP upon</p>

			successful completion of each of the Contracts for each LOT.
10	12	Currency of Bid	Turkish Liras (TRY)
11	31	Deadline for submitting requests for clarifications/ questions	4 calendar days before the bid submission deadline
12	31	Contact Details for submitting clarifications/questions	Focal Person in UNDP: Ömer Tugrul Zor Address: Oran Mahallesi, Mustafa Fehmi Gerçeker Sokak, No:12 06450 Çankaya/Ankara/Turkey E-mail address: : tr.procurement@undp.org
13	18, 19 and 21	Manner of Disseminating Supplemental Information to the ITB and responses/clarifications to queries	Posted directly to eTendering and published on the following websites: www.undp.org www.ungm.org www.devbusiness.com https://www.tr.undp.org
14	22	Deadline for Submission	June 29, 2022, 07:00 A.M. (EST/EDT New York Time) as indicated in the e-tendering System. Please note that system time zone is in EST/EDT (New York) time zone.
15	22	Allowable Manner of Submitting Bids	E-Tendering only Any submission by other means such as e-mail or hard copy will be rejected. EVENT ID: ITB-22-70 This procurement process is being conducted through the online tendering system of UNDP. Bidders who wish to submit an offer must be registered in the system. Visit this page for system user guides and videos in different languages: https://www.undp.org/content/undp/en/home/procurement/business/resources-for-bidders.html

			<p>If already registered, go to https://etendering.partneragencies.org and sign in using your username and password.</p> <p>Use "Forgotten password" link if you do not remember your password. Do not create a new profile.</p> <p>If you have never registered in the system before, you can register by visiting the link below and follow the instructions in the user guide (attached):</p> <p>https://etendering.partneragencies.org</p> <ul style="list-style-type: none"> •Username: event.guest •Password: why2change <p>It is strongly recommended to create a username with two parts: your first name and last name separated by a ".", (similar to the one shown above). Once registered you will receive a valid password to the registered email address which you can use for signing in and changing your password.</p> <p>Please note that your new password should meet the following criteria:</p> <ul style="list-style-type: none"> • Minimum 8 characters • At least one UPPERCASE LETTER • At least one lowercase letter • At least one number <p>You can view and download tender documents with the guest account as per the above username and password, However, if you are interested to participate, you must register in the system and subscribe to this tender to be notified when amendments are made.</p>
16	22	Bid Submission Address	<p>Bids shall be submitted through UNDP e-tendering system. However, original bid security shall be delivered to the below address with a PDF copy submitted as part of the etendering submission on or before the submission deadline indicated in e-tendering system:</p> <p>Focal Point: Ömer Tugrul Zor</p> <p>Oran Mahallesi, Mustafa Fehmi Gerçeker Sokak, No:12 06450 Çankaya/Ankara/Türkiye</p> <p>Although bids shall be submitted through e-tendering, UNDP reserves the right to request original copies of the documents</p>

			submitted as part of the bids during evaluation period, if required by UNDP. Link to e-tendering System: https://etendering.partneragencies.org EVENT ID: ITB-22-70
17	22	Electronic submission (email or eTendering) requirements	<ul style="list-style-type: none"> ▪ File names must be maximum 60 characters long and must not contain any letter or special/Turkish character other than from Latin alphabet/keyboard. ▪ All files must be free of viruses and not corrupted. ▪ Max. File Size per transmission: 45 MB
18	25	Date, time, and venue for the opening of bid	Public Bid Opening will be conducted. Details are as follows: Date and Time: June 29, 2022, 10:00 A.M. (EST/EDT New York Time) Venue: Virtual Zoom Meeting Point of Contact: Ömer Tugrul Zor Note: Please confirm your attendance to Public Bid Opening by sending e-mail to tr.procurement@undp.org . Thereafter, UNDP will share the Zoom link with the participants.
19	27, 36	Evaluation Method for the Award of Contract	Evaluation shall be conducted on LOT Basis. Lowest priced technically responsive, eligible and qualified bid for each LOT shall be considered for contract award for that respective LOT.
20		Expected date for commencement of Contract	Contract is expected to be signed in July 2022
21		Maximum expected duration of contract	Turnkey delivery of all items in LOT 1 shall be completed within 90 calendar days following contract signature. Turnkey delivery of all items in LOT 2 shall be completed within 90 calendar days following contract signature. Maximum expected duration of contract is 150 days which covers delivery, inspection/acceptance and payment period.
22	35	UNDP will award the contract to:	One or more Bidders, depending on the following factors: - One bidder for both LOTs or - Two bidders (one for each LOT)
23	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

24	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
25	44	Payment Provisions	For each LOT, <ul style="list-style-type: none"> - 20 % of contract value (advance payment) upon receipt and acceptance by UNDP of a bank guarantee for the full amount of the advance payment issued by a Bank and in a form acceptable to UNDP and - 80 % of the respective LOT's contract amount shall be paid based on the positive "inspection and acceptance report" to be issued by UNDP upon conduct of inspection by a committee to be established by UNDP, following turnkey delivery of all equipment and materials subject of this ITB. Payment shall be affected in thirty calendar days following written acceptance of goods by UNDP and submission of the invoice by the Contractor, in accordance with UNDP General Terms and Conditions of Contracts.
26		Currency of Payment	If a company established and operating in Turkey gets awarded by the contract, payment shall be made in Turkish Liras, otherwise, payments shall be made in United States Dollars through conversion of the TRY amount by the official UN Exchange Rate valid on the date of money transfer. Please refer to: https://treasury.un.org/operationalrates/OperationalRates.php for UN Official Exchange Rate.
27		Taxation	<i>UN and its subsidiary organs are exempt from all taxes. Therefore, Bidders shall prepare their financial bids excluding Value Added Tax (VAT). It is the Bidder's responsibility to learn from relevant authorities (Ministry of Treasury and Finance) and/or to review /confirm published procedures and to consult with a certified financial consultant as needed to confirm the scope and procedures of VAT exemption application as per VAT Law, Ministry of Treasury and Finance General Communiqués. The contractor selected for the award shall not be entitled to receive any amount over its bid price in relation to VAT, Special Consumption Tax and any other applicable taxes. Overall contract amount to be paid to the contractor shall not exceed the total amount offered in the Financial Proposal.</i>
28	14	Joint Venture, Consortium or Association	Allowed
29		Covid-19 Specific Measures	The Bidders shall review all local regulations, as well as that of UN and UNDP concerning the measures they must take during performance of the contract in the context of COVID-19, before they submit their bids and factor relevant costs, if any, to their bids.

			<p>The Contractor shall take all measures against COVID-19 imposed by local regulations as well as by UN and UNDP during performance of the contract to protect health and social rights of its own personnel, as well as UNDP personnel, Project Stakeholders and third parties.</p> <p>Pursuant to "Clause 12- Indemnification" of UNDP General Terms and Conditions for Contracts (given in Clause Number 24 of Bid Data Sheet), the Contractor shall indemnify, defend, and hold and save harmless, UNDP, and its officials, agents and employees, from and against all suits, proceedings, claims, demands, losses and liability of any kind or nature brought by any third party against UNDP, including, but not limited to, all litigation costs and expenses, attorney's fees, settlement payments and damages, based on, arising from, or relating to COVID-19 measures that must be taken by the Contractor in the context of the contract. UNDP shall not be held accountable for any Covid-19 related health risks or events that are caused by negligence of the Contractor and/or any other third party.</p>
30		Other Information	<p>The documents that will be attached to Form B: Bidder Information Form (such as Certificate of Incorporation/Business Registration and Power of Attorney) can be submitted in local languages in the case that they are provided only in the local language by issuing authorities. In that case, the English translations of these documents shall be submitted by Bidders along with original documents in the local language. UNDP reserves the right to request notarized versions of these translations any time during the evaluation.</p>

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 submitted as per ITB requirements with compliant format and 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 established in or before June 2019 .	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. ▪ Patent Registration Certificates if any of technologies submitted in the Bid is patented by the Bidder. ▪ Export/Import Licenses, if applicable 	Form B: Bidder Information Form
QUALIFICATION		
History of Non-Performing Contracts¹	Non-performance of a contract did not occur because of contractor default for the last 3 years (starting from 1 June 2019).	Form D: Qualification 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-

Litigation History	No consistent history of court/arbitral award decisions against the Bidder for the last 3 years (starting from 1 June 2019).	Form D: Qualification Form
Previous Experience	Minimum 3 years of relevant experience.	Form D: Qualification Form
	<p>In a single contract or in the total of at most 3 contracts, minimum in the following values and characteristics:</p> <p>I. similar value, nature and complexity for LOT 1</p> <p>II. similar value, nature and complexity for LOT 2</p> <p>implemented over the last 5 years (starting from 1 June 2017). Bidders shall submit Statements of Satisfactory Performance (i.e. Reference Letters, Work Completion Certificates) along with their bids. <i>For JV/Consortium/Association, all Parties cumulatively should meet requirement.</i></p>	Form D: Qualification Form
Financial Standing	<p>Minimum average annual turnover of:</p> <p>I. at least USD 250.000,00 for LOT 1 for the last 3 years (i.e., 2019, 2020 and 2021).</p> <p>II. at least USD 125.000,00 value for LOT 2 for the last 3 years (i.e., 2019, 2020 and 2021).</p> <p>If bidding for all LOTs, at least sum of values defined above for relevant LOTs for the last 3 years (i.e., 2019, 2020 and 2021).</p> <p>For bidders with financial statements in currencies other than USD, the value will be calculated by considering the UNORE applicable on 31 December of the respective year. <i>For JV/Consortium/Association, all Parties cumulatively should meet requirement as specified below.</i></p>	Form D: Qualification Form
	<p>Bidder must demonstrate the current soundness of its financial standing and indicate its prospective long-term profitability by submitting their audited Financial Statements (balance sheets, including all related notes, and income statements) for the years defined above. <i>For JV/Consortium/Association, all Parties cumulatively should meet requirement as specified below.</i></p>	Form D: Qualification Form
Technical Evaluation	The technical bids shall be evaluated on a pass/fail basis for compliance or non-compliance as per the technical specifications specified in the bid document.	Form E: Technical Bid Form
Financial Evaluation	<p>Detailed analysis of the price schedule based on requirements listed in Section 5 and quoted for by the bidders in Form F.</p> <p>Price comparison shall be based on the total turnkey price, including delivery.</p> <p>Comparison with budget/internal estimates.</p>	Form F: Price Schedule Form
Other Information	Product catalogue/brochure of the proposed brand/model showing detailed technical specifications of the goods.	Form E: Technical Bid Form

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.

Conditions for meeting eligibility and qualification criteria in case of submission as a Joint Venture/ Consortium/Association

Joint Venture/Consortium/Association is limited with maximum 3 members including Lead Entity.

In case of Joint Venture/Consortium/Association, Minimum Eligibility and Qualification Criteria shall be met in line with the following conditions:

No	Subject	Requirement	If bidding as a Single Entity	If bidding as a Joint Venture / Consortium / Association		
				All Combined	Lead Entity	Other Member(s)
1	Legal Status	Vendor is a legally registered entity established in or before June 2019 .	Must meet Requirement	Must meet Requirement	Must meet Requirement	Must meet Requirement
2	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.	Must meet Requirement	Must meet Requirement	Must meet Requirement	Must meet Requirement
3	Conflict of Interest	No conflicts of interest in accordance with ITB clause 4.	Must meet requirement	Must meet Requirement	Must meet Requirement	Must meet Requirement
4	Bankruptcy	Not declared bankruptcy, 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.	Must meet Requirement	Must meet Requirement	Must meet Requirement	Must meet Requirement

5	History of Non-Performing Contracts	Non-performance of a contract did not occur because of contractor default for the last 3 years (starting from 1 June 2019).	Must meet Requirement	Must meet Requirement	Must meet Requirement	Must meet Requirement
6	Litigation History	No consistent history of court/arbitral award decisions against the Bidder for the last 3 years (starting from 1 June 2019).	Must meet Requirement	Must meet Requirement	Must meet Requirement	Must meet Requirement
7	Previous Experience	Minimum 3 years of relevant experience.	Must meet Requirement	Must meet Requirement	Must meet Requirement	Must meet Requirement
		In a single contract or in the total of at most 3 contracts, minimum in the following values and characteristics: I. similar value, nature and complexity for LOT 1 II. similar value, nature and complexity for LOT 2 implemented over the last 5 years (starting from 1 June 2017). Bidders shall submit Statements of Satisfactory Performance (i.e. Reference Letters, Work Completion Certificates) along with their bids.	Must meet 100% of the Requirement	Must meet 100% of the Requirement	Minimum value of the contract(s) implemented by the Lead Entity shall not be less than 50% of the Requirement.	Other member(s) of the JV / Consortium / Association shall jointly complete the remaining portion of the Requirement.
8	Financial Standing	Minimum average annual turnover of: I. at least USD 250.000,00 for LOT	Must meet 100% of the Requirement	Must meet 100% of the Requirement	The Lead Entity shall meet at least 50% of the Requirement.	Other member(s) of the JV / Consortium / Association shall

		<p>1 for the last 3 years (i.e., 2019, 2020 and 2021).</p> <p>II. at least USD 125.000,00 value for LOT 2 for the last 3 years (i.e., 2019, 2020 and 2021).</p> <p>If bidding for all LOTs, at least sum of values defined above for relevant LOTs for the last 3 years (i.e., 2019, 2020 and 2021).</p> <p>For bidders with financial statements in currencies other than USD, the value will be calculated by considering the UNORE applicable on 31 December of the respective year.</p> <p>Bidder must demonstrate the current soundness of its financial standing and indicate its prospective long-term profitability by submitting their audited Financial Statements (balance sheets, including all related notes, and income statements) for the years defined above</p>				jointly complete the remaining portion of the Requirement.
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Section 5a: Schedule of Requirements and Technical Specifications

Please be informed that that Turkish version of the Technical Specifications is given for reference purpose only. In case of inconsistency between Turkish and English versions, English version shall prevail at all times.

The number of the items to be delivered to respective provinces is as follows:

İlgili illere teslim edilecek ürünlerin adedi şöyledir:

LOT // LOT	No // No	DESCRIPTION // <i>TANIMI</i>	Set Content // <i>Set İçeriği</i>	QUANTITY // <i>MİKTAR</i>	UNIT // <i>BİRİM</i>
1	1.1	Min. 340 Wp (Single or 2x170 Wp) Polycrystalline Solar Module	1 X 340Wp or // <i>veya</i> 2 X 170Wp	630	Sets // <i>Set</i>
	1.2	MS 1200 W Modified Sine Inverter	1 unit		
	1.3	20A 12/24 V Charge Regulator (with MPPT feature and LCD screen)	1 unit		
	1.4	200Ah Gel Battery (2x100 Ah or 1x200 Ah)	1 X 200Ah or // <i>veya</i> 2 X 100Ah		
	1.5	PV substructure / Panel-Electric Cabling (including consumables such as battery cable, protection fuse, cable duct, battery terminals or lugs)	1 unit		
2	2.1	SOLAR PANELS (3 X 170 Wp) Polycrystalline 510Wp	3 X 170Wp	197	Sets // <i>Set</i>
	2.2	Full sine 12 VDC-220VAC Inverter with min. Power of 1000 watts Smart type with built-in solar charge controller	1 unit		
	2.3	Deep Discharge Gel Battery 200 Ah (1 x 200 Ah or 2 x 100 Ah)	2 X 100_Ah or 1 X 200 Ah		
	2.4	METAL PANEL	1 unit		

		ELECTRIC CABLING		
	2.5	ALUMINIUM TABLE SYSTEM PV Assembly	1 unit	

LOT 1 340Wp Portable Solar Power Set	LOT 1 340Wp Taşınabilir Solar Enerji Seti	
Item to be supplied description// <i>Tedarik edilecek ürün tanımı</i>	Set Content // Set içeriği	Quantity // Miktar
Min. 340 Wp (Single or 2x170 Wp) Polycrystalline Solar Module	1 X 340Wp or // veya 2 X 170Wp	630 sets // 630 set
MS 1200 W Modified Sine Inverter	1 unit	
20A 12/24 V Charge Regulator (with MPPT feature and LCD screen)	1 unit	
200Ah Gel Battery (2x100 Ah or 1x200 Ah)	1 X 200Ah or // veya 2 X 100Ah	
PV substructure / Panel-Electric Cabling (including consumables such as battery cable, protection fuse, cable duct, battery terminals or lugs)	1 unit	
Technical Specifications <i>Teknik Şartname</i>		
<p>1. SOLAR PANEL</p> <p>1.1. PV modules must be within the instantaneous output power tolerance of [0, + 5Wp]. All modules must be ordered with positive power tolerance only. All PV modules shall be 'higher than nominal' of the power output report of the flash test at the manufacturing plant. Negative power tolerance shall not be accepted.</p> <p>1.2. The PV panel type to be used shall have a crystalline structure. The power of the PV Solar Panel (Solar Module) must be minimum 340 Wp. PV panels must be of identical / same brand PV module manufacturers. All Solar PV modules shall be of the same brand and shall have the same type and power.</p> <p>1.3. The connectors of the FV modules must be of the original MC4 family. Connectors to be used in the DC system must be of the same brand, model and identical. The connectors of</p>	<p>1. SOLAR PANEL</p> <p>1.1. FV modüller, [0, + 5Wp] anlık çıkış gücü toleransı içinde olmalıdır. Tüm modüller sadece pozitif güç toleransı ile sıralanmalıdır. Tüm PV modülleri, imalat fabrikasında flaş testinin güç çıkış raporunun 'nominal değerinden yüksek' olacaktır. Negatif güç toleransı kabul edilmeyecektir.</p> <p>1.2. Kullanılacak olan FV panel tipi polikristal yapıda olacaktır. FV Güneş Paneli (Solar Modül) gücü minimum 340 Wp olmalıdır. FV modüller özdeş / aynı marka FV modül üreticilerinden olmalıdır. Tüm Solar FV modülleri aynı marka, aynı tip ve güçte olacaktır.</p> <p>1.3. FV modüllerinin konnektörleri orijinal MC4 familyasından olmalıdır. DC sistemde kullanılacak konnektörler aynı marka, model ve özdeş olmalıdır. FV modüllerin konnektörleri IP67 suya dayanıklılık</p>	

the FV modules must meet the IP67 water resistance standard.

- 1.4. PV module efficiency Standard Test Conditions (*Standard Test Conditions: shall be at least 18% under 1000W/m² radiation 25°C module temperature and AM = 1.5 spectrum*), and PV modules with an efficiency of less than 18% shall not be accepted.
- 1.5. Against power drops caused by shadowing, at least 2 of the PV modules shall have by-pass diodes. Protection shall be provided so that there is no current flow to the PV modules, when energy is not generated.
- 1.6. The front glasses of PV modules must be resistant to external stresses. (For example, the glass shall not break easily in case of throwing rocks or against impacts such as ice and hail.)
- 1.7. PV modules and fasteners shall have wind resistance with a capacity to withstand at least 130 km / hour wind.
- 1.8. PV Modules shall be able to withstand a wind load of min. 2400 Pa and a snow load of min. 5400 Pa.
- 1.9. PV module connection box (Junction Box) must be rated IP 67 protection class at least and there must be no cover falling problem in hot or cold weathers.
- 1.10. The (+) and (-) poles of the PV Module direct current output cables and convectors shall be easily distinguishable.
- 1.11. The direct current output cables of the PV module shall be 2 cables with a length of at least 10 meters for each pole, in compliance with TS EN50525-2-11 standards or foreign/international equivalent standards, with a minimum cross-section of 6 mm² (one red, one black).
- 1.12. Frames mounted with bolts on solar panels shall not be accepted. Panel frames must be pressed and at the same time punched.
- 1.13. The frame of PV modules must be made of corrosion resistant material (anodized aluminium).
- 1.14. PV modules shall operate smoothly within a temperature range of **-40 ° C to + 85 ° C** and a relative humidity range of 0 to 90%.

standardını sağlamalıdır.

- 1.4. *FV modül verimi Standard Test Koşulları (Standart Test Koşulları: 1000W/m² ışınım, 25°C modül sıcaklığı ve AM=1,5 spektrum) altında en az %18 olacaktır, verimliliği %18'in altında olan FV modüller kabul edilmeyecektir.*
- 1.5. *Gölgelemenin neden olduğu güç düşüşlerine karşı, FV modüller az 2 adet by-pass diyotlu olacaktır. Enerjinin üretilmediği durumda FV modüllere akım geçişi olmayacak şekilde koruma yapılacaktır.*
- 1.6. *FV modüllerin ön camları harici olarak uygulanacak zorlanmalara karşı dayanıklı olacaktır. (Örneğin taş atılması durumunda veya buz, dolu gibi parça darbelerine karşı cam kolaylıkla kırılmayacak yapıda olacaktır.)*
- 1.7. *FV modüller ve bağlantı elemanları en az 130 km/saat hızındaki rüzgâra dayanabilecek kapasitede rüzgâr direncine sahip olacaktır.*
- 1.8. *FV Modüller min. 2400 Pa rüzgar yüküne ve min 5400 Pa kar yüküne dayanabilecek yapıda olacaktır.*
- 1.9. *FV modül bağlantı kutusu (Junction Box) en az IP 67 koruma sınıfında olmalı ve sıcak veya soğuk havalarda kapak düşme sorunu olmamalıdır.*
- 1.10. *FV modül doğru akım çıkış kabloları ve konvektörlerinin (+) ve (-) kutupları ayırt edilebilir yapıda olacaktır.*
- 1.11. *FV modül doğru akım çıkış kabloları her bir kutup için en az 10 metre uzunlukta, TS EN50525-2-11 standartlarına veya yabancı/uluslararası dengi standartlara uygun olmalıdır ve de minimum 6 mm² kesitinde 2 adet (bir adet kırmızı renkli, bir adet siyah renkli) kablo olacaktır.*
- 1.12. *Güneş panellerinde cıvatalı olarak montajlanmış çerçeveler kabul edilmeyecektir. Panel çerçeveleri preslenmiş, aynı zamanda punch işlemi de görmüş olmalıdır.*
- 1.13. *FV modüllerin çerçevesi korozyona dayanıklı malzemeden imal edilmiş ve paslanmaz yapıda (anodize alüminyum) olmalıdır.*
- 1.14. *FV modüller: -40 °C ile + 85 °C sıcaklık aralığında ve %0 -90 bağıl nem aralığında sorunsuz çalışacaktır. Bu durum sunulan teknik dokümandan okunabilecektir.*

<p>This must be readable from the provided technical document.</p> <p>1.15. The warranty documents given by the manufacturer for the Modules offered. When necessary, values under normal operating conditions may also be requested.</p> <p>1.16. PV modules to be used in the solar energy system shall have been manufactured in 2021 or later.</p> <p>1.17. The lifespan of the PV modules must have a minimum of 10 years of mechanical and 20 years of performance warranty. Linear energy guarantee shall be such that the Contractor shall commit that it shall provide at least 90% of the panel power at the end of 10 years and at least 80% at the end of 20 years. Linear guarantee for panels must be presented in the offer, together with the product catalogues.</p> <p>1.18. Each of PV modules shall have at least 2 serial number barcode (one of which shall be inside the glass of the module) and 1 label. The FV module label shall include, but is not limited to, at least the following.</p> <p>1.18.1. Vmpp, Voc Imp, Ioc, Pmpp, NOCT values,</p> <p>1.18.2. Max operating voltage value</p> <p>1.18.3. Length, weight data</p> <p>1.18.4. Power tolerance</p> <p>1.18.5. Quality class</p> <p>1.18.6. Test conditions (STC) (Radiation, temperature, humidity)</p> <p>1.18.7. Brand, model, serial number details</p> <p>1.18.8. CE marking</p> <p>1.18.9. Country of Production</p> <p>1.18.10. Name of the Manufacturer Company</p> <p>1.19. During the production of the panels, the logos of the Ministry of Agriculture and Forestry, IFAD, UNDP and URDP Project shall be prepared to be clearly visible after applying an in-glass lamination process inside the panels.</p> <p>1.20. The serial number of each panel shall be readable in the window and the test report shall be arranged according to the serial number.</p> <p>1.21. The name and surname of the farmer,</p>	<p>1.15. <i>Teklif edilen modüller için üreticinin vereceği garanti belgeleri. Gerektiğinde Normal çalışma koşullarındaki değerler de istenebilecektir.</i></p> <p>1.16. <i>Güneş enerjisi sisteminde kullanılacak FV modüller 2021 veya sonrasında üretilmiş olacaktır.</i></p> <p>1.17. <i>FV modüllerin ömrü minimum 10 yıl mekanik ve 20 yıl performans garantisine sahip olmalıdır. Lineer enerji garantisi, panel gücünün 10 yıl sonunda en az %90'ını ve 20 yılsonunda en az %80'ini sağlayacak şekilde olmasını yüklenici taahhüt edecektir. Panellerin lineer garantisi ürün katalogları ile birlikte teklifte sunulmalıdır.</i></p> <p>1.18. <i>FV modüllerin her birinde en az 2 adet (biri modülün camının içinde olacak) seri numarası barkodu ve 1 adet etiket bulunacaktır. FV modül etiketi bunlarla sınırlı olmamak üzere en az aşağıdakileri içerecektir.</i></p> <p>1.18.1. <i>Vmpp, Voc Imp, Ioc, Pmpp, NOCT değerleri</i></p> <p>1.18.2. <i>Max çalışma gerilimi değeri</i></p> <p>1.18.3. <i>Uzunluk, ağırlık verileri</i></p> <p>1.18.4. <i>Güç toleransı</i></p> <p>1.18.5. <i>Kalite sınıfı</i></p> <p>1.18.6. <i>Test koşulları (STC) (Işınım, sıcaklık, nem)</i></p> <p>1.18.7. <i>Marka, model, seri numarası bilgileri</i></p> <p>1.18.8. <i>CE işareti</i></p> <p>1.18.9. <i>Üretilen Ülke</i></p> <p>1.18.10. <i>Üretici Firma İsmi</i></p> <p>1.19. <i>Panellerin imalatı sırasında Tarım ve Orman Bakanlığı, IFAD, UNDP ve KDAK Projesi logoları panellerin içine cam içi laminasyon işlemi uygulanarak net olarak görülecek şekilde hazırlanacaktır.</i></p> <p>1.20. <i>Her bir panelin mutlaka seri numarası cam içinde okunur şekilde olacak ve test raporu seri numarasına göre düzenlenecektir.</i></p> <p>1.21. <i>Panel çerçevelerine sabit ve kalıcı etiket yöntemiyle, çiftçinin adı, soyadı proje numarası yazılacaktır.</i></p> <p>1.22. <i>Teslim sırasında yüklenici firma panellere ait laboratuvar test sonuçlarını vermek zorundadır.</i></p>
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project number and delivery date shall be tagged on the panel frames by a fixed and permanent method.

- 1.2.2. The contractor must provide the laboratory test results of the panels, at the time of delivery.

2. INVERTER (Inverter, Modified Sine)

- 2.1. It shall have a nominal power of 1200W, input voltage shall be: 12 Volt DC voltage, output voltage shall be 220/230 Volt AC 50 Hertz.
- 2.2. The inverter shall have overload, high temperature, low voltage, and short circuit protections features.
- 2.3. The inverter shall have an operating temperature range of 0 - +40 °C and shall be able to operate at a maximum relative humidity of 90%.
- 2.4. The inverter shall have a minimum efficiency of 90%.
- 2.5. Inverters shall be able to operate with gel battery.
- 2.6. In case of overload, overvoltage, and short circuit, it shall protect the system and restart the inverter.
- 2.7. It must be able to give an audible warning in case of overload and heating.
- 2.8. The inverter's voltage input must be in the range of at least 10.5 Vdc - maximum 16 Vdc.
- 2.9. It must have Low voltage alarm (9.5 V +,-) to protect the battery. It must have protection fuses.
- 2.10. MS inverter must have a CE mark.
- 2.11. The inverter must be guaranteed for at least 2 years.
- 2.12. It shall have EN60950, EN55022 Standards.
- 2.13. It shall have a cooling fan.
- 2.14. It shall have minimum 1 USB output.

3. SOLAR CHARGE REGULATOR

- 3.1. 12 Volt / 24 Volt 20 Amps Automatic sensing charge regulator
- 3.2. The charging module shall have MPPT feature.
- 3.3. 12 / 24V automatic recognition, load operating mode: ON / OFF
- 3.4. The battery charge regulator shall charge the

2. EVİRİCİ (İnvertör, Modifiye Sinüs)

- 2.1. Nominal 1200W gücünde, giriş gerilimi: 12 Volt DC gerilimi, çıkış gerilimi: 220/230 Volt AC 50 Hertz olacaktır.
- 2.2. Evirici, aşırı yük, yüksek sıcaklık, düşük gerilim ve kısa devre korumalarına sahip olacaktır.
- 2.3. Evirici, çalışma sıcaklık aralığı: 0, +40 °C olacak ve maksimum %90 bağıl nemde çalışabilecektir.
- 2.4. Evirici verimi minimum % 90 olacaktır.
- 2.5. Eviriciler jel aküyle çalışabilecek yapıda olacaktır.
- 2.6. Aşırı yük, gerilim ve kısa devre durumunda sistemi korumaya alarak eviriciyi yeniden başlatacaktır.
- 2.7. Aşırı yük ve ısınma durumunda sesli ikaz verebilmelidir.
- 2.8. Evirici gerilim girişi en az 10.5 Vdc – en çok 16 VDC aralığında olmalıdır.
- 2.9. Aküyü korumak için düşük gerilim alarmına (9,5 V+,-) haiz olmalıdır. Koruma sigortalarına sahip olmalıdır.
- 2.10. MS evirici CE işareti taşımalıdır.
- 2.11. Evirici en az 2 yıl garantili olmalıdır.
- 2.12. EN60950, EN55022 Standartlarına sahip olacaktır.
- 2.13. Soğutma fanı olacaktır.
- 2.14. En az 1 adet USB çıkışı olacaktır.

3. SOLAR ŞARJ REGÜLATÖRÜ

- 3.1. 12 Volt / 24 Volt 20 Amper Otomatik algılamalı şarj regülatörü
- 3.2. Şarj modülü MPPT özelliğine sahip olacaktır.
- 3.3. 12/24V otomatik tanıma, yük çalışma modu: ON / OFF
- 3.4. Akü şarj regülatörü güneş panelleri tarafından üretilen elektrik enerjisi ile akülerin şarjını sağlayacak, aynı zamanda aküleri aşırı yüklenme ve boşaltma durumuna sokmayacak şekilde koruma sağlayacaktır. Sistem gerilimi kullanılacak aküye uygun olacak şekilde çıkış verecektir.
- 3.5. Yüksek düzey jel akü uyumlu olacaktır.
- 3.6. Float voltajı 13,8 V (13 V-15 V ayarlanabilir), Boost voltajı 14,4 V olacaktır.
- 3.7. Akü aşırı gerilim koruması 16,5 V olacaktır.

batteries using the electrical energy generated by the solar panels, and at the same time provide protection so as not to put the batteries in overload and discharging conditions. The system voltage shall have an output according to the battery to be used.

- 3.5. It shall be compatible with high level gel battery.
- 3.6. Float voltage shall be 13.8V (13V-15V adjustable), Boost voltage shall be 14.4V.
- 3.7. Battery overvoltage protection shall be 16.5 V.
- 3.8. The input voltage value of the device shall be at least 50 V.
- 3.9. It shall have a digital display to show the charge status and errors.
- 3.10. The solar charger must have heat compensated battery charging capability.
- 3.11. The operating range shall be outdoor temperature values of -20.... + 55°C.
- 3.12. It must have a CE mark.

4. GEL BATTERY

- 4.1. Batteries shall be long-lasting, suitable for solar energy system, maintenance-free, and since the system will operate in a closed cabinet, the accumulators shall be in gel form.
- 4.2. It shall have a reliable constant output current. Batteries to be used shall be resistant to deep discharge and shall have an enclosed structure.
- 4.3. It shall have stable performance.
- 4.4. The number of battery cycles must be > 1000 at the 50% DOD level. It shall be 100% maintenance-free. A 2-year warranty must be given by the manufacturer.
- 4.5. Batteries shall work smoothly at 0 – 90% relative humidity at an ambient temperature range of 0 to + 50° C, when it is installed at an elevation of 0 – 2,000 m.
- 4.6. The operating voltage shall be at least 12 VDC.
- 4.7. The battery shall be at least 100 Ah.
- 4.8. There shall not be more than 120 days of difference between the date of manufacture of the batteries and the date of delivery to the administration. The name of the manufacturer company, date of manufacture, nominal voltage, “+” and “-” signs and voltage

3.8. Cihazın giriş gerilim değeri minimum 50 V olacaktır.

3.9. Şarj durumu ve hataları gösterecek dijital ekranlı olacaktır.

3.10. Solar charger ısı kompanzasyonlu akü şarj özelliğine sahip olmalıdır.

3.11. -20....+55°C dış ortam sıcaklık değerleri çalışma aralığı olacaktır.

3.12. CE işaretine sahip olacaktır.

4. JEL AKÜ

4.1. Aküler uzun ömürlü güneş enerjisi sistemine uygun bakım gerektirmeyen ve sistem kapalı bir kabin içerisinde çalışacağından akümülatörler jel yapıda olacaktır.

4.2. Güvenilir sabit çıkış akımı olacaktır. Kullanılacak olan aküler derin deşarja dayanıklı ve kapalı yapıda olacaktır.

4.3. İstikrarlı performansa sahip olacaktır.

4.4. Akülerin döngü sayısı %50 DOD seviyesinde >1000 olmalıdır. %100 bakım gerektirmeyecektir. Üretici tarafından 2 yıl garanti verilmelidir.

4.5. Aküler ; 0 ve +50 °C ortam ısısında , 0 – 2000 m. yükseklikte kurulu bulunduğu hallerde, % 0 – 90 bağıl nem oranında sorunsuz çalışacaktır.

4.6. Çalışma gerilimi en az 12 Vdc olacaktır.

4.7. Akü en az 100 Ah olacaktır.

4.8. Akülerin imalat tarihi ile idareye teslim tarihi arasında 120 günden fazla olmayacaktır. Akümülatör üzerine imalatçı firma adı, imalat tarihi nominal gerilimi “+”ve “-” işaretleri, gerilimi silinmeyecek şekilde olacaktır.

5. SOLAR KABLO

5.1. FV modül üzerindeki FV enerji kabloları yüksek sıcaklık ve ısıya dayanıklı, UV dirençli, çift izoleli, halojensiz, kurşunsuz, TS EN 60228 standartlarına veya yabancı/uluslararası dengi standartlara uygun olarak üretilmiş olacaktır.

5.2. Solar kablolar 90°C çalışma sıcaklığında sorunsuz kullanılacaktır.

5.3. FV – solar kablo ve solar kablo –şarj regülatörü- inverter bağlantılarında MC4 tipi

shall be indelibly written on the accumulator.

5. SOLAR CABLE

- 5.1. The PV energy cables on the PV module shall be resistant to high temperature and heat, UV-resistant, double insulated, halogen-free, lead-free, and shall be produced in accordance with TS EN 60228 standards or foreign/international equivalent standards.
- 5.2. Solar cables shall be used at an operating temperature of 90 °C without any problem.
- 5.3. In the PV - solar cable and solar cable-charge regulator- inverter connections, MC4 type male and female type connectors shall be used. Connectors, special fasteners, and sockets shall be suitable for an operating temperature range of -40 °C to + 90°C, suitable for high current and approved type.

6. PV SUB-CONSTRUCTION

- 6.1. Solar energy panels shall be designed to be suitable for transportation.
- 6.2. The construction to be used in the system shall be in an easily mountable form. It should be in a manner so that it can be demounted and mounted when needed. The panels shall be mounted by connecting to aluminium rails with connection apparatus (clamps). The rails shall be designed in a way that they will be connected to triangle legs. The triangle legs shall be made from stainless material.

7. BOARD -ELECTRIC INSTALLATION

- 7.1. Boards must be suitable for carrying, with handles and covers.
- 7.2. There must be air intake channels to prevent overheating.
- 7.3. On the surface of the board, there must be at least 1 piece of Socket with 220 AC output, with child protection, necessary warning label and fuse protection.
- 7.4. The boards shall bear metal tags containing the date of manufacture, model and serial numbers, and these tags must be visible on the board. All warning, death danger signs, operating instructions and warning

erkek ve dişi tip konektörler kullanılacaktır. Konektörler, özel bağlantı elemanları ve soketler -40°C ile +90°C arası işletme sıcaklığına uygun, yüksek akıma uygun, onaylı olacaktır.

6. FV ALT KONSTRÜKSİYON

- 6.1. *Güneş enerji panelleri, taşımaya uygun bir şekilde tasarlanmış olacaktır.*
- 6.2. *Sistemde kullanılacak konstrüksiyon kolay montaj yapılacak yapıda olacaktır. Gerekliğinde sökölüp takılabilecek şekilde montaja uygun olacaktır. Paneller alüminyum raylara bağlantı aparatları ile tutturulup (tutucu-clamp) monte edilecektir. Raylar üçgen ayaklara monte edilecek şekilde tasarlanacaktır. Üçgen ayaklar paslanmaz malzemeden olacaktır.*

7. PANO -ELEKTRİK TESİSATI

- 7.1. *Panolar taşımaya uygun, kulplu, kapaklı olmalıdır.*
- 7.2. *Aşırı ısınmayı önlemek için hava giriş kanalları olmalıdır.*
- 7.3. *Pano yüzeyinde olacak şekilde topraklı 220 AC çıkışı çocuk korumalı, gerekli ikaz etiketli ve sigorta korumalı en az 1 adet priz olmalıdır.*
- 7.4. *Panoların üzerinde; üretim tarihi model ve seri numaraları içeren metal etiket olmalıdır ve bu etiketler panonun görülebilecek yerinde olmalıdır. Pano ve diğer ana komponentler (ekipmanlar) üzerinde bulunması gereken tüm ikaz, ölüm tehlike levhası, kullanma talimatı ve uyarı talimatı plakaları uygun şekilde takılacaktır.*
- 7.5. *Kapağında şarj regülatörünün ekranını görebilecek şekilde olacaktır.*
- 7.6. *Bütün anahtar ve ekranlar dış kapak üzerinde olacak şekilde tasarlanacaktır.*
- 7.7. *Taşıma sırasında bileşenler zarar görmesin diye tüm bileşenler (Akü-Evirici-Şarj Regülatörü) sabitlenmiş olacaktır.*
- 7.8. *Pano en az 0,8 mm DKP sac ile imal edilmeli.*
- 7.9. *Panolar idare tarafından uygun görülen renklere boyanmış şekilde teslim edilecektir.*

instructions plates that must be present on the board and other main components (equipments) shall be properly attached.

- 7.5. It shall allow the charge regulator screen to be seen on the cover.
- 7.6. It shall be designed so that all switches and screens are on the outer cover.
- 7.7. All components (Battery-Inverter-Charge Regulator) shall be fixed so that the components are not damaged during transportation.
- 7.8. The board must be manufactured of at least 0.8 mm DKP sheet metal.
- 7.9. Boards shall be delivered painted in appropriate colours as defined by the Administration.
- 7.10. In order to transfer energy between the board and panel, solar PV type cable must be placed according to the construction approved by the administration.
- 7.11. For visibility, the phrase "KIRSAL DEZAVANTAJLI ALANLAR KALKINMA PROJESİ MERSİN 2022" must be written on the boards by paint, plate, or sticker. The plates used must be prepared in an easily readable size and mounted in such a way that they cannot fall. If paint or stickers are to be used, they must be prepared in easily readable sizes, and they must be indelible and long-lasting by using materials that shall not fade.
- 7.12. All electrical and electronic devices belonging to the solar energy system to be installed and the cabinets which will contain them, all carrier construction, metal parts and auxiliary metal mounting materials shall be grounded. Grounding in accordance with the standards shall be made on both DC side and AC side by the contractor.
- 7.13. The placement of the components (equipments) in the board shall be designed so that the board shall not be damaged during the transportation.

8. GENERAL GUIDELINES

- 8.1. All materials and equipment shall be manufactured and installed in accordance

7.10. *Panel ile pano arasına enerji aktarımını sağlamak için idarenin onay verdiği konstrüksiyona göre solar PV tipi kablo konulmalıdır.*

7.11. *Görünürlük için panolar üzerine "KIRSAL DEZAVANTAJLI ALANLAR KALKINMA PROJESİ MERSİN 2022" ibaresi boya, plaka ya da çıkartmayla yazılmalıdır. Kullanılan plakalar kolay okunabilir boyutta hazırlanmalı ve düşmeyecek şekilde monte edilmelidir. Boya veya çıkartma kullanılacaksa kolay okunabilir boyutlarda hazırlanması, silinmeyecek, solmayacak malzemeler kullanılarak uzun ömürlü olması sağlanmalıdır.*

7.12. *Kurulacak güneş enerjisi sistemine ait tüm elektrikli ve elektronik cihazlarla, bunların içine konulacağı kabinler, tüm taşıyıcı metal aksamlar, konstrüksiyon ile metal aksamlar, tüm yardımcı metal montaj malzemeleri topraklanacaktır. Hem DC tarafta hem de AC tarafta standartlara uygun topraklamalar yüklenici tarafından yapılacaktır.*

7.13. *Pano içerisindeki komponentlerin (ekipmanlar) yerleşimi panonun taşınması sırasında zarar görmeyecek şekilde tasarlanacaktır.*

8. GENEL ESASLAR

8.1. *Tüm malzeme ve teçhizat, elektrik imalat ve tesisat endüstrisindeki üretim tekniklerine uygun olarak imal ve tesis edilecek ve ilgili maddelerde belirtilen standartlara uygun olacaktır. İhale sürecinde işbu teknik şartnamede belirtilen bir standardın yürürlükten kalkması veya iptal edilmesi durumunda yerine geçen standarda uygunluk da yeterli kabul edilecektir.*

8.2. *İsteklilerin teklif ettikleri cihazların kalite veya hususiyet itibariyle aynısı veya benzeri bulunmadığı takdirde, daha yüksek kalitede olanları idarenin onayı ile teslim edecek ve bu bunun için herhangi bir ücret talebinde bulunamayacaktır.*

8.3. *Kurulacak sistem elemanları parça bazında en az 2 (iki) yıl ürün garantisine sahip olacaktır.*

with the production techniques in the electrical manufacturing and installation industry and shall comply with the standards stipulated in the respective item. In case a standard listed within this Technical Specifications is abolished or cancelled, the standard replacing it will be considered suffice.

- 8.2. If identical or similar in terms of quality or characteristics of the devices offered by the bidders cannot be found, it shall substitute with the higher quality ones upon the approval of the administration and shall not request any cost for this.
- 8.3. The system components to be installed shall have a product warranty of at least 2 (two) years on part basis.
- 8.4. All devices to be used in the system shall be brand new and unused, with information such as signs, letters, numbers etc. indicating the brand, model, and date of manufacture.
- 8.5. Malfunctions in portable solar energy systems shall be fixed by the contractor as soon as possible in accordance with the beneficiary's residence conditions.
- 8.6. The contractor company has to deliver the subject matter systems to the places to be shown by Mersin Provincial Agriculture and Forestry Directorate, located at district centers of MERSİN MERKEZ, TARSUS, SİLİFKE, ERDEMLİ and MUT, within 90 days after signing the contract. The default penalty specified in the contract shall be applied for each day of delay.
- 8.7. The assembly, installation, operation, fault detection and maintenance manual of all equipment shall be in Turkish and English and shall be delivered on the date of signing.
- 8.8. Damages detected during the delivery of Portable Solar Energy panels shall be repaired by the contractor. There shall be no foreign substances (oil, dirt, metallic residue, etc.) on all parts before assembly.
- 8.9. The accuracy of the power of the solar panels to be procured within the scope of the tender must be submitted and delivered to the Provincial Directorate of Agriculture and Forestry, where the FLAŞ Test (I-V CURSE Test

8.4. *Sistem içerisinde kullanılacak tüm cihazlar, yeni (brand new) ve kullanılmamış (unused) olacak, üzerlerinde marka, model ve imal tarihini gösteren işaret, yazı, rakam vs. türünden bilgiler bulunacaktır.*

8.5. *Taşınabilir Güneş enerji sistemlerinde meydana gelecek arızalar yüklenici tarafından yararlanıcının ikamet şartlarına uygun olarak en kısa zamanda giderilecektir.*

8.6. *Yüklenici firma sözleşmeyi imzaladıktan sonra 90 gün içinde sözleşme konusu sistemlerin MERSİN MERKEZ, TARSUS, SİLİFKE, ERDEMLİ ve MUT İlçe merkezlerinde, Mersin İl ve Orman Müdürlüğüne gösterilen alanlarda teslimini yapacaktır. Geciken her gün için sözleşmede belirtilen gecikme cezası uygulanır.*

8.7. *Bütün ekipmanların montajı, kurulumu, işletimi, arıza tespiti ve bakım el kitabı Türkçe ve İngilizce olacaktır ve imza tarihinde teslim edilecektir.*

8.8. *Taşınabilir Güneş Enerji panellerinin teslimi sırasında tespit edilen zararların yüklenici tarafından onarımı yapılacaktır. Montaj öncesinde tüm parçaların üzerinde herhangi bir yabancı madde (yağ, kir, metalik kalıntı, vs.) olmayacaktır.*

8.9. *İhale kapsamında temin edilecek solar panellerin güçlerinin doğruluğu FLAŞ Test (I-V CURSE Testi ayrıca solar panellerde hücresel çatlak ve sağlamlık için ELEKTROLÜMÜNANS (EL) Testinin) belgelenmesinin panellerin tesliminin yapılacağı İl Tarım ve Orman Müdürlüğüne teslim edilmesi gerekmektedir.*

8.10. *Yüklenici, güneş enerji setlerini idareye teslim etmeden önce 1 adet prototip güneş enerjisi setinin demonstrasyonunu idare Kontrol Mühendisine yapacaktır. Prototip setin, işbu şartnamede belirtilen teknik kriterlere uygun olduğunun tespiti akabinde, bu prototipe göre üretilen güneş enerjisi setleri muayene ve kabul yapılmak üzere idareye teslim edilecektir*

9. GARANTİ KOŞULLARI

9.1. *Sistemde kullanılan bütün ekipman ve araçlar (işçilik kalitesi dahil) hatasız, yeni ve birinci*

as well as the ELECTROLYMUNANCE (EL) Test for cellular cracks and durability in solar panels).

8.10. The Contractor shall demonstrate 1 unit of prototype solar energy set to the Control Engineer of the administration, prior to the delivery of the solar energy sets to the administration.

9. WARRANTY CONDITIONS

9.1. All equipment and tools used in the system (including workmanship quality) shall be flawless, new and of first quality. When the materials used (including any part) fail due to design, workmanship or material quality within the warranty periods, the contractor shall be obliged to supply and install the same material. The warranty periods of the components to be used in the system, starting from the temporary acceptance date of the PV System, shall be as follows:

9.2. Photovoltaic solar panels; 10 years physical resistance (mechanical, electrical-electronic etc.) warranty certificate

9.3. Solar panel sub-construction; 2 years.

9.4. Inverters; 2 years.

9.5. Other parts / sections; 2 years.

9.6. Defects and malfunctions, other than due to force majeure and user errors, that occur within the scope of the warranty period shall be remedied by reparation/replacement of the broken hardware, parts, or sections by the contractor free of charge. All kinds of insurance, transportation, cargo and other expenses in the repair, maintenance, replacement of the devices shall be borne by the contractor.

9.7. Failures with the same character occurring in 10% of an identical part or element in the systems during the warranty period are considered characteristic failures. The costs related to solving these malfunctions, along with delivery to the user and setup costs shall be under the responsibility of the contractor, and the malfunctions and costs that occur shall be remedied by the contractor as soon as possible considering the area where the

kalitede olacaktır. Kullanılan malzemeler (herhangi bir parçası dahil) garanti periyotları içerisinde tasarım, işçilik veya malzeme kalitesinden dolayı arızalandıklarında, yüklenici aynı malzemeyi temin edip kurmakla yükümlü olacaktır. Sistemde kullanılacak komponentlerin, FV Sistem geçici kabul tarihinden itibaren, garanti periyotları aşağıdaki şekilde olacaktır:

9.2. Fotovoltaik güneş panelleri; 10 yıl fiziksel dayanım (mekanik, elektrik-elektronik vb.) garanti belgesi

9.3. Güneş paneli alt konstrüksiyonu; 2 yıl.

9.4. İnverterler; 2 yıl.

9.5. Diğer kısımlar/parçalar; 2 yıldır

9.6. Garanti süreleri kapsamında meydana gelen mücbir sebepler ve kullanıcı hataları dışındaki kusur ve arızalar, arızalanan donanım, donanıma ait parça veya kısmın yüklenici tarafından ücretsiz olarak değiştirilmesi/onarılması yoluyla giderilecektir. Cihazların tamir, bakım, değiştirilmesi işlemlerinde her türlü sigorta, nakliye, kargo ve diğer masrafları yükleniciye ait olacaktır.

9.7. Garanti müddeti içinde sistemlerde özdeş bir parça veya elemanın %10 adedinde aynı karakterde meydana gelen arızalar karakteristik arıza kabul edilir. Bu arızaların giderilmesi ile kullanıcıya teslimi ve kurulumla ilişkin bütün masrafları yükleniciye ait olup, taşınabilir güneş enerji sisteminin kurulduğu alan ve ulaşım şartları dikkate alınarak meydana gelen arızalar ve masraflar en kısa zamanda yüklenici tarafından giderilecektir.

10. DİĞER HUSUSLAR

10.1. Projede kullanılacak tüm malzemeler ve sistem tasarımı; Elektrik Tesisleri Proje Yönetmeliği İle Elektrik Üretim ve Elektrik Depolama Tesisleri Kabul Yönetmeliği hükümlerine uygun olacaktır.

10.2. Solar sistemlerin teslim yeri; MERSİN MERKEZ, TARSUS, SİLİFKE, ERDEMLİ ve MUT ilçe merkezlerinde, İl Tarım ve Orman Müdürlüğüne belirlenecek alanlardır.

10.3. Teknik şartname ve eklerinde

portable solar energy system is installed and the transportation conditions.

10. OTHER ISSUES

- 10.1. All materials and system design to be used in the project shall comply with the provisions of the Electricity Facilities Project Regulation and the Electricity Generation and Electricity Storage Facilities Acceptance Regulation and other relevant legislation.
- 10.2. The place of delivery of the solar systems are; places to be shown by Mersin Provincial Agriculture and Forestry Directorate, located at district centers of MERSİN MERKEZ, TARSUS, SİLİFKE, ERDEMLİ and MUT.
- 10.3. All kinds of essential and auxiliary equipments and mandatory works that are not mentioned in the technical specification and its annexes, but which are required by the technique of the work and for the functional operation of the system and for the establishment of a problem-free operation, shall be considered as matters in favour of the Administration and shall be carried out within the tender price. No fee shall be requested from the Administration regarding these.
- 10.4. Except for the works and groups specified in the technical specification, the procurement, delivery to Mersin Province, overhead and profits of all kinds of auxiliary materials, which are not mentioned in the technical specifications and contract annexes, but which are required to be made within the scope of the work, are included in the price offered, and the said works shall be under the liability of the company.
- 10.5. Delivery of the package system to nomad families at units to be defined and in places to be shown by Mersin Provincial Agriculture and Forestry Directorate, located at district centers of MERSİN MERKEZ, TARSUS, SİLİFKE, ERDEMLİ and MUT, making the system functional together with the construction, training the relevant user and all other system requirements as well as all

değ̈inilmeyen, ancak iş̈in tekniđi ve sistemin fonksiyonel çalıřması ve sorunsuz bir iş̈letmenin tesisi ađısından sistemde bulunması gereken her türlü asli ve yardımcı tüm ekipmanlar ile yapılması zorunlu olan tüm iş̈ler İdarenin lehine olan hususlar olarak kabul edilip ihale bedeli iđinde yapılacaktır. Bunlarla ilgili İdareden her hangi bir ücret talep edilmeyecektir.

- 10.4. *Teknik şartnamede belirtilen iş̈ ve grupların dıřında, teknik şartname ve sözleşme eklerinde bahsi geçmeyen ancak iş̈in bünyesi iđinde yapılması zorunlu olan, her tür yardımcı malzemenin temini, Mersin iline nakliyesi genel gider ve karları teklif edilen bedelin iđinde olup, söz konusu iş̈ler firmaya ait olacaktır.*
- 10.5. *Paket sistemin konstrüksiyon ile birlikte çalıřır halde, MERSİN MERKEZ, TARSUS, SİLİFKE, ERDEMLİ ve MUT İlçe merkezlerinde Mersin İl Tarım ve Orman Müdürlüğü'nün belirlediđi alanlarda ve sayılarda teslim edilmesi, burada göçer ailelere kullanım ve kurulum hakkında bilgi ve eđitiminin verilmesi ve diđer sistem gereksinimleriyle bütün iş̈ ve iş̈lemler yüklenici sorumluluđunda olup ek bedel alınmaksızın gerçekleştirilecektir. Kurulum sonrasında güneş paneli sisteminin çalıřmaması durumunda, sistemin deđiřtirilmesi-tamiri yüklenici tarafından gerçekleştirilecektir. Bunlarla ilgili her hangi bir ücret talep edilmeyecektir.*
- 10.6. *İş̈in teslimi sırasında oluşabilecek her türlü zarar ve ziyandan firma sorumlu olacak olup; tespit edilecek hasar firmadan tazmin edilecektir.*
- 10.7. *Teklif veren istekliler solar paneller ile ilgili üretici firmaya ait; Kapasite Raporunu ve İmalat Belgesini sözleşme imza ařamasında sunmak zorundadır.*
- 10.8. *Yüklenici teslim sürecinde iş̈ güvenliđi yasalarına uygunluđunu sađlayacaktır.*
- 10.9. *Cihaz kullanırken can güvenliđi sorumluluđu kullanıcının kendisine aittir.*
- 10.10. *Tařınabilir GES sistemini oluřturan bileřenler ve bu bileřenlerin teknik özelliklerine iş̈bu teknik şartnamede detaylı olarak yer*

<p>works and transactions shall be under the liability of the contractor, and they shall be carried out without any additional cost. In case the solar panel system does not work after installation, the contractor will undertake the change/repair of the system. No cost will be requested for these.</p> <p>10.6. The company shall be responsible for any damage and loss that may occur during the assembly of the work; the damage to be determined shall be compensated by the company.</p> <p>10.7. Bidders who submit bids must submit Capacity Report and Manufacturing Certificate related to the manufacturing company regarding solar panels, at the time of contract signature.</p> <p>10.8. The contractor will ensure compliance with occupational safety laws during the delivery process.</p> <p>10.9. While using the device, life safety responsibility belongs to the user.</p> <p>10.10. Components forming the portable solar power system, along with the technical specifications of these components have been stipulated within the technical specifications in detail. Apart from taking these specifications into consideration, the bidders should also take the prevailing designs in market/practice into consideration for issues regarding design which have not been stipulated within the technical specifications.</p>	<p><i>verilmiştir. Bu özelliklerin esas alınması gerekmele birlikte teknik özellikler içinde yer verilmeyen tasarıma ilişkin hususlarda ilgililerce, pazarda/uygulamada cari tasarım(lar)ın esas alınarak fiyat tekliflerinin oluşturulması gerekmektedir.</i></p>	
<p>LOT 2 510Wp Portable Solar Power Set</p>	<p><i>LOT 2 510Wp Taşınabilir Solar Enerji Seti</i></p>	
<p>Item to be supplied description// <i>Tedarik edilecek ürün tanımı</i></p>	<p>Set Content // <i>Set içeriği</i></p>	<p>Quantity // <i>Miktar</i></p>
<p>SOLAR PANELS (3 X 170 Wp) Polycrystalline 510Wp</p>	<p>3 X 170Wp</p>	<p>197 Sets // <i>197 Set</i></p>
<p>Full sine 12 VDC-220VAC Inverter with min. Power of 1000 watts Smart type with built-in solar charge controller</p>	<p>1 unit</p>	
<p>Deep Discharge Gel Battery 200 Ah (2x100 Ah or 1x200 Ah)</p>	<p>1 X 200Ah or // veya 2 X 100Ah</p>	
<p>METAL PANEL ELECTRIC CABLING</p>	<p>1 unit</p>	

ALUMINIUM TABLE SYSTEM PV ASSEMBLY	1 unit	
Technical Specifications <i>Teknik Şartname</i>		
1. SOLAR PANEL (PV MODULE) <ol style="list-style-type: none"> 1.1. PV modules shall have an instantaneous power output tolerance within the range of [0, + 5Wp]. All PV modules must have 'higher than the nominal value' of the flash test power output report in the manufacturing factory. Negative power tolerance shall not be accepted. 1.2. The PV panel type to be used shall have a polycrystalline structure. The power of the PV Solar Panel (Solar Module) must be 170 Wp x 3 units in total 510 Wp. PV modules must be of identical / same brand PV module manufacturers. All Solar PV modules shall be at the same brand, type and power. 1.3. The connectors of the PV modules must be from the original MC4 family. The connectors to be used in the DC system shall be of the same brand and model and must be identical. The connectors of the PV modules shall comply with IP67 water resistance standard. 1.4. PV Module efficiency Standard Test Conditions (Standard Test Conditions: shall be at least 18% under 1000W/m² radiation, 25 °C module temperature and AM=1.5 spectrum), and PV panels with an efficiency of less than 18% shall not be accepted. 1.5. Against power drops caused by shadowing, at least 2 of the PV Modules shall have by-pass protections. PV modules shall be protected so that no flow is present when energy is not produced. 1.6. The front windows of the PV modules shall be resistant to external stresses. (For example, the glass shall not break easily in case of throwing rocks or against impacts such as ice and hail). 1.7. PV modules and fasteners shall have wind resistance with a capacity to withstand at least 130 km/hour wind. 1.8. PV Modules shall be able to withstand a wind load of min. 2400 Pa and a snow load of min. 5400 Pa. 	1. SOLAR PANEL (FV MODÜL) <ol style="list-style-type: none"> 1.1. FV modüller, [0, + 5Wp] anlık çıkış gücü toleransı içinde olmalıdır. Tüm FV modülleri, imalat fabrikasında flaş testinin güç çıkış raporunun 'nominal değerinden yüksek' olacaktır. Negatif güç toleransı kabul edilmeyecektir. 1.2. Kullanılacak FV Panel tipi polikristal yapıda olacaktır. FV güneş paneli (Solar Modül) gücü en az 170 Wp x 3 adet toplam 510 Wp olmalıdır. FV modüller özdeş / aynı marka FV modül üreticilerinden olmalıdır. Tüm Solar FV modülleri aynı marka, aynı tip ve güçte olacaktır. 1.3. FV modüllerinin konnektörleri orijinal MC4 familyasından olmalıdır. DC sistemde kullanılacak konnektörler aynı marka, model ve özdeş olmalıdır. FV modüllerin konnektörleri IP67 suya dayanıklılık standardını sağlamalıdır. 1.4. FV modül verimi Standart Test Koşulları (Standart Test Koşulları: 1000W/m² ışınım, 25 °C modül sıcaklığı ve AM=1,5 spektrum) altında en az %18 olacaktır, verimliliği %18'in altında olan FV paneller kabul edilmeyecektir. 1.5. Gölgelemenin neden olduğu güç düşüşlerine karşı, FV modüller az 2 adet by-pass diyotlu olacaktır. Enerjinin üretilmediği durumda FV modüllere akım geçişi olmayacak şekilde koruma yapılacaktır. 1.6. FV modüllerinin ön camları harici olarak uygulanacak zorlamalara karşı dayanıklı olacaktır. (Örneğin taş atılması durumunda veya buz, dolu gibi parça darbelerine karşı cam kolaylıkla kırılmayacak yapıda olacaktır). 1.7. FV Modüller ve bağlantı elemanları en az 130 km/saat hızındaki rüzgara dayanabilecek kapasitede rüzgar direncine sahip olacaktır. 1.8. FV Modüller min. 2400 Pa rüzgar yüküne ve min 5400 Pa kar yüküne dayanabilecek yapıda olacaktır. 1.9. FV Modül bağlantı kutusu (Junction Box) en az IP 67 koruma sınıfında olmalı ve sıcak veya 	

- 1.9. The junction box of the PV module must have at least IP 67 protection class and should not have a loosening lid problem at hot or cold weathers.
- 1.10. The (+) and (-) poles of the PV Module direct current output cables and convectors shall be easily distinguishable.
- 1.11. The direct current output cables of the PV Module shall be 2 cables (one red and one black) with a length of at least 10 meters for each pole, in compliance with TS EN50525-2-11 standard or foreign/international equivalent standard, with a minimum cross-section of 6 mm².
- 1.12. Frames mounted with bolts on solar panels shall not be accepted. Panel frames must be pressed and at the same time punched.
- 1.13. The frame of the PV Modules shall be made of corrosion-resistant material and stainless steel (anodized Aluminium).
- 1.14. PV Modules: shall operate smoothly between -40 °C and +85 °C operating temperature and it shall work smoothly in 0-90% relative humidity.
- 1.15. The warranty documents given by the manufacturer for the Modules offered. When necessary, values under normal operating conditions may also be requested.
- 1.16. The production date of the PV modules to be used in the solar energy system shall be 2021 or later.
- 1.17. The lifespan of the PV Array must have a minimum of 10 years of mechanical and 25 years of performance warranty. Linear energy guarantee shall be such that it shall provide at least 90% of the panel power at the end of 10 years and at least 80% at the end of 25 years. Linear guarantee for panels must be presented in the offer.
- 1.18. On each PV module, there shall be at least 2 serial number barcodes (one in the window of the module) and 1 label. The PV module label shall comprise, including but not limited to, the following:
- 1.18.1. Vmpp, Voc Imp, Ioc, Pmpp, NOCT values
- 1.18.2. Max operating voltage value

soğuk havalarda kapak düşme sorunu olmamalıdır.

- 1.10. *FV Modül doğru akım çıkış kabloları ve konvektörlerinin (+) ve (-) kutupları ayırt edilebilir yapıda olacaktır.*
- 1.11. *FV Modül doğru akım çıkış kabloları her bir kutup için en az 10 metre uzunlukta, TS EN50525-2-11 standardına ya da yabancı/uluslararası dengi standarda uygun olmalıdır, minimum 6 mm² kesitinde 2 adet (1 adet kırmızı renkli ve bir adet siyah renkli) kablo olacaktır.*
- 1.12. *Güneş panellerinde civatalı olarak montajlanmış çerçeveler kabul edilmeyecektir. Panel çerçeveleri preslenmiş, aynı zamanda punch işlemi de görmüş olmalıdır.*
- 1.13. *FV Modüllerinin çerçevesi korozyona dayanıklı malzemeden imal edilmiş ve paslanmaz yapıda (anodize Alüminyum) olacaktır.*
- 1.14. *FV modüller: -40 °C ile + 85 °C sıcaklık aralığında ve %0 -90 bağıl nem aralığında sorunsuz çalışacaktır.*
- 1.15. *Teklif edilen modüller için üreticinin vereceği garanti belgeleri. Gerektiğinde Normal çalışma koşullarındaki değerlerde istenebilecektir.*
- 1.16. *Güneş enerji sisteminde kullanılacak FV modüllerin üretim tarihi 2021 veya sonrasında olacaktır.*
- 1.17. *FV modüllerinin ömrü minimum 10 yıl mekanik ve 20 yıl performans garantisine sahip olmalıdır. Lineer enerji garantisi, panel gücünün 10 yıl sonunda en az %90'ını ve 20 yıl sonunda en az %80'ini sağlayacak şekilde olacaktır. Panellerin lineer garantisi teklifte sunulmalıdır.*
- 1.18. *FV modüllerin her birinde en az 2 adet (Biri modülün camının içinde olacak) seri numarası barkodu ve 1 adet etiket bulunmalıdır. FV modül etiketi bunlarla sınırlı olmamak üzere en az aşağıdakileri içerecektir:*
- 1.18.1. *Vmpp, Voc Imp, Ioc, Pmpp, NOCT değerleri*
- 1.18.2. *Maks çalışma gerilimi değeri*
- 1.18.3. *Uzunluk, ağırlık verileri*
- 1.18.4. *Güç toleransı*
- 1.18.5. *Kalite sınıfı*

<p>1.18.3. Length, weight data</p> <p>1.18.4. Power tolerance</p> <p>1.18.5. Quality class</p> <p>1.18.6. Test conditions (STC) (Radiation temperature humidity)</p> <p>1.18.7. Brand, model, serial number information</p> <p>1.18.8. Must include CE sign</p> <p>1.18.9. Country of Production</p> <p>1.18.10. Manufacturing company name</p> <p>1.19. During the construction of the panels, the logos of the Ministry of Agriculture and Forestry, IFAD, UNDP and URDP Project shall be prepared to be clearly visible after applying an in-glass lamination process inside the panels.</p> <p>1.20. The serial number of each panel shall be readable in the window and the test report shall be arranged according to the serial number.</p> <p>1.21. At the time of delivery, the contractor company must provide the laboratory test results of the panels.</p> <p>1.22. The name and surname of the farmer and project number shall be tagged on the Panel Frames by a fixed and permanent method.</p> <p>2. INVERTER (Inverter, FULL SINUS)</p> <p>2.1. It shall have a nominal power of 1000W, input voltage shall be: 12 Volt DC voltage, output voltage shall be 220/230 Volt AC 50 Hertz.</p> <p>2.2. The inverter shall have overload, high temperature, low battery voltage protections.</p> <p>2.3. The inverter shall have an operating temperature range of 0 to +40 °C and shall be able to operate at a maximum relative humidity of 90%.</p> <p>2.4. The inverter shall have a minimum efficiency of 90%.</p> <p>2.5. Inverters shall be able to operate with gel battery.</p> <p>2.6. In case of overload, overvoltage and short circuit, it shall protect the system and restart the inverter.</p>	<p>1.18.6. Test koşulları (STC) (Işınım sıcaklık nem)</p> <p>1.18.7. Marka, model, seri numarası bilgileri</p> <p>1.18.8. CE işareti olmalıdır</p> <p>1.18.9. Üretilen ülke</p> <p>1.18.10. Üretici firma ismi</p> <p>1.19. Panellerin imalatı sırasında, Tarım ve Orman Bakanlığı, IFAD, UNDP ve KDAK Projesi logoları panellerin içine cam içi laminasyon işlemi uygulanarak net olarak görülecek şekilde hazırlanacaktır.</p> <p>1.20. Her bir panelin mutlaka seri numarası cam içinde okunur şekilde olacak ve test raporu seri numarasına göre düzenlenecektir.</p> <p>1.21. Teslim sırasında yüklenici firma panellere ait laboratuvar test sonuçlarını vermek zorundadır.</p> <p>1.22. Panel Çerçevesine sabit ve kalıcı etiket yöntemiyle, çiftçinin adı, soyadı proje numarası yazılacaktır.</p> <p>2. EVİRİCİ (Evirici, TAM SİNÜS)</p> <p>2.1. Nominal 1000W gücünde, giriş gerilimi:12 Volt DC gerilimi, çıkış gerilimi:220/230 Volt AC 50 Hertz olacaktır.</p> <p>2.2. Evirici, aşırı yük, yüksek sıcaklık, düşük akü voltajı korumalarına sahip olacaktır.</p> <p>2.3. Evirici çalışma sıcaklığı aralığı 0,+40 °C olacak ve maksimum %90 bağıl nemde çalışabilecektir.</p> <p>2.4. Evirici, verimi minimum %90 olacaktır.</p> <p>2.5. Eviriciler, jel aküyle çalışabilecek yapıda olacaktır.</p> <p>2.6. Aşırı yük, gerilim ve kısa devre durumunda sistemi korumaya alarak eviriciyi yeniden başlayacaktır.</p> <p>2.7. Aşırı yük ve ısınma durumunda sesli ikaz verebilmelidir.</p> <p>2.8. Evirici voltaj girişi en az 10.5 VDC - en çok 16 VDC aralığında olmalıdır.</p> <p>2.9. Aküyü korumak için Düşük voltaj alarmına (9.5 V+,-) haiz olmalıdır. Koruma sigortalarına sahip olmalıdır.</p> <p>2.10. TS evirici CE işareti taşınmalıdır.</p> <p>2.11. Evirici en az 2 yıl garantili olmalıdır.</p> <p>2.12. Dahili 50 amper PWM solar şarj kontrol</p>
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- 2.7. It must be able to give an audible warning in case of overload and heating.
- 2.8. The inverter's voltage input must be in the range of at least 10.5 VDC - maximum 16 VDC.
- 2.9. It must have Low voltage alarm (9.5 V+,-) to protect the battery. It must have protection fuses.
- 2.10. FS inverter must have a CE sign.
- 2.11. The inverter must be guaranteed for at least 2 years.
- 2.12. It shall have a built-in 50 amp PWM solar charge control unit.

3. GEL BATTERY

- 3.1. Batteries shall be long-lasting, suitable for solar energy system, maintenance-free, and since the system will operate in a closed cabinet, the accumulators shall be in gel form.
- 3.2. It shall have a reliable constant output current. Batteries to be used shall be resistant to deep discharge and shall have an enclosed structure.
- 3.3. It shall have stable performance.
- 3.4. The number of battery cycles must be > 1000 at the 50% DOD level. It shall be 100% maintenance-free. A 2-year warranty must be given by the manufacturer.
- 3.5. Batteries shall work smoothly at 0 - 90% relative humidity at an ambient temperature range of 0 to + 50° C, when it is installed at an elevation of 0-2000 m.
- 3.6. The operating voltage shall be at least 12 VDC.
- 3.7. The battery shall be at least 100 Ah.
- 3.8. There shall not be more than 120 days of difference between the date of manufacture of the batteries and the date of delivery to the administration. The name of the manufacturer company, date of manufacture, nominal voltage, "+" and "-" signs and voltage shall be indelibly written on the accumulator.

4. SOLAR CABLE

- 4.1. The PV energy cables on the PV module shall be resistant to high temperature and heat,

ünitesine haiz olacaktır.

3. JEL AKÜ

- 3.1. Aküler uzun ömürlü güneş enerjisi sistemine uygun, bakım gerektirmeyen ve sistem kapalı bir kabin içerisinde çalışacağında akümülatörler jel yapıda olacaktır.
- 3.2. Güvenilir sabit çıkış akımı olacaktır. Kullanılacak olan aküler derin deşarjla dayanıklı ve kapalı yapıda olacaktır.
- 3.3. İstikrarlı performansla sahip olacaktır.
- 3.4. Aküler döngü sayısı %50 DOD Seviyesinde >1000 olmalıdır. %100 bakım gerektirmeyecektir. Üretici tarafından 2 yıl garanti verilmelidir.
- 3.5. Aküler; 0 ve +50 °C ortam sıcaklığında, 0-2000 m Yükseklikte kurulu bulunduğu hallerde, %0-90 Bağıl nem oranında sorunsuz çalışacaktır.
- 3.6. Çalışma gerilimi en az 12 VDC olacaktır.
- 3.7. Akü en az 100 Ah olacaktır.
- 3.8. Akülerin imalat tarihi ile idareye teslim tarihi arasında 120 günden fazla olmayacaktır. Akümülatör üzerine imalatçı firma adı, imalat tarihi Nominal gerilimi "+" ve "-" işaretleri, gerilimi silinmeyecek şekilde olacaktır.

4. SOLAR KABLO

- 4.1. FV modül üzerindeki FV enerji kabloları yüksek sıcaklık ve ısıya dayanıklı, UV dirençli, çift izoleli, halojensiz, kurşunsuz, TS EN 60228 standardına veya yabancı/uluslararası dengi standarda uygun olarak üretilmiş olacaktır.
- 4.2. Solar kablolar 90 °C çalışma sıcaklığında sorunsuz kullanılacaktır.
- 4.3. FV- solar kablo ve solar kablo -şarj regülatörü -inverter bağlantılarında MC4 tipi erkek ve dişi tip konnektörler kullanılacaktır. Konnektörler, özel bağlantı elemanları ve soketler -40 °C ile +90 °C arası işletme sıcaklığına uygun, yüksek akıma uygun, onaylı olacaktır.

5. FV ALT KONSTRÜKSİYON

- 5.1. Güneş enerjisi panelleri, taşımaya uygun bir

UV-resistant, double insulated, halogen-free, lead-free, and shall be produced in accordance with TS EN 60228 standard or foreign/international equivalent standard.

- 4.2. Solar cables shall be used at an operating temperature of 90°C without any problem.
- 4.3. In the PV - solar cable and solar cable-charge regulator- inverter connections, MC4 type male and female type connectors shall be used. Connectors, special fasteners and sockets shall be suitable for an operating temperature range of -40°C to + 90°C, suitable for high current and approved type.

5. PV SUB-CONSTRUCTION

- 5.1. Solar energy panels shall be designed in a portable manner.
- 5.2. The construction to be used in the system shall be in an easily mountable form. It should be in a manner so that it can be demounted and mounted when needed. The panels shall be mounted by connecting to aluminium rails with connection apparatus (clamps). The rails shall be designed in a way that they will be connected to triangle legs. The triangle legs shall be made from stainless material

6. BOARD -ELECTRIC INSTALLATION

- 6.1. Boards must be suitable for carrying, with handles and covers.
- 6.2. There must be air intake channels to prevent overheating.
- 6.3. On the surface of the board, there must be 220 AC output, and at least 1 piece of Socket with child protection, necessary warning label and fuse protection.
- 6.4. The boards shall bear metal tags containing the date of manufacture, model and serial numbers, and these tags must be visible on the board. All warning, death danger signs, operating instructions and warning instructions plates that must be present on the board and other main components (equipment) shall be properly attached.

şekilde tasarlanmış olacaktır.

- 5.2. *Sistemde kullanılacak konstrüksiyon kolay montaj yapılacak yapıda olacaktır. Gerektiğinde sökölüp takılabilecek şekilde montaja uygun olacaktır. Paneller Alüminyum raylara bağlantı aparatları ile tutturulup (Tutucu-clamp) montaj edilecektir. Raylar üçgen ayaklara monte edilecek şekilde tasarlanacaktır. Üçgen ayaklar paslanmaz malzemedendir olacaktır.*

6. PANO -ELEKTRİK TESİSATI

- 6.1. *Panolar taşımaya uygun, kulplu, kapaklı olmalıdır.*
- 6.2. *Aşırı ısınmayı önlemek için hava giriş kanalları olmalıdır.*
- 6.3. *Pano yüzeyinde olacak şekilde topraklı 220 AC çıkışı çocuk korumalı, gerekli ikaz etiketli ve sigorta korumalı en az 1 adet Priz olmalıdır.*
- 6.4. *Panoların üzerinde; üretim tarihi model ve seri numaraları içeren metal etiket olmalıdır ve bu etiketler panonun görülebilecek yerinde olmalıdır. Pano ve diğer ana komponentler (ekipmanlar) üzerinde bulunması gereken tüm ikaz, ölüm tehlike levhası, kullanma talimatı ve uyarı talimatı plakaları uygun şekilde takılacaktır.*
- 6.5. *Kapağında şarj regülatörünün ekranını görebilecek şekilde olacaktır.*
- 6.6. *Bütün anahtar ve ekranlar dış kapak üzerinde olacak şekilde tasarlanacaktır.*
- 6.7. *Taşıma sırasında bileşenler zarar görmesin diye tüm bileşenler (Akü-Evirici-Şarj Regülatörü) sabitlenmiş olacaktır.*
- 6.8. *Pano en az 0,8 mm DKP sac ile imal edilmelidir.*
- 6.9. *Panolar idare tarafından uygun görülen renklere boyanmış şekilde teslim edilecektir.*
- 6.10. *Panel ile pano arasına enerji aktarımını sağlamak için idarenin onay verdiği konstrüksiyona göre solar FV tipi kablo konulmalıdır.*
- 6.11. *Görünürlük için panoların üzerine "Kırsal Dezavantajlı Alanlar Kalkınma Projesi Adana-2022" ibaresi boya, plaka ya da çıkartma ile yazılmalıdır. Kullanılan plakalar kolay okunabilir boyutta hazırlanmalı ve*

- 6.5. It shall allow the charge regulator screen to be seen on the cover.
- 6.6. It shall be designed so that all switches and screens are on the outer cover.
- 6.7. All components (Battery-Inverter-Charge Regulator) shall be fixed so that the components are not damaged during transportation.
- 6.8. The board must be manufactured of at least 0.8 mm DKP sheet metal.
- 6.9. Boards shall be painted in appropriate colours as defined by the Administration.
- 6.10. In order to transfer energy between the board and panel, solar PV type cable must be placed according to the construction approved by the administration.
- 6.11. For visibility, the phrase "—Kırsal Dezavantajlı Alanlar Kalkınma Projesi Adana-2022" with corporate logos on the boards must be written by paint, plate, or sticker. The plates used must be prepared in an easily readable size and mounted in such a way that they cannot fall. If paint or stickers are to be used, they must be prepared in easily readable sizes, and they must be long-lasting by using materials that shall not fade.
- 6.12. The placement of the components (equipment) in the board shall be designed in such a way that the board shall not be damaged during the transportation.
- 6.13. All electrical and electronic devices belonging to the solar energy system to be installed and the cabinets which will contain them, all carrier construction, metal parts and auxiliary metal mounting materials shall be grounded. Grounding in accordance with the standards shall be made on both DC side and AC side by the contractor.

7. GENERAL GUIDELINES

- 7.1. All materials and equipment shall be manufactured and installed in accordance with the production techniques in the electrical manufacturing and installation industry and shall comply with the standards stipulated in the respective item. In case a standard listed within this Technical

düşmeyecek şekilde monte edilmelidir. Boya veya çıkartma kullanılacaksa kolay okunabilir boyutlarda hazırlanmalı silinmeyecek solmayacak malzemeler kullanılarak uzun ömürlü olması sağlanmalıdır.

6.12. *Pano içerisindeki komponentlerin (ekipmanların) yerleşimi panonun taşınması sırasında zarar görmeyecek şekilde tasarlanacaktır.*

6.13. *Kurulacak güneş enerji sistemine ait tüm elektrikli ve elektronik cihazlarla, bunların içine konulacağı kabinler, tüm taşıyıcı metal aksamlar, konstrüksiyon ile metal aksamlar, tüm yardımcı metal montaj malzemeleri topraklanacaktır. Hem DC tarafta hem de AC tarafta standartlara uygun topraklamalar yüklenici tarafından yapılacaktır.*

7. GENEL ESASLAR

7.1. *Tüm malzeme ve teçhizat, elektrik imalat ve tesisat endüstrisindeki üretim tekniklerine uygun olarak imal ve tesis edilecek ve ilgili maddelerde belirtilen standartlara uygun olacaktır. İhale sürecinde işbu teknik şartnamede belirtilen bir standardın yürürlükten kalkması veya iptal edilmesi durumunda yerine geçen standarda uygunluk da yeterli kabul edilecektir.*

7.2. *İsteklilerin teklif ettikleri cihazların kalite veya hususiyet itibariyle aynısı veya benzeri bulunmadığı takdirde, daha yüksek kalitede olanları idarenin onayı ile teslim edecek ve bu bunun için herhangi bir ücret talebinde bulunamayacaktır.*

7.3. *Kurulacak sistem elemanları parça bazında en az 2 (iki) yıl ürün garantisine sahip olacaktır.*

7.4. *Sistem içerisinde kullanılacak tüm cihazlar, yeni (brand new) ve kullanılmamış (unused) olacak, üzerlerinde marka, model ve imal tarihini gösteren işaret, yazı, rakam vs. türünden bilgiler bulunacaktır.*

7.5. *Taşınabilir Güneş enerji sistemlerinde meydana gelecek arızalar yüklenici tarafından yararlanıcının ikamet şartlarına uygun olarak en kısa zamanda giderilecektir.*

7.6. *Yüklenici firma sözleşmeyi imzaladıktan sonra*

Specifications is abolished or cancelled, the standard replacing it will be considered suffice.

- 7.2. If identical or similar in terms of quality or characteristics of the devices offered by the bidders cannot be found, it shall substitute with the higher quality ones upon the approval of the administration and shall not request any cost for this.
- 7.3. The system components to be installed shall have a product warranty of at least 2 (two) years on part basis.
- 7.4. All devices to be used in the system shall be brand new and unused, with information such as signs, letters, numbers etc. indicating the brand, model, and date of manufacture.
- 7.5. Malfunctions in portable solar energy systems shall be fixed by the contractor as soon as possible in accordance with the beneficiary's residence conditions.
- 7.6. The contractor company has to deliver the subject matter systems at Adana Provincial Agriculture and Forestry Directorate, within 90 days after signing the contract. The default penalty specified in the contract shall be applied for each day of delay.
- 7.7. The assembly, installation, operation, fault detection and maintenance manual of all equipment shall be in Turkish and English and shall be delivered on the date of signing.
- 7.8. Damages detected during the delivery of Portable Solar Energy panels shall be repaired by the contractor. There shall be no foreign substances (oil, dirt, metallic residue, etc.) on all parts before assembly.
- 7.9. The accuracy of the power of the solar panels to be procured within the scope of the tender must be submitted and delivered to the Provincial Directorate of Agriculture and Forestry, where the FLAŞ Test (I-V CURSE Test as well as the ELECTROLYMUNANCE (EL) Test for cellular cracks and durability in solar panels).
- 7.10. The Contractor shall demonstrate 1 unit of prototype solar energy set to the Control Engineer of the administration, prior to the delivery of the solar energy sets to the administration.

90 gün içinde işleri Adana İl Tarım ve Orman Müdürlüğünde teslim edecektir. Geciken her gün için sözleşmede belirtilen gecikme cezası uygulanır.

- 7.7. Bütün ekipmanların montajı, kurulumu, işletimi, arıza tespiti ve bakım el kitabı Türkçe ve İngilizce olacaktır ve imza tarihinde teslim edilecektir.
- 7.8. Taşınabilir Güneş Enerji panellerinin teslimi sırasında tespit edilen zararların yüklenici tarafından onarımı yapılacaktır. Montaj öncesinde tüm parçaların üzerinde herhangi bir yabancı madde (yağ, kir, metalik kalıntı, vs.) olmayacaktır.
- 7.9. İhale kapsamında temin edilecek solar panellerin güçlerinin doğruluğu FLAŞ Test (I-V CURSE Testi ayrıca solar panellerde hücresel çatlak ve sağlamlık için ELEKTROLÜMÜNANS (EL) Testinin) belgelenmesinin panellerin tesliminin yapılacağı İl Tarım ve Orman Müdürlüğüne teslim edilmesi gerekmektedir.
- 7.10. Yüklenici, güneş enerji setlerini idareye teslim etmeden önce 1 adet prototip güneş enerjisi setinin demonstrasyonunu idare Kontrol Mühendisine yapacaktır. Prototip setin, işbu şartnamede belirtilen teknik kriterlere uygun olduğunun tespiti akabinde, bu prototipe göre üretilen güneş enerjisi setleri muayene ve kabul yapılmak üzere idareye teslim edilecektir

8. GARANTİ KOŞULLARI

- 8.1. Sistemde kullanılan bütün ekipman ve araçlar (işçilik kalitesi dahil) hatasız, yeni ve birinci kalitede olacaktır. Kullanılan malzemeler (herhangi bir parçası dahil) garanti periyotları içerisinde tasarım, işçilik veya malzeme kalitesinden dolayı arızalandıklarında, yüklenici aynı malzemeyi temin edip kurmakla yükümlü olacaktır. Sistemde kullanılacak komponentlerin, FV Sistem geçici kabul tarihinden itibaren, garanti periyotları aşağıdaki şekilde olacaktır:
- 8.2. Fotovoltaik güneş panelleri; 10 yıl fiziksel dayanım (mekanik, elektrik-elektronik vb.) garanti belgesi veya taahhütnamesi
- 8.3. Güneş paneli alt konstrüksiyonu; 2 yıl.

8. WARRANTY CONDITIONS

- 8.1. All equipment and tools used in the system (including workmanship quality) shall be flawless, new and of first quality. When the materials used (including any part) fail due to design, workmanship or material quality within the warranty periods, the contractor shall be obliged to supply and install the same material. The warranty periods of the components to be used in the system, starting from the temporary acceptance date of the PV System, shall be as follows:
- 8.2. Photovoltaic solar panels; 10 years physical resistance (mechanical, electrical-electronic etc.) warranty certificate or letter of undertaking
- 8.3. Solar panel sub-construction; 2 years.
- 8.4. Invertors; 2 years
- 8.5. Other sections / parts; 2 years
- 8.6. Defects and malfunctions, other than due to force majeure and user errors, that occur within the scope of the warranty period shall be remedied by reparation/replacement of the broken hardware, parts, or sections by the contractor free of charge. All kinds of insurance, transportation, cargo and other expenses in the repair, maintenance, replacement of the devices shall be borne by the contractor.
- 8.7. Failures with the same character occurring in 10% of an identical part or element in the systems during the warranty period are considered characteristic failures. The costs related to solving these malfunctions, along with delivery to the user and setup costs shall be under the responsibility of the contractor, and the malfunctions and costs that occur shall be remedied by the contractor as soon as possible considering the area where the portable solar energy system is installed and the transportation conditions.

8.4. İnverterler; 2 yıl

8.5. Diğer kısımlar/parçalar; 2 yıldır

8.6. Garanti süreleri kapsamında meydana gelen mücbir sebepler ve kullanıcı hataları dışındaki kusur ve arızalar, arızalanan donanım, donanıma ait parça veya kısmın yüklenici tarafından ücretsiz olarak değiştirilmesi/onarılması yoluyla giderilecektir. Cihazların tamir, bakım, değiştirilmesi işlemlerinde her türlü sigorta, nakliye, kargo ve diğer masrafları yükleniciye ait olacaktır.

8.7. Garanti müddeti içinde sistemlerde özdeş bir parça veya elemanın %10 adedinde aynı karakterde meydana gelen arızalar karakteristik arıza kabul edilir. Bu arızaların giderilmesi ile kullanıcıya teslimi ve kuruluma ilişkin bütün masrafları yükleniciye ait olup, taşınabilir güneş enerji sisteminin kurulduğu alan ve ulaşım şartları dikkate alınarak meydana gelen arızalar ve masraflar en kısa zamanda yüklenici tarafından giderilecektir

9. DİĞER HUSUSLAR

9.1. Projede kullanılacak tüm malzemeler ve sistem tasarımı; Elektrik Tesisleri Proje Yönetmeliği ile Elektrik Üretim ve Elektrik Depolama Tesisleri Kabul Yönetmeliği hükümlerine uygun olacaktır.

9.2. Solar sistemlerin teslim yeri Adana İl Tarım ve Orman Müdürlüğü'dür.

9.3. Teknik şartname ve eklerinde değinilmeyen, ancak işin tekniği ve sistemin fonksiyonel çalışması ve sorunsuz bir işletmenin tesisi açısından sistemde bulunması gereken her türlü asli ve yardımcı tüm ekipmanlar ile yapılması zorunlu olan tüm işler İdarenin lehine olan hususlar olarak kabul edilip ihale bedeli içinde İdareden herhangi bir ücret talep edilmeyecektir.

9.4. Teknik şartnamede belirtilen iş ve grupların dışında, teknik şartname ve sözleşme eklerinde bahsi geçmeyen ancak işin bünyesinde yapılması zorunlu olan, her tür yardımcı malzemenin, temini, Adana iline nakliyesi genel gider ve karları teklif edilen bedelin

9. OTHER ISSUES

- 9.1. All materials and system design to be used in the project; shall comply with the provisions of the Electricity Facilities Project Regulation and the Electricity Generation and Electricity Storage Facilities Acceptance Regulation.
- 9.2. The place of delivery of solar systems is Adana Provincial Directorate of Agriculture and Forestry.
- 9.3. All kinds of essential and auxiliary equipment and mandatory works that are not mentioned in the technical specification and its annexes, but which are required by the technique of the work and for the functional operation of the system and for the establishment of a problem-free operation, shall be considered as matters in favour of the Administration and shall be carried out within the tender price. No fee shall be requested from the Administration regarding these.
- 9.4. Except for the works and groups specified in the technical specification, the procurement, delivery to Adana Province, overhead and profits of all kinds of auxiliary materials, which are not mentioned in the technical specifications and contract annexes, but which are required to be made within the scope of the work, are included in the price offered, and the said works shall be under the liability of the company.
- 9.5. Delivery of the package system to nomad families at Adana Provincial Agriculture and Forestry Directorate, making the system functional together with the construction, training the relevant user and all other system requirements as well as all works and transactions shall be under the liability of the contractor, and they shall be carried out without any additional cost. In case the solar panel system does not work after installation, the contractor will undertake the change/repair of the system. No cost will be requested for these.
- 9.6. The company shall be responsible for any damage and loss that may occur during the delivery of the work at Adana Provincial Directorate of Agriculture and Forestry; the

inde olup, söz konusu işler firmaya ait olacaktır.

- 9.5. *Paket sistemin konstrüksiyon ile birlikte çalışır halde, Adana İl Tarım ve Orman Müdürlüğünde konar göçer ailelere teslim edilmesi, burada göçer ailelere kullanım ve kurulum hakkında bilgi ve eğitimlerinin verilmesi ve diğer sistem gereksinimleriyle bütün iş ve işlemler yüklenici sorumluluğunda olup ek bedel alınmaksızın gerçekleştirilecektir. Kurulum sonrasında güneş paneli sisteminin çalışmaması durumunda, sistemin değiştirilmesi-tamiri yüklenici tarafından gerçekleştirilecektir. Bunlarla ilgili her hangi bir ücret talep edilmeyecektir.*
- 9.6. *İşin Adana İl Tarım ve Orman Müdürlüğünde teslimi sırasında oluşabilecek her türlü zarar ve ziyandan firma sorumlu olacak olup; tespit edilecek hasar firmadan tazmin edilecektir.*
- 9.7. *Teklif veren isteklilerin solar panellere ile ilgili üretici firmaya ait; Kapasite Raporunu ve İmalat Belgesini –sözleşme imza aşamasında sunması gerekmektedir.*
- 9.8. *Yüklenici teslim sürecinde iş güvenliği yasalarına uygunluğunu sağlayacaktır.*
- 9.9. *Cihaz kullanırken can güvenliği sorumluluğu kullanıcının kendisine aittir.*
- 9.10. *Taşınabilir GES sistemini oluşturan bileşenler ve bu bileşenlerin teknik özelliklerine işbu teknik şartnamede detaylı olarak yer verilmiştir. Bu özelliklerin esas alınması gerekmele birlikte teknik özellikler içinde yer verilmeyen tasarıma ilişkin hususlarda ilgililerce, pazarda/uygulamada cari tasarım(lar)ın esas alınarak fiyat tekliflerinin oluşturulması gerekmektedir.*

<p>damage to be determined shall be compensated by the company.</p> <p>9.7. Bidders who submit bids must submit Capacity Report and Manufacturing Certificate related to the manufacturing company regarding solar panels, at the time of contract signature.</p> <p>9.8. The contractor shall ensure compliance with occupational safety laws during the delivery process.</p> <p>9.9. While using the device, life safety responsibility belongs to the user.</p> <p>9.10. Components forming the portable solar power system, along with the technical specifications of these components have been stipulated within the technical specifications in detail. Apart from taking these specifications into consideration, the bidders should also take the prevailing designs in market/practice into consideration for issues regarding design which have not been stipulated within the technical specifications.</p>	
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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:

<p>Delivery Term [INCOTERMS 2020] <i>(Pls. link this to price schedule)</i></p>	<p>DAP</p>
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Exact Address of Delivery/Installation Location	<p>LOT 1: 340Wp Portable Solar Power Set (630 sets) MERSİN</p> <ul style="list-style-type: none"> a) 100 sets to be delivered to Center of Mersin (CoM), b) 136 sets to be delivered to Tarsus District (approximately 40 km to the CoM), c) 131 sets to be delivered to Silifke District (approximately 100 km to the CoM), d) 136 sets to be delivered to Erdemli District (approximately 40 km to the CoM) and e) 127 sets to be delivered to Mut District (approximately 200 km to the CoM): <p>Exact delivery locations in mentioned Districts of Mersin will be shown by Mersin Provincial Agriculture and Forestry Directorate.</p> <p>LOT 2: 510Wp Portable Solar Power Set (197 sets) ADANA: Adana İl Tarım ve Orman Müdürlüğü, Köprülü Mahallesi Mithat Özsan Bulvarı No:4 01330 Yüreğir/Adana</p> <p>Transportation related costs of items for delivery to above mentioned locations will be included in the price offer. The Contractor will not be entitled to any additional payments for transportation related costs.</p>
Delivery Time	Within 90 days following the signature of the contract.
Interim Inspection	<p>Will be required for LOT 1 and LOT 2</p> <p>The Contractor shall submit in the respective Provincial Directorate of Agriculture and Forestry (i.e Adana or Mersin) 1 prototype Portable Solar Power Set per each LOT to be produced for the interim inspection in the manufacturing stage, and after the interim inspection, remaining units shall be produced. Materials that are not deemed suitable by UNDP shall not be used in the manufacturing.</p> <p>Approved warranty documents of all parts of the solar system will be submitted to UNDP for each container prior to delivery.</p>
Inspection/Acceptance upon delivery	<p>All the equipment shall be provided complete with the necessary accessories and/or parts, such as to ensure that the unit can operate to the required technical and quality specifications.</p> <p>System components and whole system must be compatible with each other. Any interoperability problems between software and hardware must be resolved by the Contractor at no additional cost.</p>

	In addition to the Article 11 "Purchase of Goods" of Annex 3- General Terms and Conditions for Contracts, inspection and acceptance procedures shall be carried out by the Inspection and Acceptance Committee following the delivery of goods. At the end of the inspections, UNDP has the right to not release to the Contractor any payments in the event that the Inspection and Acceptance Committee detects incomplete and/or improper work in accordance with the Technical Specifications.
Installation Requirements	Installation is not required for any of the items
Testing Requirements	Required for PV panels
Warranty Period	All items shall have at least 2 years manufacturer warranty. Photovoltaic solar panels shall have at least 10 years physical resistance (mechanical, electrical-electronic, etc.) warranty
Payment Terms	For each Lot - 20 % of contract value (advance payment) upon receipt and acceptance by UNDP of a bank guarantee for the full amount of the advance payment issued by a Bank and in a form acceptable to UNDP and 80 % of the respective LOT's contract amount shall be paid based on the positive "inspection and acceptance report" to be issued by UNDP upon conduct of inspection by a committee to be established by UNDP, following turnkey delivery of all equipment and materials subject of this ITB. Payment shall be affected in thirty calendar days following written acceptance of goods by UNDP and submission of the invoice by the Contractor, in accordance with UNDP General Terms and Conditions of Contracts.
Conditions for Release of Payment	<input checked="" type="checkbox"/> Inspection of Goods upon arrival at destination <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	Other (pl.specify) _____ Turkish and/or 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	<input type="checkbox"/>
▪ Form G: Form of Bid Security	<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:	UNDP-TUR-ITB(UR)-2022-70		

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) <i>(If yes, provide a Copy of the valid Certificate):</i>	[Complete]
Does your Company hold any accreditation such as ISO 14001 or ISO 14064 or equivalent related to the environment? <i>(If yes, provide a Copy of the valid Certificate):</i>	[Complete]
Does your Company have a written Statement of its Environmental Policy? <i>(If yes, provide a Copy)</i>	[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 contact for requests for	Name and Title: [Complete]

clarifications during Bid evaluation	Telephone numbers: [Complete] Email: [Complete]
Please attach the following documents:	<ul style="list-style-type: none"> ▪ Certificate of Incorporation/ Business Registration ▪ Trade name registration papers, if applicable ▪ Signature Circular/Power of Attorney ▪ Certification or authorization to act as agent / dealer / distributor on behalf of the Manufacturer. ▪ Patent Registration Certificates if any of technologies submitted in the Bid is patented by the Bidder. ▪ Export Licenses, if applicable ▪ Official Letter of Appointment as local representative, if Bidder is submitting a Bid on behalf of an entity located outside the country.

Form C: Joint Venture/Consortium/Association Information Form

Name of Bidder:	[Insert Name of Bidder]	Date:	Select date
ITB reference:	UNDP-TUR-ITB(UR)-2022-70		

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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Bidders shall attach a copy of notarized JV/Consortium/Association agreement 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.

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: _____

Signature: _____

Date: _____

Form D: Eligibility and Qualification Form

Name of Bidder:	[Insert Name of Bidder]	Date:	Select date
ITB reference:	UNDP-TUR-ITB(UR)-2022-70		

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 (1 June 2019 and onwards)			
<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 TRY)
		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 (1 June 2019 and onwards)			
<input type="checkbox"/> Litigation History as indicated below			
Year of dispute	Amount in dispute (in TRY)	Contract Identification	Total Contract Amount (current value in TRY)
		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 5 years. (1 June 2017 and onwards)

List only those assignments for which the Bidder was legally 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

In the case a bidder submits a contract in a currency other than TRY (Turkish Liras) that value shall be converted to TRY by using UN Operational Rate of Exchange of the contract date at the above table.

Bidders shall submit Statements of Satisfactory Performance (i.e. Reference Letters, Work Completion Certificates) along with their bids. Reference letters and/or Completion Certificates shall include the information requested in above table at minimum.

Financial Standing

Annual Turnover for the last 3 years*	Year 2019	USD
	Year 2020	USD
	Year 2021	USD
Latest Credit Rating (if any), indicate the source		

Financial information (in USD equivalent*)	Historic information for the last 3 years		
	2019	2020	2021
	<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			

*In the case of financial values are in a currency other than USD bidders shall convert the value which was effective for 31 December of each corresponding year by using UN Operational Rates of Exchange for the relevant period and specify USD values in above tables. UN Operational Rates of Exchange are available at the following website: <https://treasury.un.org/operationalrates/OperationalRates.php#E>

Bidders shall submit 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:

- a) Historic financial statements must be audited by a certified public accountant.
- b) Historic financial statements must correspond to accounting periods already completed and audited. No statements for partial periods shall be accepted.

c) Must reflect the financial situation of the Bidder or party to a JV, and not sister or parent companies.

Form E: Format of Technical Bid

Name of Bidder:	[Insert Name of Bidder]	Date:	Select date
ITB reference:	UNDP-TUR-ITB(UR)-2022-70		

Technical Compliance Table

Bidders shall fill out below table by indicating the Brand Name of the products offered as well as the specifications of the offered products corresponding to the specifications listed in below table.

Offered specifications shall meet the minimum requirements stipulated in below table.

LOT 1 340Wp Portable Solar Power Set <i>LOT 1 340Wp Portable Solar Power Set</i>		
Item to be supplied description // <i>Tedarik edilecek ürün tanımı</i>	Set Content // <i>Set içeriği</i>	Quantity // <i>Miktar</i>
Min. 340 Wp (Single or 2x170 Wp) Polycrystalline Solar Module	1 X 340Wp or // <i>veya</i> 2 X 170Wp	630 sets // <i>630 set</i>
MS 1200 W Modified Sine Inverter	1 unit	
20A 12/24 V Charge Regulator (with MPPT feature and LCD screen)	1 unit	
200Ah Gel Battery (2x100 Ah or 1x200 Ah)	1 X 200Ah or // <i>veya</i> 2 X 100Ah	
PV substructure / Panel-Electric Cabling (including consumables such as battery cable, protection fuse, cable duct, battery terminals or lugs)	1 unit	
Technical Specifications <i>Teknik Şartname</i>		Offered technical specifications by the Bidder shall be inserted in English. <i>Firma tarafından teklif edilen teknik özellikler İngilizce olarak verilmelidir.</i>
1. SOLAR PANEL 1.1. PV modules must be within the instantaneous output power tolerance of [0, + 5Wp]. All modules must be ordered with positive power tolerance only. All PV modules shall be 'higher than nominal' of the power output report of the flash test at the manufacturing plant. Negative power tolerance shall not be accepted. 1.2. The PV panel type to be used	1. SOLAR PANEL <i>1.1. FV modüller, [0, + 5Wp] anlık çıkış gücü toleransı içinde olmalıdır. Tüm modüller sadece pozitif güç toleransı ile sıralanmalıdır. Tüm PV modülleri, imalat fabrikasında flaş testinin güç çıkış raporunun 'nominal değerinden yüksek' olacaktır. Negatif güç toleransı kabul edilmeyecektir.</i> <i>1.2. Kullanılacak olan FV panel tipi polikristal yapıda olacaktır. FV</i>	

<p>shall have a crystalline structure. The power of the PV Solar Panel (Solar Module) must be minimum 340 Wp. PV panels must be of identical / same brand PV module manufacturers. All Solar PV modules shall be of the same brand and shall have the same type and power.</p> <p>1.3. The connectors of the FV modules must be of the original MC4 family. Connectors to be used in the DC system must be of the same brand, model and identical. The connectors of the FV modules must meet the IP67 water resistance standard.</p> <p>1.4. PV module efficiency Standard Test Conditions (<i>Standard Test Conditions: shall be at least 18% under 1000W/m² radiation 25°C module temperature and AM = 1.5 spectrum</i>), and PV modules with an efficiency of less than 18% shall not be accepted.</p> <p>1.5. Against power drops caused by shadowing, at least 2 of the PV modules shall have by-pass diodes. Protection shall be provided so that there is no current flow to the PV modules, when energy is not generated.</p> <p>1.6. The front glasses of PV modules must be resistant to external stresses. (For example, the glass shall not break easily in case of throwing rocks or against impacts such as ice and hail.)</p> <p>1.7. PV modules and fasteners shall have wind resistance with a capacity to withstand</p>	<p><i>Güneş Paneli (Solar Modül) gücü minimum 340 Wp olmalıdır. FV modüller özdeş / aynı marka FV modül üreticilerinden olmalıdır. Tüm Solar FV modülleri aynı marka, aynı tip ve güçte olacaktır.</i></p> <p><i>1.3. FV modüllerinin konnektörleri orijinal MC4 familyasından olmalıdır. DC sistemde kullanılacak konnektörler aynı marka, model ve özdeş olmalıdır. FV modüllerin konnektörleri IP67 suya dayanıklılık standardını sağlamalıdır.</i></p> <p><i>1.4. FV modül verimi Standard Test Koşulları (Standart Test Koşulları: 1000W/m² ışınım, 25°C modül sıcaklığı ve AM=1,5 spektrum) altında en az %18 olacaktır, verimliliği %18'in altında olan FV modüller kabul edilmeyecektir.</i></p> <p><i>1.5. Gölgelemenin neden olduğu güç düşüşlerine karşı, FV modüller az 2 adet by-pass diyotlu olacaktır. Enerjinin üretilmediği durumda FV modüllere akım geçişi olmayacak şekilde koruma yapılacaktır.</i></p> <p><i>1.6. FV modüllerin ön camları harici olarak uygulanacak zorlanmalara karşı dayanıklı olacaktır. (Örneğin taş atılması durumunda veya buz, dolu gibi parça darbelerine karşı cam kolaylıkla kırılmayacak yapıda olacaktır.)</i></p> <p><i>1.7. FV modüller ve bağlantı elemanları en az 130 km/saat hızındaki rüzgâra dayanabilecek kapasitede rüzgâr direncine sahip</i></p>	
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<p>at least 130 km / hour wind.</p> <p>1.8. PV Modules shall be able to withstand a wind load of min. 2400 Pa and a snow load of min. 5400 Pa.</p> <p>1.9. PV module connection box (Junction Box) must be rated IP 67 protection class at least and there must be no cover falling problem in hot or cold weathers.</p> <p>1.10. The (+) and (-) poles of the PV Module direct current output cables and convectors shall be easily distinguishable.</p> <p>1.11. The direct current output cables of the PV module shall be 2 cables with a length of at least 10 meters for each pole, in compliance with TS EN50525-2-11 standards or foreign/international equivalent standards, with a minimum cross-section of 6 mm² (one red, one black).</p> <p>1.12. Frames mounted with bolts on solar panels shall not be accepted. Panel frames must be pressed and at the same time punched.</p> <p>1.13. The frame of PV modules must be made of corrosion resistant material (anodized aluminium).</p> <p>1.14. PV modules shall operate smoothly within a temperature range of -40 ° C to + 85 ° C and a relative humidity range of 0 to 90%. This must be readable from the provided technical document.</p> <p>1.15. The warranty documents given by the manufacturer for the Modules offered. When necessary, values under</p>	<p><i>olacaktır.</i></p> <p><i>1.8. FV Modüller min. 2400 Pa rüzgar yüküne ve min 5400 Pa kar yüküne dayanabilecek yapıda olacaktır.</i></p> <p><i>1.9. FV modül bağlantı kutusu (Junction Box) en az IP 67 koruma sınıfında olmalı ve sıcak veya soğuk havalarda kapak düşme sorunu olmamalıdır.</i></p> <p><i>1.10. FV modül doğru akım çıkış kabloları ve konvektörlerinin (+) ve (-) kutupları ayırt edilebilir yapıda olacaktır.</i></p> <p><i>1.11. FV modül doğru akım çıkış kabloları her bir kutup için en az 10 metre uzunlukta, TS EN50525-2-11 standartlarına veya yabancı/uluslararası dengi standartlara uygun olmalıdır ve de minimum 6 mm² kesitinde 2 adet (bir adet kırmızı renkli, bir adet siyah renkli) kablo olacaktır.</i></p> <p><i>1.12. Güneş panellerinde civatalı olarak montajlanmış çerçeveler kabul edilmeyecektir. Panel çerçeveleri preslenmiş, aynı zamanda punch işlemi de görmüş olmalıdır.</i></p> <p><i>1.13. FV modüllerin çerçevesi korozyona dayanıklı malzemedan imal edilmiş ve paslanmaz yapıda (anodize alüminyum) olmalıdır.</i></p> <p><i>1.14. FV modüller: -40 ° C ile + 85 ° C sıcaklık aralığında ve %0 -90 bağıl nem aralığında sorunsuz çalışacaktır. Bu durum sunulan teknik dokümandan okunabilecektir.</i></p> <p><i>1.15. Teklif edilen modüller için üreticinin vereceği garanti belgeleri. Gerektiğinde</i></p>	
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<p>normal operating conditions may also be requested.</p> <p>1.16. PV modules to be used in the solar energy system shall have been manufactured in 2021 or later.</p> <p>1.17. The lifespan of the PV modules must have a minimum of 10 years of mechanical and 20 years of performance warranty. Linear energy guarantee shall be such that the Contractor shall commit that it shall provide at least 90% of the panel power at the end of 10 years and at least 80% at the end of 20 years. Linear guarantee for panels must be presented in the offer, together with the product catalogues.</p> <p>1.18. Each of PV modules shall have at least 2 serial number barcode (one of which shall be inside the glass of the module) and 1 label. The FV module label shall include, but is not limited to, at least the following.</p> <p>1.18.1. Vmpp, Voc Imp, Ioc, Pmpp, NOCT values,</p> <p>1.18.2. Max operating voltage value</p> <p>1.18.3. Length, weight data</p> <p>1.18.4. Power tolerance</p> <p>1.18.5. Quality class</p> <p>1.18.6. Test conditions (STC) (Radiation, temperature, humidity)</p> <p>1.18.7. Brand, model, serial number details</p> <p>1.18.8. CE marking</p> <p>1.18.9. Country of Production</p> <p>1.18.10. Name of the Manufacturer Company</p> <p>1.19. During the production of the panels, the logos of the Ministry of</p>	<p><i>Normal çalışma koşullarındaki değerler de istenebilecektir.</i></p> <p><i>1.16. Güneş enerjisi sisteminde kullanılacak FV modüller 2021 veya sonrasında üretilmiş olacaktır.</i></p> <p><i>1.17. FV modülerin ömrü minimum 10 yıl mekanik ve 20 yıl performans garantisine sahip olmalıdır. Lineer enerji garantisi, panel gücünün 10 yıl sonunda en az %90'ını ve 20 yılsonunda en az %80'ini sağlayacak şekilde olmasını yüklenici taahhüt edecektir. Panellerin lineer garantisi ürün katalogları ile birlikte teklifte sunulmalıdır.</i></p> <p><i>1.18. FV modüllerin her birinde en az 2 adet (biri modülün camının içinde olacak) seri numarası barkodu ve 1 adet etiket bulunacaktır. FV modül etiketi bunlarla sınırlı olmamak üzere en az aşağıdakileri içerecektir.</i></p> <p><i>1.18.1. Vmpp, Voc Imp, Ioc, Pmpp, NOCT değerleri</i></p> <p><i>1.18.2. Max çalışma gerilimi değeri</i></p> <p><i>1.18.3. Uzunluk, ağırlık verileri</i></p> <p><i>1.18.4. Güç toleransı</i></p> <p><i>1.18.5. Kalite sınıfı</i></p> <p><i>1.18.6. Test koşulları (STC) (Işınım, sıcaklık, nem)</i></p> <p><i>1.18.7. Marka, model, seri numarası bilgileri</i></p> <p><i>1.18.8. CE işareti</i></p> <p><i>1.18.9. Üretilen Ülke</i></p> <p><i>1.18.10. Üretici Firma İsmi</i></p> <p><i>1.19. Panellerin imalatı sırasında Tarım ve Orman Bakanlığı, IFAD, UNDP ve KDAK Projesi logoları panellerin içine cam içi laminasyon işlemi</i></p>	
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<p>Agriculture and Forestry, IFAD, UNDP and URDP Project shall be prepared to be clearly visible after applying an in-glass lamination process inside the panels.</p> <p>1.20. The serial number of each panel shall be readable in the window and the test report shall be arranged according to the serial number.</p> <p>1.21. The name and surname of the farmer, project number and delivery date shall be tagged on the panel frames by a fixed and permanent method.</p> <p>1.22. The contractor must provide the laboratory test results of the panels, at the time of delivery.</p> <p>2. INVERTER (Inverter, Modified Sine)</p> <p>2.1. It shall have a nominal power of 1200W, input voltage shall be: 12 Volt DC voltage, output voltage shall be 220/230 Volt AC 50 Hertz.</p> <p>2.2. The inverter shall have overload, high temperature, low voltage, and short circuit protections features.</p> <p>2.3. The inverter shall have an operating temperature range of 0 - +40 °C and shall be able to operate at a maximum relative humidity of 90%.</p> <p>2.4. The inverter shall have a minimum efficiency of 90%.</p> <p>2.5. Inverters shall be able to operate with gel battery.</p> <p>2.6. In case of overload, overvoltage, and short circuit, it shall protect the system and restart the inverter.</p> <p>2.7. It must be able to give an</p>	<p><i>uygulanarak net olarak görülecek şekilde hazırlanacaktır.</i></p> <p><i>1.20. Her bir panelin mutlaka seri numarası cam içinde okunur şekilde olacak ve test raporu seri numarasına göre düzenlenecektir.</i></p> <p><i>1.21. Panel çerçevelerine sabit ve kalıcı etiket yöntemiyle, çiftçinin adı, soyadı proje numarası yazılacaktır.</i></p> <p><i>1.22. Teslim sırasında yüklenici firma panellere ait laboratuvar test sonuçlarını vermek zorundadır.</i></p> <p>2. EVİRİCİ (İnvertör, Modifiye Sinüs)</p> <p><i>2.1. Nominal 1200W gücünde, giriş gerilimi: 12 Volt DC gerilimi, çıkış gerilimi: 220/230 Volt AC 50 Hertz olacaktır.</i></p> <p><i>2.2. Evirici, aşırı yük, yüksek sıcaklık, düşük gerilim ve kısa devre korumalarına sahip olacaktır.</i></p> <p><i>2.3. Evirici, çalışma sıcaklık aralığı: 0, +40 °C olacak ve maksimum %90 bağıl nemde çalışabilecektir.</i></p> <p><i>2.4. Evirici verimi minimum % 90 olacaktır.</i></p> <p><i>2.5. Eviriciler jel aküyle çalışabilecek yapıda olacaktır.</i></p> <p><i>2.6. Aşırı yük, gerilim ve kısa devre durumunda sistemi korumaya alarak eviriciyi yeniden başlatacaktır.</i></p> <p><i>2.7. Aşırı yük ve ısınma durumunda sesli ikaz verebilmelidir.</i></p> <p><i>2.8. Evirici gerilim girişi en az 10.5 Vdc – en çok 16 VDC aralığında olmalıdır.</i></p>	
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<p>audible warning in case of overload and heating.</p> <p>2.8. The inverter's voltage input must be in the range of at least 10.5 Vdc - maximum 16 Vdc.</p> <p>2.9. It must have Low voltage alarm (9.5 V +,-) to protect the battery. It must have protection fuses.</p> <p>2.10. MS inverter must have a CE mark.</p> <p>2.11. The inverter must be guaranteed for at least 2 years.</p> <p>2.12. It shall have EN60950, EN55022 Standards.</p> <p>2.13. It shall have a cooling fan.</p> <p>2.14. It shall have minimum 1 USB output.</p> <p>3. SOLAR CHARGE REGULATOR</p> <p>3.1. 12 Volt / 24 Volt 20 Amps Automatic sensing charge regulator</p> <p>3.2. The charging module shall have MPPT feature.</p> <p>3.3. 12 / 24V automatic recognition, load operating mode: ON / OFF</p> <p>3.4. The battery charge regulator shall charge the batteries using the electrical energy generated by the solar panels, and at the same time provide protection so as not to put the batteries in overload and discharging conditions. The system voltage shall have an output according to the battery to be used.</p> <p>3.5. It shall be compatible with high level gel battery.</p> <p>3.6. Float voltage shall be 13.8V (13V-15V adjustable), Boost voltage shall be 14.4V.</p> <p>3.7. Battery overvoltage</p>	<p>2.9. Aküyü korumak için düşük gerilim alarmına (9,5 V+,-) haiz olmalıdır. Koruma sigortalarına sahip olmalıdır.</p> <p>2.10. MS evirici CE işareti taşımaktadır.</p> <p>2.11. Evirici en az 2 yıl garantili olmalıdır.</p> <p>2.12. EN60950, EN55022 Standartlarına sahip olacaktır.</p> <p>2.13. Soğutma fanı olacaktır.</p> <p>2.14. En az 1 adet USB çıkışı olacaktır.</p> <p>3. SOLAR ŞARJ REGÜLATÖRÜ</p> <p>3.1. 12 Volt / 24 Volt 20 Amper Otomatik algılamalı şarj regülatörü</p> <p>3.2. Şarj modülü MPPT özelliğine sahip olacaktır.</p> <p>3.3. 12/24V otomatik tanıma, yük çalışma modu: ON / OFF</p> <p>3.4. Akü şarj regülatörü güneş panelleri tarafından üretilen elektrik enerjisi ile akülerin şarjını sağlayacak, aynı zamanda aküleri aşırı yükleme ve boşaltma durumuna sokmayacak şekilde koruma sağlayacaktır. Sistem gerilimi kullanılacak aküye uygun olacak şekilde çıkış verecektir.</p> <p>3.5. Yüksek düzey jel akü uyumlu olacaktır.</p> <p>3.6. Float voltajı 13,8 V (13 V-15 V ayarlanabilir), Boost voltajı 14,4 V olacaktır.</p> <p>3.7. Akü aşırı gerilim koruması 16,5 V olacaktır.</p> <p>3.8. Cihazın giriş gerilim değeri minimum 50 V olacaktır.</p> <p>3.9. Şarj durumu ve hataları gösterecek dijital ekranlı olacaktır.</p> <p>3.10. Solar charger ısı</p>	
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<p>protection shall be 16.5 V.</p> <p>3.8. The input voltage value of the device shall be at least 50 V.</p> <p>3.9. It shall have a digital display to show the charge status and errors.</p> <p>3.10. The solar charger must have heat compensated battery charging capability.</p> <p>3.11. The operating range shall be outdoor temperature values of -20.... + 55°C.</p> <p>3.12. It must have a CE mark.</p> <p>4. GEL BATTERY</p> <p>4.1. Batteries shall be long-lasting, suitable for solar energy system, maintenance-free, and since the system will operate in a closed cabinet, the accumulators shall be in gel form.</p> <p>4.2. It shall have a reliable constant output current. Batteries to be used shall be resistant to deep discharge and shall have an enclosed structure.</p> <p>4.3. It shall have stable performance.</p> <p>4.4. The number of battery cycles must be > 1000 at the 50% DOD level. It shall be 100% maintenance-free. A 2-year warranty must be given by the manufacturer.</p> <p>4.5. Batteries shall work smoothly at 0 – 90% relative humidity at an ambient temperature range of 0 to + 50° C, when it is installed at an elevation of 0 – 2,000 m.</p> <p>4.6. The operating voltage shall be at least 12 VDC.</p> <p>4.7. The battery shall be at least 100 Ah.</p>	<p><i>kompanzasyonlu akü şarj özelliğine sahip olmalıdır.</i></p> <p>3.11. <i>-20....+55°C dış ortam sıcaklık değerleri çalışma aralığı olacaktır.</i></p> <p>3.12. <i>CE işaretine sahip olacaktır.</i></p> <p>4. JEL AKÜ</p> <p>4.1. <i>Aküler uzun ömürlü güneş enerjisi sistemine uygun bakım gerektirmeyen ve sistem kapalı bir kabin içerisinde çalışacağından akümülatörler jel yapıda olacaktır.</i></p> <p>4.2. <i>Güvenilir sabit çıkış akımı olacaktır. Kullanılacak olan aküler derin deşarja dayanıklı ve kapalı yapıda olacaktır.</i></p> <p>4.3. <i>İstikrarlı performansla sahip olacaktır.</i></p> <p>4.4. <i>Akülerin döngü sayısı %50 DOD seviyesinde >1000 olmalıdır. %100 bakım gerektirmeyecektir. Üretici tarafından 2 yıl garanti verilmelidir.</i></p> <p>4.5. <i>Aküler ; 0 ve +50 °C ortam ısısında , 0 – 2000 m. yükseklikte kurulu bulunduğu hallerde, % 0 – 90 bağıl nem oranında sorunsuz çalışacaktır.</i></p> <p>4.6. <i>Çalışma gerilimi en az 12 Vdc olacaktır.</i></p> <p>4.7. <i>Akü en az 100 Ah olacaktır.</i></p> <p>4.8. <i>Akülerin imalat tarihi ile idareye teslim tarihi arasında 120 günden fazla olmayacaktır. Akümülatör üzerine imalatçı firma adı, imalat tarihi nominal gerilimi "+"ve "-" işaretleri, gerilimi silinmeyecek şekilde olacaktır.</i></p>	
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4.8. There shall not be more than 120 days of difference between the date of manufacture of the batteries and the date of delivery to the administration. The name of the manufacturer company, date of manufacture, nominal voltage, "+" and "-" signs and voltage shall be indelibly written on the accumulator.

5. SOLAR CABLE

- 5.1. The PV energy cables on the PV module shall be resistant to high temperature and heat, UV-resistant, double insulated, halogen-free, lead-free, and shall be produced in accordance with TS EN 60228 standards or foreign/international equivalent standards.
- 5.2. Solar cables shall be used at an operating temperature of 90 °C without any problem.
- 5.3. In the PV - solar cable and solar cable-charge regulator-inverter connections, MC4 type male and female type connectors shall be used. Connectors, special fasteners, and sockets shall be suitable for an operating temperature range of -40 °C to + 90°C, suitable for high current and approved type.

6. PV SUB-CONSTRUCTION

- 6.1. Solar energy panels shall be designed to be suitable for transportation.
- 6.2. The construction to be used in the system shall be in an easily mountable form. It should be in a manner so that it can be demounted and

5. SOLAR KABLO

- 5.1. *FV modül üzerindeki FV enerji kabloları yüksek sıcaklık ve ısıya dayanıklı, UV dirençli, çift izoleli, halojensiz, kurşunsuz, TS EN 60228 standartlarına veya yabancı/uluslararası dengi standartlara uygun olarak üretilmiş olacaktır.*
- 5.2. *Solar kablolar 90°C çalışma sıcaklığında sorunsuz kullanılacaktır.*
- 5.3. *FV – solar kablo ve solar kablo –şarj regülatörü- inverter bağlantılarında MC4 tipi erkek ve dişi tip konektörler kullanılacaktır. Konektörler, özel bağlantı elemanları ve soketler -40°C ile +90°C arası işletme sıcaklığına uygun, yüksek akıma uygun, onaylı olacaktır.*

6. FV ALT KONSTRÜKSİYON

- 6.1. *Güneş enerji panelleri, taşımaya uygun bir şekilde tasarlanmış olacaktır.*
- 6.2. *Sistemde kullanılacak konstrüksiyon kolay montaj yapılacak yapıda olacaktır. Gerekliğinde sökölüp takılabilecek şekilde montaja uygun olacaktır. Paneller alüminyum raylara bağlantı aparatları ile tutturulup (tutucu-clamp) monte edilecektir. Raylar üçgen ayaklara monte edilecek şekilde tasarlanacaktır. Üçgen ayaklar paslanmaz malzemeden olacaktır.*

7. PANO -ELEKTRİK TESİSATI

- 7.1. *Panolar taşımaya uygun,*

mounted when needed. The panels shall be mounted by connecting to aluminium rails with connection apparatus (clamps). The rails shall be designed in a way that they will be connected to triangle legs. The triangle legs shall be made from stainless material.

7. BOARD -ELECTRIC INSTALLATION

- 7.1. Boards must be suitable for carrying, with handles and covers.
- 7.2. There must be air intake channels to prevent overheating.
- 7.3. On the surface of the board, there must be at least 1 piece of Socket with 220 AC output, with child protection, necessary warning label and fuse protection.
- 7.4. The boards shall bear metal tags containing the date of manufacture, model and serial numbers, and these tags must be visible on the board. All warning, death danger signs, operating instructions and warning instructions plates that must be present on the board and other main components (equipments) shall be properly attached.
- 7.5. It shall allow the charge regulator screen to be seen on the cover.
- 7.6. It shall be designed so that all switches and screens are on the outer cover.
- 7.7. All components (Battery-Inverter-Charge Regulator) shall be fixed so that the components are not damaged during transportation.

kulplu, kapaklı olmalıdır.

- 7.2. *Aşırı ısınmayı önlemek için hava giriş kanalları olmalıdır.*
- 7.3. *Pano yüzeyinde olacak şekilde topraklı 220 AC çıkışı çocuk korumalı, gerekli ikaz etiketli ve sigorta korumalı en az 1 adet priz olmalıdır.*
- 7.4. *Panoların üzerinde; üretim tarihi model ve seri numaraları içeren metal etiket olmalıdır ve bu etiketler panonun görülebilecek yerinde olmalıdır. Pano ve diğer ana komponentler (ekipmanlar) üzerinde bulunması gereken tüm ikaz, ölüm tehlike levhası, kullanma talimatı ve uyarı talimatı plakaları uygun şekilde takılacaktır.*
- 7.5. *Kapağında şarj regülatörünün ekranını görebilecek şekilde olacaktır.*
- 7.6. *Bütün anahtar ve ekranlar dış kapak üzerinde olacak şekilde tasarlanacaktır.*
- 7.7. *Taşıma sırasında bileşenler zarar görmesin diye tüm bileşenler (Akü-Evirici-Şarj Regülatörü) sabitlenmiş olacaktır.*
- 7.8. *Pano en az 0,8 mm DKP saç ile imal edilmeli.*
- 7.9. *Panolar İdare tarafından uygun görülen renklere boyanmış şekilde teslim edilecektir.*
- 7.10. *Panel ile pano arasına enerji aktarımını sağlamak için idarenin onay verdiği konstrüksiyona göre solar PV tipi kablo konulmalıdır.*
- 7.11. *Görünürlük için panolar üzerine "KIRSAL DEZAVANTAJLI ALANLAR KALKINMA PROJESİ MERSİN 2022" ibaresi boya, plaka ya*

<p>7.8. The board must be manufactured of at least 0.8 mm DKP sheet metal.</p> <p>7.9. Boards shall be delivered painted in appropriate colours as defined by the Administration.</p> <p>7.10. In order to transfer energy between the board and panel, solar PV type cable must be placed according to the construction approved by the administration.</p> <p>7.11. For visibility, the phrase "————KIRSAL DEZAVANTAJLI ALANLAR KALKINMA " must be written on the boards by paint, plate, or sticker. The plates used must be prepared in an easily readable size and mounted in such a way that they cannot fall. If paint or stickers are to be used, they must be prepared in easily readable sizes, and they must be indelible and long-lasting by using materials that shall not fade.</p> <p>7.12. All electrical and electronic devices belonging to the solar energy system to be installed and the cabinets which will contain them, all carrier construction, metal parts and auxiliary metal mounting materials shall be grounded. Grounding in accordance with the standards shall be made on both DC side and AC side by the contractor.</p> <p>7.13. The placement of the components (equipments) in the board shall be designed so that the board shall not be damaged during the transportation.</p>	<p><i>da çıkartmayla yazılmalıdır. Kullanılan plakalar kolay okunabilir boyutta hazırlanmalı ve düşmeyecek şekilde monte edilmelidir. Boya veya çıkartma kullanılacaksa kolay okunabilir boyutlarda hazırlanması, silinmeyecek, solmayacak malzemeler kullanılarak uzun ömürlü olması sağlanmalıdır.</i></p> <p><i>7.12. Kurulacak güneş enerjisi sistemine ait tüm elektrikli ve elektronik cihazlarla, bunların içine konulacağı kabinler, tüm taşıyıcı metal aksamlar, konstrüksiyon ile metal aksamlar, tüm yardımcı metal montaj malzemeleri topraklanacaktır. Hem DC tarafta hem de AC tarafta standartlara uygun topraklamalar yüklenici tarafından yapılacaktır.</i></p> <p><i>7.13. Pano içerisindeki komponentlerin (ekipmanlar) yerleşimi panonun taşınması sırasında zarar görmeyecek şekilde tasarlanacaktır.</i></p> <p>8. GENEL ESASLAR</p> <p><i>8.1. Tüm malzeme ve teçhizat, elektrik imalat ve tesisat endüstrisindeki üretim tekniklerine uygun olarak imal ve tesis edilecek ve ilgili maddelerde belirtilen standartlara uygun olacaktır. İhale sürecinde işbu teknik şartnamede belirtilen bir standardın yürürlükten kalkması veya iptal edilmesi durumunda yerine geçen standarda uygunluk da yeterli</i></p>	
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8. GENERAL GUIDELINES

- 8.1. All materials and equipment shall be manufactured and installed in accordance with the production techniques in the electrical manufacturing and installation industry and shall comply with the standards stipulated in the respective item. In case a standard listed within this Technical Specifications is abolished or cancelled, the standard replacing it will be considered suffice.
- 8.2. If identical or similar in terms of quality or characteristics of the devices offered by the bidders cannot be found, it shall substitute with the higher quality ones upon the approval of the administration and shall not request any cost for this.
- 8.3. The system components to be installed shall have a product warranty of at least 2 (two) years on part basis.
- 8.4. All devices to be used in the system shall be brand new and unused, with information such as signs, letters, numbers etc. indicating the brand, model, and date of manufacture.
- 8.5. Malfunctions in portable solar energy systems shall be fixed by the contractor as soon as possible in accordance with the beneficiary's residence conditions.
- 8.6. The contractor company has to deliver the subject matter systems to the places to be shown by Mersin Provincial Agriculture and Forestry Directorate, located at district

kabul edilecektir.

- 8.2. *İsteklilerin teklif ettikleri cihazların kalite veya hususiyet itibariyle aynısı veya benzeri bulunmadığı takdirde, daha yüksek kalitede olanları idarenin onayı ile teslim edecek ve bu bunun için herhangi bir ücret talebinde bulunamayacaktır.*
- 8.3. *Kurulacak sistem elemanları parça bazında en az 2 (iki) yıl ürün garantisine sahip olacaktır.*
- 8.4. *Sistem içerisinde kullanılacak tüm cihazlar, yeni (brand new) ve kullanılmamış (unused) olacak, üzerlerinde marka, model ve imal tarihini gösteren işaret, yazı, rakam vs. türünden bilgiler bulunacaktır.*
- 8.5. *Taşınabilir Güneş enerji sistemlerinde meydana gelecek arızalar yüklenici tarafından yararlanıcının ikamet şartlarına uygun olarak en kısa zamanda giderilecektir.*
- 8.6. *Yüklenici firma sözleşmeyi imzaladıktan sonra 90 gün içinde sözleşme konusu sistemlerin MERSİN MERKEZ, TARSUS, SİLİFKE, ERDEMLİ ve MUT İlçe merkezlerinde, Mersin İl ve Orman Müdürlüğüne gösterilen alanlarda teslimini yapacaktır. Geciken her gün için sözleşmede belirtilen gecikme cezası uygulanır.*
- 8.7. *Bütün ekipmanların montajı, kurulumu, işletimi, arıza tespiti ve bakım el kitabı Türkçe ve İngilizce olacaktır ve imza tarihinde teslim edilecektir.*
- 8.8. *Taşınabilir Güneş Enerji*

<p>centers of MERSİN MERKEZ, TARSUS, SİLİFKE, ERDEMLİ and MUT, within 90 days after signing the contract. The default penalty specified in the contract shall be applied for each day of delay.</p> <p>8.7. The assembly, installation, operation, fault detection and maintenance manual of all equipment shall be in Turkish and English and shall be delivered on the date of signing.</p> <p>8.8. Damages detected during the delivery of Portable Solar Energy panels shall be repaired by the contractor. There shall be no foreign substances (oil, dirt, metallic residue, etc.) on all parts before assembly.</p> <p>8.9. The accuracy of the power of the solar panels to be procured within the scope of the tender must be submitted and delivered to the Provincial Directorate of Agriculture and Forestry, where the FLAŞ Test (I-V CURSE Test as well as the ELECTROLYMUNANCE (EL) Test for cellular cracks and durability in solar panels).</p> <p>8.10. The Contractor shall demonstrate 1 unit of prototype solar energy set to the Control Engineer of the administration, prior to the delivery of the solar energy sets to the administration.</p> <p>9. WARRANTY CONDITIONS</p> <p>9.1. All equipment and tools used in the system (including workmanship quality) shall be flawless, new and of first</p>	<p><i>panellerinin teslimi sırasında tespit edilen zararların yüklenici tarafından onarımı yapılacaktır. Montaj öncesinde tüm parçaların üzerinde herhangi bir yabancı madde (yağ, kir, metalik kalıntı, vs.) olmayacaktır.</i></p> <p><i>8.9. İhale kapsamında temin edilecek solar panellerin güçlerinin doğruluğu FLAŞ Test (I-V CURSE Testi ayrıca solar panellerde hücresel çatlak ve sağlamlık için ELEKTROLÜMÜNANS (EL) Testinin) belgelenmesinin panellerin tesliminin yapılacağı İl Tarım ve Orman Müdürlüğüne teslim edilmesi gerekmektedir.</i></p> <p><i>8.10. Yüklenici, güneş enerji setlerini idareye teslim etmeden önce 1 adet prototip güneş enerjisi setinin demonstrasyonunu idare Kontrol Mühendisine yapacaktır. Prototip setin, işbu şartnamede belirtilen teknik kriterlere uygun olduğunun tespiti akabinde, bu prototipe göre üretilen güneş enerjisi setleri muayene ve kabul yapılmak üzere idareye teslim edilecektir</i></p> <p>9. GARANTİ KOŞULLARI</p> <p><i>9.1. Sistemde kullanılan bütün ekipman ve araçlar (işçilik kalitesi dahil) hatasız, yeni ve birinci kalitede olacaktır. Kullanılan malzemeler (herhangi bir parçası dahil) garanti periyotları içerisinde tasarım, işçilik veya malzeme kalitesinden dolayı arızalandıklarında, yüklenici</i></p>	
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<p>quality. When the materials used (including any part) fail due to design, workmanship or material quality within the warranty periods, the contractor shall be obliged to supply and install the same material. The warranty periods of the components to be used in the system, starting from the temporary acceptance date of the PV System, shall be as follows:</p> <p>9.2. Photovoltaic solar panels; 10 years physical resistance (mechanical, electrical-electronic etc.) warranty certificate</p> <p>9.3. Solar panel sub-construction; 2 years.</p> <p>9.4. Inverters; 2 years.</p> <p>9.5. Other parts / sections; 2 years.</p> <p>9.6. Defects and malfunctions, other than due to force majeure and user errors, that occur within the scope of the warranty period shall be remedied by reparation/replacement of the broken hardware, parts, or sections by the contractor free of charge. All kinds of insurance, transportation, cargo and other expenses in the repair, maintenance, replacement of the devices shall be borne by the contractor.</p> <p>9.7. Failures with the same character occurring in 10% of an identical part or element in the systems during the warranty period are considered characteristic failures. The costs related to solving these malfunctions, along with delivery to the user</p>	<p><i>aynı malzemeyi temin edip kurmakla yükümlü olacaktır. Sistemde kullanılacak komponentlerin, FV Sistem geçici kabul tarihinden itibaren, garanti periyotları aşağıdaki şekilde olacaktır:</i></p> <p>9.2. <i>Fotovoltaik güneş panelleri; 10 yıl fiziksel dayanım (mekanik, elektrik-elektronik vb.) garanti belgesi</i></p> <p>9.3. <i>Güneş paneli alt konstrüksiyonu; 2 yıl.</i></p> <p>9.4. <i>İnverterler; 2 yıl.</i></p> <p>9.5. <i>Diğer kısımlar/parçalar; 2 yıldır</i></p> <p>9.6. <i>Garanti süreleri kapsamında meydana gelen mücbir sebepler ve kullanıcı hataları dışındaki kusur ve arızalar, arızalanan donanım, donanıma ait parça veya kısmın yüklenici tarafından ücretsiz olarak değiştirilmesi/onarılması yoluyla giderilecektir. Cihazların tamir, bakım, değiştirilmesi işlemlerinde her türlü sigorta, nakliye, kargo ve diğer masrafları yükleniciye ait olacaktır.</i></p> <p>9.7. <i>Garanti müddeti içinde sistemlerde özdeş bir parça veya elemanın %10 adedinde aynı karakterde meydana gelen arızalar karakteristik arıza kabul edilir. Bu arızaların giderilmesi ile kullanıcıya teslimi ve kuruluma ilişkin bütün masrafları yükleniciye ait olup, taşınabilir güneş enerji sisteminin kurulduğu alan ve ulaşım şartları dikkate alınarak meydana gelen arızalar ve masraflar en kısa zamanda yüklenici tarafından giderilecektir.</i></p>	
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and setup costs shall be under the responsibility of the contractor, and the malfunctions and costs that occur shall be remedied by the contractor as soon as possible considering the area where the portable solar energy system is installed and the transportation conditions.

10. OTHER ISSUES

- 10.1. All materials and system design to be used in the project shall comply with the provisions of the Electricity Facilities Project Regulation and the Electricity Generation and Electricity Storage Facilities Acceptance Regulation and other relevant legislation.
- 10.2. The place of delivery of the solar systems are; places to be shown by Mersin Provincial Agriculture and Forestry Directorate, located at district centers of MERSİN MERKEZ, TARSUS, SİLİFKE, ERDEMLİ and MUT.
- 10.3. All kinds of essential and auxiliary equipments and mandatory works that are not mentioned in the technical specification and its annexes, but which are required by the technique of the work and for the functional operation of the system and for the establishment of a problem-free operation, shall be considered as matters in favour of the Administration and shall be carried out within the tender price. No fee shall be requested from the

10. DİĞER HUSUSLAR

- 10.1. Projede kullanılacak tüm malzemeler ve sistem tasarımı; Elektrik Tesisleri Proje Yönetmeliği İle Elektrik Üretim ve Elektrik Depolama Tesisleri Kabul Yönetmeliği hükümlerine uygun olacaktır.
- 10.2. Solar sistemlerin teslim yeri; MERSİN MERKEZ, TARSUS, SİLİFKE, ERDEMLİ ve MUT ilçe merkezlerinde, İl Tarım ve Orman Müdürlüğüne belirlenecek alanlardır.
- 10.3. Teknik şartname ve eklerinde değinilmeyen, ancak işin tekniği ve sistemin fonksiyonel çalışması ve sorunsuz bir işletmenin tesisi açısından sistemde bulunması gereken her türlü asli ve yardımcı tüm ekipmanlar ile yapılması zorunlu olan tüm işler İdarenin lehine olan hususlar olarak kabul edilip ihale bedeli içinde yapılacaktır. Bunlarla ilgili İdareden her hangi bir ücret talep edilmeyecektir.
- 10.4. Teknik şartnamede belirtilen iş ve grupların dışında, teknik şartname ve sözleşme eklerinde bahsi geçmeyen ancak işin bünyesi içinde yapılması zorunlu olan, her tür yardımcı malzemenin temini, Mersin iline nakliyesi genel gider ve karları teklif edilen bedelin içinde olup, söz konusu işler firmaya ait olacaktır.
- 10.5. Paket sistemin konstrüksiyon ile birlikte çalışır halde, MERSİN MERKEZ, TARSUS, SİLİFKE, ERDEMLİ ve MUT ilçe

<p>Administration regarding these.</p> <p>10.4. Except for the works and groups specified in the technical specification, the procurement, delivery to Mersin Province, overhead and profits of all kinds of auxiliary materials, which are not mentioned in the technical specifications and contract annexes, but which are required to be made within the scope of the work, are included in the price offered, and the said works shall be under the liability of the company.</p> <p>10.5. Delivery of the package system to nomad families at units to be defined and in places to be shown by Mersin Provincial Agriculture and Forestry Directorate, located at district centers of MERSİN MERKEZ, TARSUS, SİLİFKE, ERDEMLİ and MUT, making the system functional together with the construction, training the relevant user and all other system requirements as well as all works and transactions shall be under the liability of the contractor, and they shall be carried out without any additional cost. In case the solar panel system does not work after installation, the contractor will undertake the change/repair of the system. No cost will be requested for these.</p> <p>10.6. The company shall be responsible for any damage and loss that may occur during the assembly of the work; the damage to be</p>	<p><i>merkezlerinde Mersin İl Tarım ve Orman Müdürlüğü'nün belirlediği alanlarda ve sayılarda teslim edilmesi, burada göçer ailelere kullanım ve kurulum hakkında bilgi ve eğitimlerinin verilmesi ve diğer sistem gereksinimleriyle bütün iş ve işlemler yüklenici sorumluluğunda olup ek bedel alınmaksızın gerçekleştirilecektir. Kurulum sonrasında güneş paneli sisteminin çalışmaması durumunda, sistemin değiştirilmesi-tamiri yüklenici tarafından gerçekleştirilecektir. Bunlarla ilgili her hangi bir ücret talep edilmeyecektir.</i></p> <p><i>10.6. İşin teslimi sırasında oluşabilecek her türlü zarar ve ziyandan firma sorumlu olacak olup; tespit edilecek hasar firmadan tazmin edilecektir.</i></p> <p><i>10.7. Teklif veren istekliler solar paneller ile ilgili üretici firmaya ait; Kapasite Raporunu ve İmalat Belgesini sözleşme imza aşamasında sunmak zorundadır.</i></p> <p><i>10.8. Yüklenici teslim sürecinde iş güvenliği yasalarına uygunluğunu sağlayacaktır.</i></p> <p><i>10.9. Cihaz kullanırken can güvenliği sorumluluğu kullanıcının kendisine aittir.</i></p> <p><i>10.10. Taşınabilir GES sistemini oluşturan bileşenler ve bu bileşenlerin teknik özelliklerine işbu teknik şartnamede detaylı olarak yer verilmiştir. Bu özelliklerin esas alınması gerekmektedir birlikte teknik özellikler içinde yer verilmeyen tasarıma ilişkin</i></p>	
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<p>determined shall be compensated by the company.</p> <p>10.7. Bidders who submit bids must submit Capacity Report and Manufacturing Certificate related to the manufacturing company regarding solar panels, at the time of contract signature.</p> <p>10.8. The contractor will ensure compliance with occupational safety laws during the delivery process.</p> <p>10.9. While using the device, life safety responsibility belongs to the user.</p> <p>10.10. Components forming the portable solar power system, along with the technical specifications of these components have been stipulated within the technical specifications in detail. Apart from taking these specifications into consideration, the bidders should also take the prevailing designs in market/practice into consideration for issues regarding design which have not been stipulated within the technical specifications.</p>	<p><i>hususlarda ilgililerce, pazarda/uygulamada cari tasarım(lar)ın esas alınarak fiyat tekliflerinin oluşturulması gerekmektedir.</i></p>	
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LOT 2 510Wp Portable Solar Power Set

LOT 2 510Wp Portable Solar Power Set

Item to be supplied description// <i>Tedarik edilecek ürün tanımı</i>	Set Content // <i>Set içeriği</i>	Quantity // <i>Miktar</i>
SOLAR PANEL (3 x 170 Wp) Polycrystalline 510Wp	3 X 170Wp	
Full sine 12 VDC-220VAC Inverter with min. Power of 1000 watts Smart type with built-in solar charge controller	1 unit	197 Sets // <i>197 Set</i>
Deep Discharge Gel Battery 200 Ah 2x100 Ah or 1x200 Ah)	1 X 200Ah or // veya	

	2 X 100Ah	
METAL PANEL ELECTRIC CABLING	1 unit	
ALUMINIUM TABLE SYSTEM PV Assembly	1 unit	
Technical Specifications <i>Teknik Şartname</i>		Offered technical specifications by the Bidder shall be inserted in English. <i>Firma tarafından teklif edilen teknik özellikler İngilizce olarak verilmelidir.</i>
<p>1. SOLAR PANEL (PV MODULE)</p> <p>1.1. PV modules shall have an instantaneous power output tolerance within the range of [0, + 5Wp]. All PV modules must have 'higher than the nominal value' of the flash test power output report in the manufacturing factory. Negative power tolerance shall not be accepted.</p> <p>1.2. The PV panel type to be used shall have a polycrystalline structure. The power of the PV Solar Panel (Solar Module) must be 170 Wp x 3 units in total 510 Wp. PV modules must be of identical / same brand PV module manufacturers. All Solar PV modules shall be at the same brand, type and power.</p> <p>1.3. The connectors of the PV modules must be from the original MC4 family. The connectors to be used in the DC system shall be of the same brand and model and must be identical. The connectors of the PV modules shall comply with IP67 water resistance standard.</p> <p>1.4. PV Module efficiency Standard Test Conditions (Standard Test Conditions: shall be at least 18% under 1000W/m² radiation, 25 °C module temperature and</p>	<p>1. SOLAR PANEL (FV MODÜL)</p> <p>1.1. FV modüller, [0, + 5Wp] anlık çıkış gücü toleransı içinde olmalıdır. Tüm FV modülleri, imalat fabrikasında flaş testinin güç çıkış raporunun 'nominal değerinden yüksek' olacaktır. Negatif güç toleransı kabul edilmeyecektir.</p> <p>1.2. Kullanılacak FV Panel tipi polikristal yapıda olacaktır. FV güneş paneli (Solar Modül) gücü en az 170 Wp x 3 adet toplam 510 Wp olmalıdır. FV modüller özdeş / aynı marka FV modül üreticilerinden olmalıdır. Tüm Solar FV modülleri aynı marka, aynı tip ve güçte olacaktır.</p> <p>1.3. FV modüllerinin konnektörleri orijinal MC4 familyasından olmalıdır. DC sistemde kullanılacak konnektörler aynı marka, model ve özdeş olmalıdır. FV modüllerin konnektörleri IP67 suya dayanıklılık standardını sağlamalıdır.</p> <p>1.4. FV modül verimi Standart Test Koşulları (Standart Test Koşulları: 1000W/m² ışınım, 25 °C modül sıcaklığı ve AM=1,5 spektrum) altında en az %18 olacaktır, verimliliği %18'in altında olan FV paneller kabul edilmeyecektir.</p> <p>1.5. Gölgelemenin neden olduğu</p>	

<p>AM=1.5 spectrum), and PV panels with an efficiency of less than 18% shall not be accepted.</p> <p>1.5. Against power drops caused by shadowing, at least 2 of the PV Modules shall have by-pass protections. PV modules shall be protected so that no flow is present when energy is not produced.</p> <p>1.6. The front windows of the PV modules shall be resistant to external stresses. (For example, the glass shall not break easily in case of throwing rocks or against impacts such as ice and hail).</p> <p>1.7. PV modules and fasteners shall have wind resistance with a capacity to withstand at least 130 km/hour wind.</p> <p>1.8. PV Modules shall be able to withstand a wind load of min. 2400 Pa and a snow load of min. 5400 Pa.</p> <p>1.9. The junction box of the PV module must have at least IP 67 protection class and should not have a loosening lid problem at hot or cold weathers.</p> <p>1.10. The (+) and (-) poles of the PV Module direct current output cables and convectors shall be easily distinguishable.</p> <p>1.11. The direct current output cables of the PV Module shall be 2 cables (one red and one black) with a length of at least 10 meters for each pole, in compliance with TS EN50525-2-11 standard or foreign/international equivalent standard, with a minimum cross-section of 6 mm².</p>	<p><i>güç düşüşlerine karşı, FV modüller az 2 adet by-pass diyotlu olacaktır. Enerjinin üretilmediği durumda FV modüllere akım geçişi olmayacak şekilde koruma yapılacaktır.</i></p> <p><i>1.6. FV modüllerinin ön camları harici olarak uygulanacak zorlamalara karşı dayanıklı olacaktır. (Örneğin taş atılması durumunda veya buz, dolu gibi parça darbelerine karşı cam kolaylıkla kırılmayacak yapıda olacaktır).</i></p> <p><i>1.7. FV Modüller ve bağlantı elemanları en az 130 km/saat hızındaki rüzgara dayanabilecek kapasitede rüzgar direncine sahip olacaktır.</i></p> <p><i>1.8. FV Modüller min. 2400 Pa rüzgar yüküne ve min 5400 Pa kar yüküne dayanabilecek yapıda olacaktır.</i></p> <p><i>1.9. FV Modül bağlantı kutusu (Junction Box) en az IP 67 koruma sınıfında olmalı ve sıcak veya soğuk havalarda kapak düşme sorunu olmamalıdır.</i></p> <p><i>1.10. FV Modül doğru akım çıkış kabloları ve konvektörlerinin (+) ve (-) kutupları ayırt edilebilir yapıda olacaktır.</i></p> <p><i>1.11. FV Modül doğru akım çıkış kabloları her bir kutup için en az 10 metre uzunlukta, TS EN50525-2-11 standardına ya da yabancı/uluslararası dengi standarda uygun olmalıdır, minimum 6 mm² kesitinde 2 adet (1 adet kırmızı renkli ve bir adet siyah renkli) kablo olacaktır.</i></p> <p><i>1.12. Güneş panellerinde</i></p>	
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<p>1.12. Frames mounted with bolts on solar panels shall not be accepted. Panel frames must be pressed and at the same time punched.</p> <p>1.13. The frame of the PV Modules shall be made of corrosion-resistant material and stainless steel (anodized Aluminium).</p> <p>1.14. PV Modules: shall operate smoothly between - 40 °C and +85 °C operating temperature and it shall work smoothly in 0-90% relative humidity.</p> <p>1.15. The warranty documents given by the manufacturer for the Modules offered. When necessary, values under normal operating conditions may also be requested.</p> <p>1.16. The production date of the PV modules to be used in the solar energy system shall be 2021 or later.</p> <p>1.17. The lifespan of the PV Array must have a minimum of 10 years of mechanical and 25 years of performance warranty. Linear energy guarantee shall be such that it shall provide at least 90% of the panel power at the end of 10 years and at least 80% at the end of 25 years. Linear guarantee for panels must be presented in the offer.</p> <p>1.18. On each PV module, there shall be at least 2 serial number barcodes (one in the window of the module) and 1 label. The PV module label shall comprise, including but not limited to, the following:</p> <p>1.18.1. 1.18.1. Vmpp, Voc 1.18.1. 1.18.1. Imp, Isc, Pmpp, NOCT</p>	<p><i>civatalı olarak montajlanmış çerçeveler kabul edilmeyecektir. Panel çerçeveleri preslenmiş, aynı zamanda punch işlemi de görmüş olmalıdır.</i></p> <p>1.13. <i>FV Modüllerinin çerçevesi korozyona dayanıklı malzemeden imal edilmiş ve paslanmaz yapıda (anodize Alüminyum) olacaktır.</i></p> <p>1.14. <i>FV modüller: -40 °C ile + 85 °C sıcaklık aralığında ve %0 -90 bağıl nem aralığında sorunsuz çalışacaktır.</i></p> <p>1.15. <i>Teklif edilen modüller için üreticinin vereceği garanti belgeleri. Gerektiğinde Normal çalışma koşullarındaki değerlerde istenebilecektir.</i></p> <p>1.16. <i>Güneş enerji sisteminde kullanılacak FV modüllerin üretim tarihi 2021 veya sonrasında olacaktır.</i></p> <p>1.17. <i>FV modüllerinin ömrü minimum 10 yıl mekanik ve 20 yıl performans garantisine sahip olmalıdır. Lineer enerji garantisi, panel gücünün 10 yıl sonunda en az %90'ını ve 20 yıl sonunda en az %80'ini sağlayacak şekilde olacaktır. Panellerin lineer garantisi teklifte sunulmalıdır.</i></p> <p>1.18. <i>FV modüllerin her birinde en az 2 adet (Biri modülün camının içinde olacak) seri numarası barkodu ve 1 adet etiket bulunmalıdır. FV modül etiketi bunlarla sınırlı olmamak üzere en az aşağıdakileri içerecektir:</i></p> <p>1.18.1. <i>Vmpp, Voc Imp, Isc, Pmpp, NOCT değerleri</i></p> <p>1.18.2. <i>Maks çalışma gerilimi değeri</i></p> <p>1.18.3. <i>Uzunluk, ağırlık verileri</i></p> <p>1.18.4. <i>Güç toleransı</i></p>	
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<p>values</p> <p>1.18.2. Max operating voltage value</p> <p>1.18.3. Length, weight data</p> <p>1.18.4. Power tolerance</p> <p>1.18.5. Quality class</p> <p>1.18.6. Test conditions (STC) (Radiation temperature humidity)</p> <p>1.18.7. Brand, model, serial number information</p> <p>1.18.8. Must include CE sign</p> <p>1.18.9. Country of Production</p> <p>1.18.10. Manufacturer company name</p> <p>1.19. During the construction of the panels, the logos of the Ministry of Agriculture and Forestry, IFAD, <u>UNDP and URDP</u> Project shall be prepared to be clearly visible after applying an in-glass lamination process inside the panels.</p> <p>1.20. The serial number of each panel shall be readable in the window and the test report shall be arranged according to the serial number.</p> <p>1.21. At the time of delivery, the contractor company must provide the laboratory test results of the panels.</p> <p>1.22. The name and surname of the farmer and project number shall be tagged on the Panel Frames by a fixed and permanent method.</p> <p>2. INVERTER (Inverter, FULL SINUS)</p> <p>2.1. It shall have a nominal power of 1000W, input voltage shall be: 12 Volt DC voltage, output voltage shall be 220/230 Volt</p>	<p>1.18.5. Kalite sınıfı</p> <p>1.18.6. Test koşulları (STC) (Işınım sıcaklık nem)</p> <p>1.18.7. Marka, model, seri numarası bilgileri</p> <p>1.18.8. CE işareti olmalıdır</p> <p>1.18.9. Üretilen ülke</p> <p>1.18.10. Üretici firma ismi</p> <p>1.19. Panellerin imalatı sırasında, Tarım ve Orman Bakanlığı, IFAD, <u>UNDP ve KDAK Projesi</u> logoları panellerin içine cam içi laminasyon işlemi uygulanarak net olarak görülecek şekilde hazırlanacaktır.</p> <p>1.20. Her bir panelin mutlaka seri numarası cam içinde okunur şekilde olacak ve test raporu seri numarasına göre düzenlenecektir.</p> <p>1.21. Teslim sırasında yüklenici firma panellere ait laboratuvar test sonuçlarını vermek zorundadır.</p> <p>1.22. Panel Çerçevesine sabit ve kalıcı etiket yöntemiyle, çiftçinin adı, soyadı proje numarası yazılacaktır.</p> <p>2. EVİRİCİ (Evirici, TAM SİNÜS)</p> <p>2.1. Nominal 1000W gücünde, giriş gerilimi:12 Volt DC gerilimi, çıkış gerilimi:220/230 Volt AC 50 Hertz olacaktır.</p> <p>2.2. Evirici, aşırı yük, yüksek sıcaklık, düşük akü voltajı korumalarına sahip olacaktır.</p> <p>2.3. Evirici çalışma sıcaklığı aralığı 0,+40 °C olacak ve maksimum %90 bağıl nemde çalışabilecektir.</p> <p>2.4. Evirici, verimi minimum %90</p>	
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<p>AC 50 Hertz.</p> <p>2.2. The inverter shall have overload, high temperature, low battery voltage protections.</p> <p>2.3. The inverter shall have an operating temperature range of 0 to +40 °C and shall be able to operate at a maximum relative humidity of 90%.</p> <p>2.4. The inverter shall have a minimum efficiency of 90%.</p> <p>2.5. Inverters shall be able to operate with gel battery.</p> <p>2.6. In case of overload, overvoltage and short circuit, it shall protect the system and restart the inverter.</p> <p>2.7. It must be able to give an audible warning in case of overload and heating.</p> <p>2.8. The inverter's voltage input must be in the range of at least 10.5 VDC - maximum 16 VDC.</p> <p>2.9. It must have Low voltage alarm (9.5 V+,-) to protect the battery. It must have protection fuses.</p> <p>2.10. FS inverter must have a CE sign.</p> <p>2.11. The inverter must be guaranteed for at least 2 years.</p> <p>2.12. It shall have a built-in 50 amp PWM solar charge control unit.</p> <p>3. GEL BATTERY</p> <p>3.1. Batteries shall be long-lasting, suitable for solar energy system, maintenance-free, and since the system will operate in a closed cabinet, the accumulators shall be in gel form.</p>	<p><i>olacaktır.</i></p> <p>2.5. <i>Eviriciler, jel aküyle çalışabilecek yapıda olacaktır.</i></p> <p>2.6. <i>Aşırı yük, gerilim ve kısa devre durumunda sistemi korumaya alarak eviriciyi yeniden başlayacaktır.</i></p> <p>2.7. <i>Aşırı yük ve ısınma durumunda sesli ikaz verebilmelidir.</i></p> <p>2.8. <i>Evirici voltaj girişi en az 10.5 VDC - en çok 16 VDC aralığında olmalıdır.</i></p> <p>2.9. <i>Aküyü korumak için Düşük voltaj alarmına (9.5 V+,-) haiz olmalıdır. Koruma sigortalarına sahip olmalıdır.</i></p> <p>2.10. <i>TS evirici CE işareti taşımaktadır.</i></p> <p>2.11. <i>Evirici en az 2 yıl garantili olmalıdır.</i></p> <p>2.12. <i>Dahili 50 amper PWM solar şarj kontrol ünitesine haiz olacaktır.</i></p> <p>3. JEL AKÜ</p> <p>3.1. <i>Aküler uzun ömürlü güneş enerjisi sistemine uygun, bakım gerektirmeyen ve sistem kapalı bir kabin içerisinde çalışacağına akümülatörler jel yapıda olacaktır.</i></p> <p>3.2. <i>Güvenilir sabit çıkış akımı olacaktır. Kullanılacak olan aküler derin deşarjla dayanıklı ve kapalı yapıda olacaktır.</i></p> <p>3.3. <i>İstikrarlı performansla sahip olacaktır.</i></p> <p>3.4. <i>Aküler döngü sayısı %50 DOD Seviyesinde >1000 olmalıdır. %100 bakım gerektirmeyecektir. Üretici tarafından 2 yıl garanti verilmelidir.</i></p> <p>3.5. <i>Aküler; 0 ve +50 °C ortam</i></p>	
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<p>3.2. It shall have a reliable constant output current. Batteries to be used shall be resistant to deep discharge and shall have an enclosed structure.</p> <p>3.3. It shall have stable performance.</p> <p>3.4. The number of battery cycles must be > 1000 at the 50% DOD level. It shall be 100% maintenance-free. A 2-year warranty must be given by the manufacturer.</p> <p>3.5. Batteries shall work smoothly at 0 - 90% relative humidity at an ambient temperature range of 0 to + 50° C, when it is installed at an elevation of 0-2000 m.</p> <p>3.6. The operating voltage shall be at least 12 VDC.</p> <p>3.7. The battery shall be at least 100 Ah.</p> <p>3.8. There shall not be more than 120 days of difference between the date of manufacture of the batteries and the date of delivery to the administration. The name of the manufacturer company, date of manufacture, nominal voltage, "+" and "-" signs and voltage shall be indelibly written on the accumulator.</p> <p>4. SOLAR CABLE</p> <p>4.1. The PV energy cables on the PV module shall be resistant to high temperature and heat, UV-resistant, double insulated, halogen-free, lead-free, and shall be produced in accordance with TS EN 60228 standard or foreign/international</p>	<p><i>sıcaklığında, 0-2000 m yükseklikte kurulu bulunduğu hallerde, %0-90 Bağıl nem oranında sorunsuz çalışacaktır.</i></p> <p>3.6. <i>Çalışma gerilimi en az 12 VDC olacaktır.</i></p> <p>3.7. <i>Akü en az 100 Ah olacaktır.</i></p> <p>3.8. <i>Akülerin imalat tarihi ile idareye teslim tarihi arasında 120 günden fazla olmayacaktır. Akümülatör üzerine imalatçı firma adı, imalat tarihi Nominal gerilimi "+" ve "-" işaretleri, gerilimi silinmeyecek şekilde olacaktır.</i></p> <p>4. SOLAR KABLO</p> <p>4.1. <i>FV modül üzerindeki FV enerji kabloları yüksek sıcaklık ve ısıya dayanıklı, UV dirençli, çift izoleli, halojensiz, kurşunsuz, TS EN 60228 standardına veya yabancı/uluslararası dengi standarda uygun olarak üretilmiş olacaktır.</i></p> <p>4.2. <i>Solar kablolar 90 °C çalışma sıcaklığında sorunsuz kullanılacaktır.</i></p> <p>4.3. <i>FV- solar kablo ve solar kablo - şarj regülatörü -inverter bağlantılarında MC4 tipi erkek ve dişi tip konnektörler kullanılacaktır. Konnektörler, özel bağlantı elemanları ve soketler -40 °C ile +90 °C arası işletme sıcaklığına uygun, yüksek akıma uygun, onaylı olacaktır.</i></p> <p>5. FV ALT KONSTRÜKSİYON</p> <p>5.1. <i>Güneş enerji panelleri, taşımaya uygun bir şekilde tasarlanmış olacaktır.</i></p>	
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<p>equivalent standard.</p> <p>4.2. Solar cables shall be used at an operating temperature of 90°C without any problem.</p> <p>4.3. In the PV - solar cable and solar cable-charge regulator-inverter connections, MC4 type male and female type connectors shall be used. Connectors, special fasteners and sockets shall be suitable for an operating temperature range of -40°C to + 90°C, suitable for high current and approved type.</p> <p>5. PV SUB-CONSTRUCTION</p> <p>5.1. Solar energy panels shall be designed in a portable manner.</p> <p>5.2. The construction to be used in the system shall be in an easily mountable form. It should be in a manner so that it can be demounted and mounted when needed. The panels shall be mounted by connecting to aluminium rails with connection apparatus (clamps). The rails shall be designed in a way that they will be connected to triangle legs. The triangle legs shall be made from stainless material</p> <p>6. BOARD -ELECTRIC INSTALLATION</p> <p>6.1. Boards must be suitable for carrying, with handles and covers.</p> <p>6.2. There must be air intake channels to prevent overheating.</p> <p>6.3. On the surface of the board, there must be 220 AC output,</p>	<p>5.2. <i>Sistemde kullanılacak konstrüksiyon kolay montaj yapılacak yapıda olacaktır. Gerekliğinde sökülüp takılabilecek şekilde montaja uygun olacaktır. Paneller Alüminyum raylara bağlantı aparatları ile tutturulup (Tutucu-clamp) montaj edilecektir. Raylar üçgen ayaklara monte edilecek şekilde tasarlanacaktır. Üçgen ayaklar paslanmaz malzemeden olacaktır.</i></p> <p>6. PANO -ELEKTRİK TESİSATI</p> <p>6.1. <i>Panolar taşımaya uygun, kulplu, kapaklı olmalıdır.</i></p> <p>6.2. <i>Aşırı ısınmayı önlemek için hava giriş kanalları olmalıdır.</i></p> <p>6.3. <i>Pano yüzeyinde olacak şekilde topraklı 220 AC çıkışı çocuk korumalı, gerekli ikaz etiketli ve sigorta korumalı en az 1 adet Priz olmalıdır.</i></p> <p>6.4. <i>Panoların üzerinde; üretim tarihi model ve seri numaraları içeren metal etiket olmalıdır ve bu etiketler panonun görülebilecek yerinde olmalıdır. Pano ve diğer ana komponentler (ekipmanlar) üzerinde bulunması gereken tüm ikaz, ölüm tehlike levhası, kullanma talimatı ve uyarı talimatı plakaları uygun şekilde takılacaktır.</i></p> <p>6.5. <i>Kapağında şarj regülatörünün ekranını görebilecek şekilde olacaktır.</i></p> <p>6.6. <i>Bütün anahtar ve ekranlar dış kapak üzerinde olacak şekilde tasarlanacaktır.</i></p> <p>6.7. <i>Taşıma sırasında bileşenler zarar görmesin diye tüm</i></p>	
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<p>and at least 1 piece of Socket with child protection, necessary warning label and fuse protection.</p> <p>6.4. The boards shall bear metal tags containing the date of manufacture, model and serial numbers, and these tags must be visible on the board. All warning, death danger signs, operating instructions and warning instructions plates that must be present on the board and other main components (equipment) shall be properly attached.</p> <p>6.5. It shall allow the charge regulator screen to be seen on the cover.</p> <p>6.6. It shall be designed so that all switches and screens are on the outer cover.</p> <p>6.7. All components (Battery-Inverter-Charge Regulator) shall be fixed so that the components are not damaged during transportation.</p> <p>6.8. The board must be manufactured of at least 0.8 mm DKP sheet metal.</p> <p>6.9. Boards shall be painted in appropriate colours as defined by the Administration.</p> <p>6.10. In order to transfer energy between the board and panel, solar PV type cable must be placed according to the construction approved by the administration.</p> <p>6.11. For visibility, the phrase "Kırsal Dezavantajlı Alanlar Kalkınma Projesi Adana-2022" with corporate logos on the boards must be written by paint, plate, or sticker. The plates used must</p>	<p><i>bileşenler (Akü-Evirici-Şarj Regülatörü) sabitlenmiş olacaktır.</i></p> <p>6.8. <i>Pano en az 0,8 mm DKP sac ile imal edilmelidir.</i></p> <p>6.9. <i>Panolar İdare tarafından uygun görülen renklere boyanmış şekilde teslim edilecektir.</i></p> <p>6.10. <i>Panel ile pano arasında enerji aktarımını sağlamak için idarenin onay verdiği konstrüksiyona göre solar FV tipi kablo kullanılmalıdır.</i></p> <p>6.11. <i>Görünürlük için panoların üzerine "Kırsal Dezavantajlı Alanlar Kalkınma Projesi Adana-2022" ibaresi boya, plaka ya da çıkartma ile yazılmalıdır. Kullanılan plakalar kolay okunabilir boyutta hazırlanmalı ve düşmeyecek şekilde monte edilmelidir. Boya veya çıkartma kullanılacaksa kolay okunabilir boyutlarda hazırlanmalı silinmeyecek solmayacak malzemeler kullanılarak uzun ömürlü olması sağlanmalıdır.</i></p> <p>6.12. <i>Pano içerisindeki komponentlerin (ekipmanların) yerleşimi panonun taşınması sırasında zarar görmeyecek şekilde tasarlanacaktır.</i></p> <p>6.13. <i>Kurulacak güneş enerji sistemine ait tüm elektrikli ve elektronik cihazlarla, bunların içine konulacağı kabinler, tüm taşıyıcı metal aksamlar, konstrüksiyon ile metal aksamlar, tüm yardımcı metal montaj malzemeleri topraklanacaktır. Hem DC tarafta hem de AC tarafta standartlara uygun topraklamalar yüklenici</i></p>	
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be prepared in an easily readable size and mounted in such a way that they cannot fall. If paint or stickers are to be used, they must be prepared in easily readable sizes, and they must be long-lasting by using materials that shall not fade.

6.12. The placement of the components (equipment) in the board shall be designed in such a way that the board shall not be damaged during the transportation.

6.13. All electrical and electronic devices belonging to the solar energy system to be installed and the cabinets which will contain them, all carrier construction, metal parts and auxiliary metal mounting materials shall be grounded. Grounding in accordance with the standards shall be made on both DC side and AC side by the contractor.

7. GENERAL GUIDELINES

7.1. All materials and equipment shall be manufactured and installed in accordance with the production techniques in the electrical manufacturing and installation industry and shall comply with the standards stipulated in the respective item. In case a standard listed within this Technical Specifications is abolished or cancelled, the standard replacing it will be considered suffice.

7.2. If identical or similar in terms of quality or characteristics of the devices offered by the

tarafından yapılacaktır.

7. GENEL ESASLAR

7.1. Tüm malzeme ve teçhizat, elektrik imalat ve tesisat endüstrisindeki üretim tekniklerine uygun olarak imal ve tesis edilecek ve ilgili maddelerde belirtilen standartlara uygun olacaktır. İhale sürecinde işbu teknik şartnamede belirtilen bir standardın yürürlükten kalkması veya iptal edilmesi durumunda yerine geçen standarda uygunluk da yeterli kabul edilecektir.

7.2. İsteklilerin teklif ettikleri cihazların kalite veya hususiyet itibariyle aynısı veya benzeri bulunmadığı takdirde, daha yüksek kalitede olanları idarenin onayı ile teslim edecek ve bu bunun için herhangi bir ücret talebinde bulunamayacaktır.

7.3. Kurulacak sistem elemanları parça bazında en az 2 (iki) yıl ürün garantisine sahip olacaktır.

7.4. Sistem içerisinde kullanılacak tüm cihazlar, yeni (brand new) ve kullanılmamış (unused) olacak, üzerlerinde marka, model ve imal tarihini gösteren işaret, yazı, rakam vs. türünden bilgiler bulunacaktır.

7.5. Taşınabilir Güneş enerji sistemlerinde meydana gelecek arızalar yüklenici tarafından yararlanıcının ikamet şartlarına uygun olarak en kısa zamanda giderilecektir.

7.6. Yüklenici firma sözleşmeyi

<p>bidders cannot be found, it shall substitute with the higher quality ones upon the approval of the administration and shall not request any cost for this.</p> <p>7.3. The system components to be installed shall have a product warranty of at least 2 (two) years on part basis.</p> <p>7.4. All devices to be used in the system shall be brand new and unused, with information such as signs, letters, numbers etc. indicating the brand, model, and date of manufacture.</p> <p>7.5. Malfunctions in portable solar energy systems shall be fixed by the contractor as soon as possible in accordance with the beneficiary's residence conditions.</p> <p>7.6. The contractor company has to deliver the subject matter systems at Adana Provincial Agriculture and Forestry Directorate, within 90 days after signing the contract. The default penalty specified in the contract shall be applied for each day of delay.</p> <p>7.7. The assembly, installation, operation, fault detection and maintenance manual of all equipment shall be in Turkish and English and shall be delivered on the date of signing.</p> <p>7.8. Damages detected during the delivery of Portable Solar Energy panels shall be repaired by the contractor. There shall be no foreign substances (oil, dirt, metallic residue, etc.) on all parts before assembly.</p> <p>7.9. The accuracy of the power of</p>	<p><i>imzalandıktan sonra 90 gün içinde işleri Adana İl Tarım ve Orman Müdürlüğünde teslim edecektir. Geciken her gün için sözleşmede belirtilen gecikme cezası uygulanır.</i></p> <p><i>7.7. Bütün ekipmanların montajı, kurulumu, işletimi, arıza tespiti ve bakım el kitabı Türkçe ve İngilizce olacaktır ve imza tarihinde teslim edilecektir.</i></p> <p><i>7.8. Taşınabilir Güneş Enerji panellerinin teslimi sırasında tespit edilen zararların yüklenici tarafından onarımı yapılacaktır. Montaj öncesinde tüm parçaların üzerinde herhangi bir yabancı madde (yağ, kir, metalik kalıntı, vs.) olmayacaktır.</i></p> <p><i>7.9. İhale kapsamında temin edilecek solar panellerin güçlerinin doğruluğu FLAŞ Test (I-V CURSE Testi ayrıca solar panellerde hücresel çatlak ve sağlamlık için ELEKTROLÜMÜNANS (EL) Testinin) belgelenmesinin panellerin tesliminin yapılacağı İl Tarım ve Orman Müdürlüğüne teslim edilmesi gerekmektedir.</i></p> <p><i>7.10. Yüklenici, güneş enerji setlerini idareye teslim etmeden önce 1 adet prototip güneş enerjisi setinin demonstrasyonunu idare Kontrol Mühendisine yapacaktır. Prototip setin, işbu şartnamede belirtilen teknik kriterlere uygun olduğunun tespiti akabinde, bu prototipe göre üretilen güneş enerjisi setleri muayene ve kabul yapılmak üzere idareye teslim edilecektir</i></p>	
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the solar panels to be procured within the scope of the tender must be submitted and delivered to the Provincial Directorate of Agriculture and Forestry, where the FLAŞ Test (I-V CURSE Test as well as the ELECTROLYMUNANCE (EL) Test for cellular cracks and durability in solar panels).

7.10. The Contractor shall demonstrate 1 unit of prototype solar energy set to the Control Engineer of the administration, prior to the delivery of the solar energy sets to the administration.

8. WARRANTY CONDITIONS

8.1. All equipment and tools used in the system (including workmanship quality) shall be flawless, new and of first quality. When the materials used (including any part) fail due to design, workmanship or material quality within the warranty periods, the contractor shall be obliged to supply and install the same material. The warranty periods of the components to be used in the system, starting from the temporary acceptance date of the PV System, shall be as follows:

8.2. Photovoltaic solar panels; 10 years physical resistance (mechanical, electrical-electronic etc.) warranty certificate or letter of undertaking

8.3. Solar panel sub-construction; 2 years.

8. GARANTİ KOŞULLARI

8.1. Sistemde kullanılan bütün ekipman ve araçlar (işçilik kalitesi dahil) hatasız, yeni ve birinci kalitede olacaktır. Kullanılan malzemeler (herhangi bir parçası dahil) garanti periyotları içerisinde tasarım, işçilik veya malzeme kalitesinden dolayı arızalandıklarında, yüklenici aynı malzemeyi temin edip kurmakla yükümlü olacaktır. Sistemde kullanılacak komponentlerin, FV Sistem geçici kabul tarihinden itibaren, garanti periyotları aşağıdaki şekilde olacaktır:

8.2. Fotovoltaik güneş panelleri; 10 yıl fiziksel dayanım (mekanik, elektrik-elektronik vb.) garanti belgesi veya taahhütnamesi

8.3. Güneş paneli alt konstrüksiyonu; 2 yıl.

8.4. İnverterler; 2 yıl

8.5. Diğer kısımlar/parçalar; 2 yıldır

8.6. Garanti süreleri kapsamında meydana gelen mücbir sebepler ve kullanıcı hataları dışındaki kusur ve arızalar, arızalanan donanım, donanıma ait parça veya kısmın yüklenici tarafından ücretsiz olarak değiştirilmesi/onarılması yoluyla giderilecektir. Cihazların tamir, bakım, değiştirilmesi işlemlerinde her türlü sigorta, nakliye, kargo ve diğer masrafları yükleniciye ait olacaktır.

8.7. Garanti müddeti içinde sistemlerde özdeş bir parça veya elemanın %10 adedinde aynı karakterde meydana

<p>8.4. Invertors; 2 years</p> <p>8.5. Other sections / parts; 2 years</p> <p>8.6. Defects and malfunctions, other than due to force majeure and user errors, that occur within the scope of the warranty period shall be remedied by reparation/replacement of the broken hardware, parts, or sections by the contractor free of charge. All kinds of insurance, transportation, cargo and other expenses in the repair, maintenance, replacement of the devices shall be borne by the contractor.</p> <p>8.7. Failures with the same character occurring in 10% of an identical part or element in the systems during the warranty period are considered characteristic failures. The costs related to solving these malfunctions, along with delivery to the user and setup costs shall be under the responsibility of the contractor, and the malfunctions and costs that occur shall be remedied by the contractor as soon as possible considering the area where the portable solar energy system is installed and the transportation conditions.</p> <p>9. OTHER ISSUES</p> <p>9.1. All materials and system design to be used in the project; shall comply with the provisions of the Electricity Facilities Project Regulation and the Electricity Generation and Electricity Storage</p>	<p><i>gelen arızalar karakteristik arıza kabul edilir. Bu arızaların giderilmesi ile kullanıcıya teslimi ve kuruluma ilişkin bütün masrafları yükleniciye ait olup, taşınabilir güneş enerji sisteminin kurulduğu alan ve ulaşım şartları dikkate alınarak meydana gelen arızalar ve masraflar en kısa zamanda yüklenici tarafından giderilecektir</i></p> <p>9. DİĞER HUSUSLAR</p> <p>9.1. <i>Projede kullanılacak tüm malzemeler ve sistem tasarımı; Elektrik Tesisleri Proje Yönetmeliği ile Elektrik Üretim ve Elektrik Depolama Tesisleri Kabul Yönetmeliği hükümlerine uygun olacaktır.</i></p> <p>9.2. <i>Solar sistemlerin teslim yeri Adana İl Tarım ve Orman Müdürlüğü'dür.</i></p> <p>9.3. <i>Teknik şartname ve eklerinde değinilmeyen, ancak işin tekniği ve sistemin fonksiyonel çalışması ve sorunsuz bir işletmenin tesisi açısından sistemde bulunması gereken her türlü asli ve yardımcı tüm ekipmanlar ile yapılması zorunlu olan tüm işler İdarenin lehine olan hususlar olarak kabul edilip ihale bedeli içinde İdareden herhangi bir ücret talep edilmeyecektir.</i></p> <p>9.4. <i>Teknik şartnamede belirtilen iş ve grupların dışında, teknik şartname ve sözleşme eklerinde bahsi geçmeyen ancak işin bünyesi içinde yapılması zorunlu olan, her tür yardımcı malzemenin, temini, Adana iline nakliyesi genel gider ve karları teklif edilen</i></p>	
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<p>Facilities Acceptance Regulation.</p> <p>9.2. The place of delivery of solar systems is Adana Provincial Directorate of Agriculture and Forestry.</p> <p>9.3. All kinds of essential and auxiliary equipment and mandatory works that are not mentioned in the technical specification and its annexes, but which are required by the technique of the work and for the functional operation of the system and for the establishment of a problem-free operation, shall be considered as matters in favour of the Administration and shall be carried out within the tender price. No fee shall be requested from the Administration regarding these.</p> <p>9.4. Except for the works and groups specified in the technical specification, the procurement, delivery to Adana Province, overhead and profits of all kinds of auxiliary materials, which are not mentioned in the technical specifications and contract annexes, but which are required to be made within the scope of the work, are included in the price offered, and the said works shall be under the liability of the company.</p> <p>9.5. Delivery of the package system to nomad families at Adana Provincial Agriculture and Forestry Directorate, making the system functional together with the construction, training the relevant user and all other</p>	<p><i>bedelin içinde olup, söz konusu işler firmaya ait olacaktır.</i></p> <p><i>9.5. Paket sistemin konstrüksiyon ile birlikte çalışır halde, Adana İl Tarım ve Orman Müdürlüğünde konar göçer ailelere teslim edilmesi, burada göçer ailelere kullanım ve kurulum hakkında bilgi ve eğitimlerinin verilmesi ve diğer sistem gereksinimleriyle bütün iş ve işlemler yüklenici sorumluluğunda olup ek bedel alınmaksızın gerçekleştirilecektir. Kurulum sonrasında güneş paneli sisteminin çalışmaması durumunda, sistemin değiştirilmesi-tamiri yüklenici tarafından gerçekleştirilecektir. Bunlarla ilgili her hangi bir ücret talep edilmeyecektir.</i></p> <p><i>9.6. İşin Adana İl Tarım ve Orman Müdürlüğünde teslimi sırasında oluşabilecek her türlü zarar ve ziyandan firma sorumlu olacak olup; tespit edilecek hasar firmadan tazmin edilecektir.</i></p> <p><i>9.7. Teklif veren isteklilerin solar panellere ile ilgili üretici firmaya ait; Kapasite Raporunu ve İmalat Belgesini sözleşme imza aşamasında sunması gerekmektedir.</i></p> <p><i>9.8. Yüklenici teslim sürecinde iş güvenliği yasalarına uygunluğunu sağlayacaktır.</i></p> <p><i>9.9. Cihaz kullanırken can güvenliği sorumluluğu kullanıcının kendisine aittir.</i></p> <p><i>9.10. Taşınabilir GES sistemini oluşturan bileşenler ve bu bileşenlerin teknik özelliklerine işbu teknik şartnamede detaylı olarak yer</i></p>	
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<p>system requirements as well as all works and transactions shall be under the liability of the contractor, and they shall be carried out without any additional cost. In case the solar panel system does not work after installation, the contractor will undertake the change/repair of the system. No cost will be requested for these.</p> <p>9.6. The company shall be responsible for any damage and loss that may occur during the delivery of the work at Adana Provincial Directorate of Agriculture and Forestry; the damage to be determined shall be compensated by the company.</p> <p>9.7. Bidders who submit bids must submit Capacity Report and Manufacturing Certificate related to the manufacturing company regarding solar panels, at the time of contract signature.</p> <p>9.8. The contractor shall ensure compliance with occupational safety laws during the delivery process.</p> <p>9.9. While using the device, life safety responsibility belongs to the user.</p> <p>9.10. Components forming the portable solar power system, along with the technical specifications of these components have been stipulated within the technical specifications in detail. Apart from taking these specifications into consideration, the bidders should also take the prevailing designs in market/practice</p>	<p><i>verilmiştir. Bu özelliklerin esas alınması gerekmekte birlikte teknik özellikler içinde yer verilmeyen tasarıma ilişkin hususlarda ilgililerce, pazarda/uygulamada cari tasarım(lar)ın esas alınarak fiyat tekliflerinin oluşturulması gerekmektedir.</i></p>	
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into consideration for issues regarding design which have not been stipulated within the technical specifications.		
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Product catalogue/brochure of the proposed brand/model showing detailed technical specifications of the goods should be submitted.

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>	
Delivery of Each Item within 90 days following the signature of the contract			
All items shall have at least 2 years manufacturer warranty. Photovoltaic solar panels shall have at least 10 years physical resistance (mechanical, electrical-electronic) warranty			

FORM F: Price Schedule Form

Name of Bidder:	[Insert Name of Bidder]	Date:	Select date
ITB reference:	UNDP-TUR-ITB(UR)-2022-70		

The Bidder is required to prepare the Price Schedule following the below format by inserting the proposed make and model of each product along with the unit price and total price of the Set.

The price shall not include value added tax (VAT) since UN and its subsidiary organs are exempt from all taxes except the special consumption tax.

Currency of the Bid: Turkish Liras (TRY)

Price Schedule for LOT 1: 340Wp Portable Solar Power Set

Description of Goods	Set Content	Quantity	Unit Price per Item (TRY)	Total Price of Items (TRY)
LOT 1				
Min. 340 Wp (Single or 2x170 Wp) Polycrystalline Solar Module	1 X 340Wp or 2 X 170Wp	630 sets		
MS 1200 W Modified Sine Inverter	1 unit			
20A 12/24 V Charge Regulator (with MPPT feature and LCD screen)	1 unit			
200Ah Gel Battery (2x100 Ah or 1x200 Ah)	1 X 200Ah or 2 X 100Ah			
PV substructure / Panel-Electric Cabling (including consumables such as battery cable, protection fuse, cable duct, battery terminals or lugs)	1 unit			
Total Final and All-Inclusive Price Quotation (TRY) for LOT 1				

*All-inclusive Financial Bid shall be exclusive of VAT and shall include all related costs for fulfilment of the requirements stipulated in the ITB. Contractor shall not be entitled to receive any amount beyond All-inclusive Financial Proposal proposed above.

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

Currency of the Bid: Turkish Liras (TRY)

Price Schedule for LOT 2: 510Wp Portable Solar Power Set

Description of Goods	Set Content	Quantity	Unit Price per Item (TRY)	Total Price of Items (TRY)
LOT 2				
SOLAR PANEL (3 x 170 Wp) Polycrystalline 510Wp	3 X 170Wp	197 sets		
Full sine 12 VDC-220VAC Inverter with min. Power of 1000 watts Smart type with built-in solar charge controller	1 unit			
Deep Discharge Gel Battery 200 Ah (2x100 Ah or 1x200 Ah)	1 X 200Ah or 2 X 100Ah			
METAL PANEL ELECTRIC CABLING	1 unit			
ALUMINIUM TABLE SYSTEM PV ASSEMBLY	1 unit			
Total Final and All-Inclusive Price Quotation (TRY) for LOT 2				

*All-inclusive Financial Bid shall be exclusive of VAT and shall include all related costs for fulfilment of the requirements stipulated in the ITB. Contractor shall not be entitled to receive any amount beyond All-inclusive Financial Proposal proposed above.

Name of Bidder: _____

Authorised signature: _____

Name of authorised signatory: _____

Functional Title: _____

FORM G: Form of Bid Security

**Bid Security must be issued using the official letterhead of the Issuing Bank.
Except for indicated fields, no changes may be made on this template.**

To: UNDP
[Insert contact information as provided in Data Sheet]

WHEREAS [Name and address of Bidder] (hereinafter called "the Bidder") has submitted a Bid to UNDP dated [Click here to enter a date](#) to execute goods and/or services [Insert Title of Goods and/or Services] (hereinafter called "the Bid"):

AND WHEREAS it has been stipulated by you that the Bidder shall furnish you with a Bank Guarantee by a recognized bank for the sum specified therein as security if the Bidder:

- a) Fails to sign the Contract after UNDP has awarded it;
- b) Withdraws its Bid after the date of the opening of the Bids;
- c) Fails to comply with UNDP's variation of requirement, as per ITB instructions; or
- d) Fails to furnish Performance Security, insurances, or other documents that UNDP may require as a condition to rendering the contract effective.

AND WHEREAS we have agreed to give the Bidder such Bank Guarantee:

NOW THEREFORE we hereby affirm that we are the Guarantor and responsible to you, on behalf of the Bidder, up to a total of *[amount of guarantee] [in words and numbers]*, such sum being payable in the types and proportions of currencies in which the Price Bid is payable, and we undertake to pay you, upon your first written demand and without cavil or argument, any sum or sums within the limits of *[amount of guarantee as aforesaid]* without your needing to prove or to show grounds or reasons for your demand for the sum specified therein.

This guarantee shall be valid up to 30 days after the final date of validity of bids.

SIGNATURE AND SEAL OF THE GUARANTOR BANK

Signature: _____

Name: _____

Title: _____

Date: _____

Name of Bank _____

Address _____

*[Stamp with official stamp of the Bank]
[insert: address and email address]*