



**INVITATION TO TENDER – 67 KW ON GRID
RSCN HUSSEIN BIN ABDULLAH II INDUSTRIAL
CITY - AL-KARAK
RSCN/024/2023**

خاص ب (توريد وتركيب وتشغيل نظام على الطاقة الشمسية)

رقم العطاء (ج م / 2023/024)

تعلم الجمعية الملكية لحماية الطبيعة عن رغبتها بطرح عطاء توريد تركيب وتشغيل نظام طاقة شمسية بقدرة (67 KW) مربوط على الشبكة في مركز تابع للجمعية داخل مدينة الحسين الصناعية - محافظة الكرك - فعلى الشركات المصنفة في مجال الكهروميكانيك والطاقة المتجددة بموجب شهادة تصنيف سارية المفعول صادرة عن دائرة العطاءات الحكومية أو الشركات المتخصصة بتنفيذ أنظمة الطاقة المتجددة وترشيد الطاقة وتحسين كفاءتها بموجب شهادة تسجيل من وزارة الصناعة والتجارة سارية المفعول أو صورة مصدقة عنها على الراغبين بالاشتراك في هذا العطاء مراجعة الجمعية /إدارة المشتريات لشراء نسخة العطاء.

علماً أن آخر موعد لشراء وثائق العطاء الساعة الواحدة ظهراً من يوم الخميس الموافق 2023/10/26.

تسليم عروض الأسعار بالظرف المختوم في مبنى الجمعية الكائن في ضاحية الرشيد، شارع بكر البو بناية رقم (4) في

موعد اقصاه الساعة الحادية عشرة من يوم الخميس الموافق 2023/11/02.

- ستكون موعد الزيارة يوم السبت الموافق 2023/10/28 من الساعة 10 صباحاً وحتى الساعة 12 ظهراً وتعتبر مسؤولية الشركة زيارة الموقع للتعرف على طبيعة الأعمال وكل من يستكف عن الزيارة يتحمل كافة المسؤولية المترتبة لعدم زيارة الموقع.

- يرفق بالعرض كفالة بنكية مصدقة لصالح الجمعية ككفالة دخول بنسبة 3% من المبلغ الإجمالي.

- ثمن نسخة العطاء: (50) خمسون دينار غير مستردة.

- يتم استلام وثائق العطاء من قبل مندوب الشركة بموجب تفويض رسمي صادر عنها.

- للجمعية الحق بإلغاء العطاء دون أن يترتب عليها أي مطالبة مالية أو قانونية دون بيان الأسباب.

- الجمعية غير ملزمة بالإحالة على أقل الأسعار.

- لمزيد من الاستفسار يرجى الاتصال على هاتف رقم: 06/5157656 - إدارة المشتريات.

- للاطلاع على العطاء وشراء نسخة العطاء متابعة الموقع الإلكتروني

<https://www.rscn.org.jo/tender>

ملاحظة: أجور الإعلان على من يرسو عليه العطاء مهما تكرر.

ثانياً: الشروط العامة.

- 1- تلتزم الشركة بزيارة الموقع لتحديد جميع الاحتياجات اللازمة والاطلاع على موقع العمل قبل تقديم عرض السعر وكل من يتخلف عن الزيارة يتحمل كافة المسؤولية.
- 2- تتعهد الشركة بعدم رمي الاتربة والصخور او اي مخلفات في الشوارع المجاورة او على جوانب الطرق ويلتزم برميها في الاماكن المخصصة لذلك وعلى نفقته الخاصة، كذلك يجب عليه العمل في الاوقات المخصصة للعمل مع احترامه الكامل لخصوصية المكان الذي يعمل فيه من حيث الازعاج والضوضاء.
- 3- الجمعية غير مسؤولة عن اي اخطاء قد ترتكبها الشركة في وضع اسعاره وتعتبر هذه الاسعار نهائية وملزمة بمجرد فتح العرض.
- 4- الجمعية غير ملزمة بالإحالة على اقل الأسعار وكذلك للجمعية الحق برفض العروض وإلغاء العطاء دون بيان الأسباب الموجبة لذلك ودون أن يترتب عليها أية التزامات نحو أي شركة مالية او قانونية.
- 5- على الشركة الذي يرسو عليها العطاء ضرورة ارفاق براءة ذمة مالية سارية المفعول صادرة عن دائرة ضريبة الدخل والمبيعات إذا دعت الحاجة.



ثالثاً: الشروط الخاصة:

1. تقدم العروض على نسختين (أصل وصوره و CD).
2. يعتبر صدور قرار الإحالة المبدئي وإشعار الشركة به ملزماً له.
3. للجمعية الحق في زيادة أو تخفيض الكميات بنسبة 25% دون إبداء الأسباب وبنفس الشروط والأسعار.
4. تقدم الأسعار بالدينار الأردني شاملة لجميع الرسوم والضرائب.
5. يكون العرض صالحاً لمدة 90 يوماً من تاريخ فتح العطاء.
6. تقوم الشركة المحال عليها العطاء وقبل توقيع الاتفاقية بتقديم كفالة حسن تنفيذ / بنسبة 10 % من القيمة الإجمالية للإحالة صادر من أحد البنوك الأردنية العاملة ودفع قيمه الطوابع المترتبة عليها ان وجدت.
7. تلتزم الشركة بتقديم كفاله صيانة بنكية غير مشروطة بنسبة 5% من قيمة الإحالة بعد انتهاء العمل تحجز لمدة عام كامل أو حسب الكفالة المصنعية المقدمة من الشركة.
8. مدة العمل (30) ثلاثون يوماً تقويمياً من تاريخ صدور الإحالة وتشمل التوريد والتركيب ويتم التشغيل بعد صدور الموافقة من شركة الكهرباء.
9. تكون رسوم بدل ربط لنظام الطاقة الشمسية لشركة الكهرباء بعد الموافقة على الشركة المحال عليها العطاء.
10. تلتزم الشركة التي احيل عليها العطاء بالتوقيع على الاتفاقية خلال ثلاثة ايام عمل من تاريخ الاحالة.
11. تتحمل الشركة غرامة تأخير عن كل يوم (150) دينار وذلك بدل عطل وضرر بحيث يحسم مجموع هذه المبالغ ان وجدت من الحساب النهائي للشركة ويسقط حقها بالطعن في الطلب بتخفيض الغرامة المفروضة.
12. يحق للجمعية الاشراف الكامل على مراحل العمل ويحق لها التوجيه للشركة بأي مرحلة من مراحل العمل ويحق لها ايضا برفض اي عمل حتى ولو كان منفذ غير مطابق للمواصفات.

13. على الشركة توفير الفنيين والمهندسين من اصحاب الاختصاص ويحق للجمعية رفض اي مهندس أو فني

غير مؤهل لتنفيذ الأعمال.

14. يوقع العرض من قبل الشركة ويتم ختم جميع صفحات العرض ووثائق دعوه العطاء وحسب التفاصيل

التالية:

اسم الشركة

الموكل بالتوقيع وتوقيعه:

التاريخ:

رابعاً: المواصفات الفنية:



1. GENERAL CONDITIONS FOR TENDER

1.1 Definitions

i In addition to the terms detailed in the Invitation to Tender attached, the conditions of tendering are defined as follows:

Bidder- a person or organization who bids for the Tender

Supplier/Contractor- the party which provides goods/services to RSCN

1.2 Corrupt Practices

i 2.2.1 RSCN requires Employees, Bidders and Contractors, to observe the highest standards of ethics during procurement and the execution of contracts. In pursuit of this, RSCN defines, for the purposes of this provision, the terms set forth below as follows:

- (i) "corrupt practice" includes the offering, giving, receiving, or soliciting of anything of value to influence the action of a public official in the procurement process or in contract execution; and
- (ii) "fraudulent practice" includes a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of the RSCN, and includes collusive practices among Bidders prior to or after bid submission designed to establish bid prices at artificial, non-competitive levels and to deprive the RSCN of the benefits of free and open competition;

In any case where fraud or corruption is identified, RSCN will :

- reject any bids where the Bidder has engaged in corrupt or fraudulent practices in competing for the Contract; and
- terminate the contract

2.2.2 Any communications between a Bidder and the RSCN related to matters of alleged fraud or corruption must be made in writing and addressed to the Director.

1.3 Eligible Bidders

i 3.3.1 A Bidder shall meet the following criteria to be eligible to participate in RSCN tenders:

(a) the bidder, at the time of bid, is not:

- (i) insolvent;
- (ii) in receivership;
- (iii) bankrupt; or
- (iv) being wound up

(b) the bidder's business activities have not been suspended;

3.3.2 A Bidder, and all parties constituting the Bidder including sub-contractors, shall not have a conflict of interest. All Bidders found to have a conflict of interest shall be disqualified. A Bidder may be considered to have a conflict of interest with one or more parties in this bidding process, if they:

(a) 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, or influence the decisions of the RSCN regarding this bidding process;

3.3.3 A Bidder whose circumstances in relation to eligibility change during a procurement process or during the execution of a contract shall immediately inform the RSCN.

1.4 Safety and Protection of Beneficiaries

i RSCN is committed to ensuring the safety and protection of our beneficiaries. All Contractors engaged by RSCN are therefore expected to ensure that their workers act in a professional and ethical manner. RSCN reserves the right to request Contractors to provide Police Certificates/non-convictions letters for all workers hired under any potential contract. RSCN will also require all workers to sign applicable Codes of Conduct or other documents outlining acceptable behaviors and procedures for reporting protection concerns.

1.5 One Bid per Bidder per work

- i** Each Bidder shall submit only one Bid per tender. A Bidder who submits or participates in more than one bid per tender will cause all the bids with the Bidder's participation to be rejected.

1.6 Cost of Bidding

- i** The Bidder shall bear all costs associated with the preparation and submission of their Bid, and the RSCN shall not be responsible or liable for those costs, regardless of the conduct or outcome of the bidding process.

1.7 Site Visit

- i** The Bidder, at the Bidder's own responsibility and risk, is encouraged to visit and examine the Site of Works and its surroundings and obtain all information that may be necessary for preparing the bid and entering into a contract. To arrange a site visit please refer to the details in the Invitation to Tender. The cost of visiting the Sites shall be at the Bidder's own expense.

1.8 Obtaining and completing Bidding Documents

- i**
 1. Bidders who did not obtain the Bidding Document directly from the RSCN will be rejected during evaluation. Where a Bidding Document is obtained from the RSCN on a Bidder's behalf, the Bidder's name must be registered with the RSCN at the time of issue.
 2. The Bidder is expected to examine all instructions, forms, terms, and specifications in the Bidding Document. Failure to furnish all information or documentation required by the Bidding Document may result in the rejection of the bid.

1.9 Clarification of Bidding Document

- i** A prospective Bidder requiring any clarification of the Bidding Document shall contact the RSCN in writing to awwad04@icloud.com . RSCN will respond in writing to any request for clarification received before **15.00 (local time) on the October 31 2023**. RSCN shall forward copies of its response to all Bidders who have acquired the Invitation to Tender, including a description of the inquiry but without identifying its source.

1.10 Amendment of Invitation to Tender

- i** 2.10.1 At any time prior to the deadline for submission of bids, RSCN may amend or cancel the Invitation to Tender by informing the bidders in writing.
- 2.10.2 To give prospective Bidders reasonable time in which to take an amendment or cancellation into account in preparing their bids, the RSCN can, at his discretion, extend the deadline for the submission of bids.

1.11 Language of Bid

- i** 2.11.1 The bid, as well as all correspondence and documents relating to the bid shall be written in English.
- 2.11.2 Supporting documents and printed literature that form part of the bid can be submitted in another language aside from English.

1.12 Documents Comprising the Bid

- i** 2.12.1 The bid submitted by the Bidder shall comprise of the following:
1. Invitation for Tender document (signed and stamped)
 2. List of similar projects.
 3. appendix 1,3,4
 4. appendix 2 Technical Specifications (filled, stamped and signed)
 5. Financial Proposal with BOQ (filled, stamped and signed)
 6. Time Frame.
 7. Copies of Drawings/schematics for Proposed Layout

8. Copy of Company Organogram
9. CV of Project Manager
10. Copy of the company's registration certificate.
11. Copy of company registration certificate شهادة تسجيل الشركة حديثة
12. Copy of business license رخصة مهنة سارية المفعول
13. Copy of Tax Registration شهادة تسجيل ضريبي وبراءة ذمة
14. Certificate issued from companies control department or from the Ministry of Industry and Trade that lists the authorized signatories of the company شهادة لمن يهمل الامر توضح المفوضين بالتوقيع
15. شهادة التصنيف سارية المفعول
16. Bid entry guarantee 3% كفالة دخول العطاء بقيمة 3% من قيمة العطاء

2.12.2 All forms must be completed and all supporting documents submitted to the extent possible. All blank spaces must be filled in with the information requested.

1.13 Bid Prices

i 2.13.1 The Bidder shall give a lump sum bid.

2.13.2 The Bidder must complete unit prices both with tax.

1.14 Currencies of Bid and Payment

i 2.14.1 All prices shall be quoted by the Bidder in Jordanian Dinar. Similarly, all payments will be made in Jordanian Dinar.

2.14.2 Payment terms to be discussed on awarding the contract.

1.15 Bid Validity

i 2.15.1 Bids shall remain valid for a period of 90 calendar days after the date of the bid submission deadline as prescribed by RSCN. A bid valid for a shorter period may be rejected as non-compliant.

2.15.2 In exceptional circumstances, prior to the expiration of the bid validity period, RSCN may request Bidders in writing to extend the period of validity of their bids. A Bidder must confirm in writing his acceptance of the extension. In case of extension, modification of the bid is not permitted.

1.16 Alternative Bids

- i** Bidders should submit offers that comply with the requirements of the bidding documents, including the technical designs as indicated in drawings and specifications. If the Bidder is unable to meet the stated specifications they should try to provide a close alternative, providing full details on the Bill of Quantity.

1.17 Format and Signing of Bid

- i** The Bidder shall prepare one set of bid documents per tender. The bidder should hold a copy of the documents submitted for reference purposes.

1.18 Submission of Proposals

i 1.18.1 Marking and returning of proposal

Sealed Proposals must be securely closed in a suitable envelope, Clearly marked on the outside with the reference number and dispatched to arrive at the RSCN Procurement Office indicated no later than the closing time and date. Proposals received in any other manner will be invalidated.

The Proposal shall be sealed in 1 outer and 1 inner envelope.

a- The outer envelope should be clearly marked as illustrated bellow :

ITT – On Grid for RSCN -AL-KARAK
RSCN/024/2023

For the attention of:

The Procurement Committee

RSCN

Jubaiha – Akef Al-Fayiz St. 48, Amman

Amman – Jordan

Please note that the outer envelope must not bear the name, or any markings, which may identify the building company or organization. Failure to comply will result in the bid being made void.

2.18.2 References

The bidder is requested to provide the name of at least three customers to which it provides the same type of services. RSCN reserves the right to contact these references, without notifying the bidder.

1.19 Deadline for Submission of Bids

- i** *Bids must be received by the RSCN at the address given and no later than the date and time indicated in the Invitation to Tender.*

1.20 Late Bids

- i** *RSCN shall not consider any bid that arrives after the deadline for submission as stipulated in the Invitation to Tender. Any bid received by RSCN after the deadline for submission of bids shall be declared late and rejected.*

1.21 Withdrawal and Replacement of Bids

- i** *2.21.1 A Bidder may withdraw or replace its bid after it has been submitted at any time before the deadline for submission of bids by sending a written notice, signed by an authorized representative. Any corresponding replacement of the bid must accompany the respective written notice. All notices must be:*

(a) submitted as with Clauses 18 and 19, and in addition, the envelopes must be clearly marked "REPLACEMENT" and

(b) received by RSCN prior to the deadline for submission of bids, in accordance with the Invitation to Tender

2.21.2 After the opening of bids, modifications to bids must be documented and any discussions minutes.

1.22 Confidentiality

- i** 1.22.1 Information relating to the examination, evaluation, comparison of bids, and recommendation of contract award, shall not be disclosed to bidders or any other persons not officially concerned with such process until the Contract has been awarded.
- 1.22.2 Any effort by a Bidder to influence the RSCN in the examination, evaluation, comparison of the bids or contract award decisions may result in the rejection of its bid.
- 1.22.3 From the time of bid opening to the time of Contract award, if any Bidder wishes to contact the RSCN on any matter related to the bidding process, it should do so in writing to email.

1.23 Clarification of Bids

- i** RSCN may, at its discretion, ask any Bidder for a clarification of its Bid. RSCN request for clarification and the response shall be in writing. Any clarification submitted by a Bidder that is not in response to a request by the RSCN shall not be considered. No change in the price or substance of the bid shall be permitted, except to confirm the correction of errors.

1.24 Validity of Bids

- i** 1.24.1 The RSCN determination of a Bid's validity is to be based on the contents of the bid itself, which cannot be corrected if determined to be invalid
- 2.24.2 A valid bid is one that complies with all the terms, conditions, and specifications of the Invitation to Tender without deviation or omission, which affects, or could affect;
- (a) the scope, quality, or delivery of the goods/services specified in the Contract; or
- (b) Limits in any substantial way, RSCN rights or the Bidder's obligations under the Contract.

1.25 Evaluation of Bids



2.25.1 *The RSCN shall examine all documentation and other information submitted by Bidders to verify eligibility, and then will review and score bids according to the defined criteria for this tender;*

2.25.2 *RSCN reserves the right to reject all bids, and re-tender if no satisfactory bids are submitted*

1.26 Award Procedure



2.26.1 *RSCN may, unless the Bidder expressly stipulates to the contrary in the tender, accept whatever part of a tender that RSCN so wishes.*

2.26.2 *The RSCN shall award the Contract in writing, with an Award Letter, to the Bidder(s) whose offer(s) has been determined to be the best, before the end of the bid validity period*

1.27 Notification of Award and Award Letter



2.27.1 *Until a formal contract is prepared and executed, the Award Letter shall constitute a binding Contract.*

2.27.2 *The Award Letter will state the sum that the RSCN will pay the supplier in consideration of the provision of the contracted works as prescribed in the Contract, and in accordance with the Bid.*

2.27.3 *The Bidder is thereafter required to submit a Letter of Acceptance, confirming their wish to proceed with a contract.*

2.27.4 *In the event of a contract award, suppliers will be required to provide an irrevocable **bank guarantee for contracted works of up to 10% of the total contract value** from a reputable bank in Jordan to cover the defects liability period. The Suppliers will be responsible for any associated fees in obtaining this guarantee.*

1.28 Signing of Contract



2.28.1 Upon receipt of the Letter of Acceptance, RSCN shall call the successful Bidder(s) to sign the Contract(s).

2.28.2 Within an agreed timeframe, the successful Bidder(s) shall sign, date, and return the Contract(s) to the RSCN.

Printed Name

Job title

Signed and official stamp

Contact Tel no.

Contact Email

Company

Date

Appendix 1

SITE INFORMATION

This appendix provides information on the site for installation of On-Grid Solar PV systems.

The information contained in this appendix is provided for reference and guidance only and the bidder should undertake site visits to confirm the information provided here and make their own assessments of the site conditions and characteristics in order to prepare their bids to install the PV system of the proposed capacity provided for site in this appendix. Please refer to the Invitation to Tender for details of the proposed visit dates.

Site Name	Royal Academy for Nature Conservation
GPS Coordinates	31.208959, 35.835806
Location	Al-karak
Estimated Area	Above Hanger no. 1,2,3,4,5
Wind Speed	150 km/h
System Type	On Grid System
Target	Install System 67 KWp

Appendix 2

TECHNICAL SPECIFICATION OF EQUIPMENT

The following Tables should be completed by all bidders. All the responses should be provided in the "Response" column and any remarks, clarifications and explanations should be provided in the "Remarks and Explanations" column.

1.1 Solar PV Module

i The bidder will propose PV panels based on either mono or poly crystalline solar cells and choose a suitable angle of inclination and orientation angles for the PV panels at site in order to generate maximum energy possible. The orientation angles and inclination for the PV modules should be stated in the bid.

All modules should be free from any defects including cracks or stains on any of its elements or a lack of alignment in the cell. Defective modules will be rejected. The solar cells used should be preferably **Grade A**.

Table 3.1

No.	Item	Response	Remarks and Explanations
1	The type of PV technology: silicon mono-crystalline or poly-crystalline or other?		
2	model number of modules including source of Equipment (own production, third party manufacturer - if sourced from third party, state the name of the manufacturer)		

3	Presence of Serial Number for Each Module (yes/no)		
4	Efficiency of Module (e.g. 20%)? Efficiency of overall system?		
5	Module Output Power (KWp) at Standard Test Conditions (please also specify the test conditions and test standard used).		
6	Provide details of any Quality Management System used to ensure quality of production and testing procedure, e.g. Certificate of Registration under BS EN ISO 9001: 2000/2008. Please provide relevant evidence.		
7	First year degradation		
8	Annual output power degradation after first year (e.g. 0.8 % per year). Against which standards has this been assessed?		
9	Guarantee for Module Power output for 25 years (e.g. linear, stepped - please provide the values)		
10	Power Tolerance Level (e.g. 0/+3%)		
11	Operating temperature range (e.g. between -10°C & + 85°C)		

12	Electrical connection Terminal Block Insulation rating (e.g. IP65)		
13	Material of Module Frame (e.g. Galvanized Steel or Anodized Aluminum)		
14	Glass Laminated Modules (yes/no)		
15	Module Glass Type (e.g. high transmittance tempered glass or similar)		
16	Warranty for Modules (number of years against manufacturing defects)		
17	Proposals on the test and commissioning documentation to be supplied on completion of installation?		

Note : Please attached all datasheet and certificates for module .

1.2 Mounting Structure



*The PV mounting structures and systems should be manufactured from **aluminum** and should be able to withstand the load of the PV panels including the snow, dust, wind and other loads likely to be experienced by the mounting structures.*

Table 3.2

No.	Item	Response	Remarks and Explanations
1	Material of Construction (e.g. aluminum).		
2	Material for all screws, washers and nuts (e.g. Stainless steel)		
3	What is the maximum wind speed they can withstand (e.g. 150 km/h)		
4	Number of years of Manufacturer's warranty (e.g. 5 years)		
5	Risk Assessment Provide details of the contents of the risk assessment that will be completed before any works are undertaken		
6	Outline approach to determining structural integrity of roof?		
7	Fixing to roof, describe method to be employed and rationale referring to structural integrity of roof to support proposed array size		
8	Attach a Structure Shape (yes/no)		
9	Inclination angle		
10	Orientation		

Note : Please attached all 2D or 3D Drawing for Structure.

1.3 On Grid Inverter

Table 3.3

No.	Item	Response	Remarks and Explanations
1	How many inverter are you proposing (e.g. 1 or 2, if more than two mention the capacities for each inverter)		
2	Inverter efficiency at max power (e.g. 97%)		
3	Inverter has an LCD display to provide information about the system performance (yes / no)		
4	Number of years of Manufacturer's warranty (e.g. 5 years)		
5	Inverter protections, list all (e.g. reverse current, input over voltage & over current via fuses)		
6	Operating Temperature Range (e.g -20 °C to 60 °C)		
7	Protection Rating (e.g. IP65)		
8	Make and model of inverter Source of Equipment (own production, third party manufacturer - if sourced from third party, state the name of the manufacturer)		
9	Voltage and Current		
10	Monitoring System (Yes or No)		

Note : Please attached all datasheet and certificates for inverters .

1.4 AC & DC Cables

Table 3.4

No.	Item	Response	Remarks and Explanations
1	DC cables should comply with TUV and UL 4703 standards		
2	Operation temperature for DC cables (e.g. -25 °C to +90 °C)		
3	Quality of DC cables (e.g. UV resistant, flame retardant, low smoke - list all that is applicable).		
4	Source of Equipment (own production, third party manufacturer - if sourced from third party, state the name of the manufacturer)		
5	Warranty Period (e.g. 5 years)		

Note : Please attached all datasheet and certificates for Cables .

Appendix 3

- 1- عرض السعر المطلوب شامل كافة الرسوم القانونية .
- 2- يجب أن لا يقل قدرة اللوح المستخدم عن 540 واط .
- 3- وضع العاكس الكهربائي في مكان آمن .
- 4- ضمان عدم تلف او ثقب ظهر الهنجر عند تركيب الهيكل الحامل للألواح الشمسية وان يكون الهيكل الحامل من الالمنيوم.
- 5- جميع الكوابل والقواطع الكهربائية ذات منشأ أوروبي.
- 6- أن يكون العاكس الكهربائي ذو منشأ أوروبي .
- 7- أن يكون مصنع الألواح الكهروضوئية ضمن أول 10 شركات في العالم .
- 8- ارفاق مخطط زمني لتنفيذ المشروع .
- 9- ارفاق كافة الحسابات المقترحة للنظام من أحد البرامج المعتمدة عالمياً .
- 10- فيما يلي صورة توضح المناطق المراد تركيب الألواح عليها :



- 11- الاخذ بعين الاعتبار مسافات أمان على اطراف الهنجر.
- 12- تفصيل سلم مع ظهر أمان وأن يكون بدايته بعد متر ونصف للصعود فوق الهناجر لغايات التنظيف والصيانة مع وضع باب مع قفل.

Appendix 4

Checklist

No.	Item	Checked	Score**
1	Simulation System by PVsys software: <ul style="list-style-type: none">- Tilt angle- Azimuth- Performance Ratio- Losses- Shading- Production power		
2	Drawing <ul style="list-style-type: none">- Schematic Diagram- Concrete base- Steel structure- SLD		
3	Time plan		
4	References (Name, Size, Location, Contact)		
5	The first-year degradation for PV panels		
6	Datasheets <ul style="list-style-type: none">- PV panel- Inverter- DC cables- AC cables- Monitoring system- Structure- Connectors- Circuit Breaker		
7	The Financial Proposal contains: <ul style="list-style-type: none">- Items- Quantity- Unit price- Total price- Special discount (If any)		

**For evaluation purposes.