



REFERENCE NUMBER: **MRCs/2021/001**

SUPPLIES TENDER

TENDER FOR THE SUPPLY, DELIVERY, INSTALLATION, REMOVAL OF DEBRIS, TESTING AND COMMISSIONING OF PV SYSTEMS FOR THE PREMISES OF THE MALTA RED CROSS SOCIETY FOR THE PROJECT:

“MALTA RED CROSS SOLAR PANELS” - ERDF.PA4.0108

Date Published: **24th May, 2021**

Deadline for Submission: **11th June, 2021**

**at 12:00hrs
CET/CEST**

Tender Opening: **11th June, 2021**

**At 12:30hrs
CET/CEST**

Cost of the Tender Document: N/A



Operational Programme I – European Structural and Investment Funds 2014-2020
“Fostering a competitive and sustainable economy to meet our challenges”
 Project part-financed by the European Regional Development Fund
 Co-financing rate: 80% European Union Funds; 20% National Funds



IMPORTANT

- Bid bond of €2,000 is required as per Clause 11 of the Instructions to Tenderers
- Clarifications shall be uploaded and will be available to view from www.redcross.org.mt

Malta Red Cross Society

104. St. Ursula Street, Valletta, VLT1234, MALTA. Email: admin.ops@redcross.org.mt. Tel: [+356] 99388112

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## VOLUME 1 SECTION 1 - INSTRUCTIONS TO TENDERERS

### A. GENERAL PART

#### 1. General Instructions

- 1.1 In submitting a tender, the tenderer accepts in full and in its entirety, the content of this tender document, including subsequent Clarifications issued by the Malta Red Cross Society whatever its own corresponding conditions may be, which through the submission of the tender is waived. Tenderers are expected to examine carefully and comply with all instructions, forms, contract provisions and specifications contained in this tender document. These Instructions to Tenderers complement the General Rules Governing Tenders for NGOs Version 1.0.

**No account can be taken of any reservation in the tender in respect of the procurement documents; any disagreement, contradiction, alteration or deviation shall lead to the tender offer not being considered any further.**

**Prospective tenderers must submit their offer by depositing it in the tender box, located at *Malta Red Cross Base of Operations, Gioacchino Le Brun Street, Pembroke, PBK 1710, MALTA*. Alternatively, submissions may be sent by registered mail, receipt of which will be acknowledged. Prospective tenders take full responsibility to submit their offer by the set tender submission deadline.**

**Note:**

**Where in this tender document a standard is quoted, it is to be understood that the Contracting Authority will accept equivalent standards. However, it will be the responsibility of the respective bidders to prove that the standards quoted are equivalent to the standards requested by the Contracting Authority.**

- 1.2 The subject of this tender is the supply, delivery, installation, removal of debris, testing and commissioning of the following goods:
- Photovoltaic system
- 1.3 The place of acceptance of the supplies shall be at the Malta Red Cross Base of Operations, Gioacchino Le Brun Street, Pembroke, PBK 1710 Malta. The time-limits for the execution of the contract shall be 15<sup>th</sup> November, 2021, and the INCOTERM<sup>2010</sup> applicable shall be **Delivery Duty Paid (DDP)**.
- 1.4 This is a unit-price contract.
- 1.5 This call for tenders is being issued under an open procedure.
- 1.6 The beneficiary of this tender is the Malta Red Cross Society.
- 1.7 The tenderer will bear all costs associated with the preparation and submission of the tender. The Contracting Authority will in no case be responsible or liable for such costs, whatever the conduct or outcome of the procedure.
- 1.8 The Contracting Authority retains ownership of all tenders received under this tender procedure. Consequently, tenderers have no right to have their tenders returned to them.

## 2. Timetable

2.

|                                                                                                                                                                        | DATE                                                 | TIME                                                               |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------|--------------------------------------------------------------------|
| Clarification Meeting/Site Visit (Refer to Clause 6.1)                                                                                                                 | By appointment<br>Up till 4 <sup>th</sup> June, 2021 | 12:00hrs                                                           |
| Deadline for request for any additional information from the Malta Red Cross<br><br>Clarification requests should be addressed to:<br><i>admin.ops@redcross.org.mt</i> | 14 <sup>th</sup> June, 2021                          | 12:00hrs                                                           |
| Last date on which additional information can be issued by Malta Red Cross                                                                                             | 21 <sup>st</sup> June, 2021                          | 12:00hrs                                                           |
| Deadline for submission of tenders/Tender opening session<br>(unless otherwise modified in terms of Clause 10.1 of the General Rules Governing Tendering for NGOs)     | 28 <sup>th</sup> June, 2021                          | Deadline for submissions: 12:00hrs<br>Opening of Tenders: 12:30hrs |
| * All times Central European Time (CET) / Central European Summer Time0(CEST) as applicable                                                                            |                                                      |                                                                    |

## 3. Lots

3.1 This tender is not divided into lots, and tenders must be for the whole of quantities indicated. Tenders will not be accepted for incomplete quantities.

## 4. Variant Solutions

4.1

No variant solutions will be accepted. Tenderers must submit a tender in accordance with the requirements of the tender document.

## 5. Financing

5.1

The project is *co-financed* by the European Union/Government of Malta, in accordance with the rules of the Operational Programme I - European Structural and Investment Funds 2014-2020 European Regional Development Fund (ERDF) programme.

5.2

The beneficiary of the financing is the Malta Red Cross Society.

## 6. Clarification Meeting/Site Visit/Workshop

- 6.1 Site visits will be held by appointment only up till noon of the 4<sup>th</sup> June, 2021. Appointments may be made by email to admin.ops@redcross.org.mt.

## 7. Eligibility

- 7.1 Participation in tendering is open on equal terms to all natural and legal persons of the Member States of the European Union, the beneficiary country and any other country in accordance with Regulation 76 of the Public Procurement Regulations.
- 7.2 Natural persons, companies or undertakings who fall under any of the conditions set out in Regulation 50 of the Public Procurement Regulations, 2010 (Legal Notice 296 of 2010) may be excluded from participation in and the award of contracts. Tenderers or candidates who have been guilty of making false declarations will also incur financial penalties representing 10% of the total value of the contract being awarded.
- 7.3 Tenders submitted by companies forming a joint venture/consortium must also fulfil the following requirements:
- One partner must be appointed lead partner and that appointment is to be confirmed by the submission of the Powers of Attorney and signed by legally empowered signatories representing all the individual partners [This shall take the form of the 'Power of Attorney' as per Form 1, Volume 1, Section 7]. The tender must include a preliminary agreement or letter of intent stating that all partners assume joint and several liability assurances for the execution of contract, that the lead partner is authorised to bind and receive instructions for and on behalf of, all partners, individually and collectively.
  - All partners in the joint venture/consortium are bound to remain in the joint venture/consortium until the conclusion of the contracting procedure. The joint venture/consortium winning this contract must include the same partners for the whole performance period of the contract other than as may be permitted or required by law.
- 7.4 All material, equipment and services to be supplied under the contract must originate in an eligible country. For this purpose, "origin" means the place where the materials and/or equipment are mined, grown, produced or manufactured and/or from which services are provided.

## 8. Selection Criteria

- 8.1 In order to be considered as eligible for the award of the contract, tenderers must provide evidence that they meet or exceed certain minimum qualification criteria described hereunder.

**In the case of a joint venture/consortium, this must satisfy the minimum qualifications required below:**

- 8.1.2 Information about the tenderer's technical capacity.

**(An economic operator may, where appropriate and for a particular contract, rely on the capacities of other entities, regardless of the legal nature of the links which it has with them. It must in that case prove to the contracting authority that it will Page 6**

**have at its disposal the resources necessary for the execution of the contract, for example, by producing an undertaking by those entities to place the necessary resources at the disposal of the economic operator)**

This information must follow the form in Volume 1, Section 4 of the tender documents and include:

1. List of principal deliveries of a similar nature being the supply, delivery, installation, removal of debris and Commissioning of Photovoltaic Systems to substantiate (2 and 3) below
2. State the value of deliveries of a similar nature as described above effected during the last three (3) years (being 2017-2020): the minimum value of which must not be less than €50,000.00 per annum.
3. State the number of deliveries of a similar nature described above effected during the last three (3) years (being 2017-2020): the minimum number of which must not be less than three (3) in number.

In so listing the end clients, the tenderer is giving his consent to the Evaluation Committee, so that the latter may, if it deems necessary, contact the relevant clients, with a view to obtain from them an opinion on the works provided to them, by the tenderer. The Evaluation Committee reserves the right to request additional documentation in respect of the deliveries listed.

4. Provide data concerning subcontractors and the percentage of works to be subcontracted.  
The maximum amount of sub-contracting must not exceed 10% of the total contract value. The main contractor must have the ability to carry out at least 90% of the contract works by his own means.
5. A list of the key expert/s and other staff proposed for the execution of the contract as per Form marked Key Experts.

#### Key Experts

**KEY EXPERT:** Provide one key expert who shall be possession of Enemalta Wireman's Licence B.

This electrical technician/fitter shall be delegated with the responsibility of the execution of all electrical works whatever their nature.

The tenderer must also have at least one Key Expert who shall be in possession of ISE 2103.

The Evaluation Committee reserves the right to request the tenderers to substantiate their claims in respect to the staff proposed by requesting CVs of key staff and signed Declarations of Exclusivity and Availability during the evaluation stage.

## 9. Multiple Tenders

- 9.1 A tenderer may submit multiple tender offers.
- 9.2 A company may not tender for a given contract both individually and as a partner in a joint venture/consortium.



- 9.3 A company may not tender for a given contract both individually/partner in a joint venture/consortium, and at the same time be nominated as a subcontractor by any another tenderer, or joint venture/consortium.
- 9.4 A company may act as a subcontractor for any number of tenderers, and joint ventures/consortia, provided that it does not participate individually or as part of a joint venture/consortium, and that the nominations do not lead to a conflict of interest, collusion, or improper practice.

## 10. Tender Expenses

10.1 The tenderer will bear all costs associated with the preparation and submission of the tender.

10.2 The Contracting Authority will neither be responsible for, nor cover, any expenses or losses incurred by the tenderer through site visits and inspections or any other aspect of his tender.

## 11. Tender Guarantee (Bid bond)

The tender guarantee, valid for a period of ninety [90] days from the opening date of the submitted Tenders, is set at €2,000.00 and must be an original and issued by a local Maltese Bank or a Financial Institution licensed by a recognised Financial Regulator in the country where the company is located and who assumes responsibility for claims and payments to the amount as stated above and remain valid up to and including the date of the awarding of the Tender. The tender guarantee must be drawn up on the Bank/Financial Institution's Letterhead and made out in the name of the Malta Red Cross Society.

The tender guarantee (bid bond) is intended as a pledge that the tenderer will not retract his offer up to the expiry date of the guarantee and, if successful, that he will enter into a contract with the Malta Red Cross Society on the terms and conditions stated in the tender document. Notwithstanding the aforementioned, although both the deadline for submission of offers and the validity of the offers may be extended in terms of Articles 8 and 10 of the General Rules Governing Tendering respectively, the validity of the tender guarantee (bid bond) shall not be extended.

**Tenderers will be requested to clarify/rectify, within five (5) working days from notification, the tender guarantee submitted, only in the following circumstances: either incorrect validity date, incorrect name of the NGO, incorrect name of the bidder and/or incorrect value. Such rectification/s must be submitted within five (5) working days. Failure to comply shall result in the tender offer not being considered any further.**

## B - TENDER DOCUMENTS

### 12. Content of Tender Document

12.1 The set of tender documents comprises the following documents and should be read in conjunction with any clarification notes issued in accordance with Clause 31:

- Instructions to Tenderers
- Draft Contract
- General Conditions (available online from [www.contracts.gov.mt/conditions](http://www.contracts.gov.mt/conditions))
- Special Conditions
- Technical Specifications
- Model Financial Bid/Bill of Quantities
- Drawings

12.2 Tenderers bear sole liability for examining with appropriate care the tender documents, including those design documents available for inspection, and any clarification notes to the tender documents issued during the tendering period, and for obtaining reliable information with respect to conditions and obligations that may in any way affect the amount or nature of the tender or the execution of the works. In the event that the tenderer is successful, no claim for alteration of the tender amount will be entertained on the grounds of errors or omissions in the obligations of the tenderer described above.

12.3 The tenderer must provide all documents required by the provisions of the tender document. All such documents, without exception, must comply strictly with these conditions and provisions and contain no alterations made by the tenderer.

### 13. Explanations/Clarification Notes Concerning Tender Documents

13.1 Tenderers may submit questions in writing to the Contracting Authority through:

- sending an email to [admin.ops@redcross.org.mt](mailto:admin.ops@redcross.org.mt)

up to 14 calendar days before the deadline for submission of tenders. The Contracting Authority must reply to all tenderers' questions, and amend the tender documents by publishing clarification notes, up to at least 7 calendar days before the deadline for submission of tenders.

13.2 Questions and answers, and alterations to the tender document will be published as a clarification note on the website of the Malta Red Cross Society (<http://www.redcross.org.mt/tenders>) within the respective tender's page. Clarification notes will constitute an integral part of the tender documentation, and it is the responsibility of tenderers to visit this website and be aware of the latest information published online prior to submitting their Tender.

13.3 The Contracting Authority may, at its own discretion, as necessary and in accordance with Clause 26, extend the deadline for submission of tenders to give tenderers sufficient time to take clarification notes into account when preparing their tenders.

## **14. Labour Law**

14.1 Particular attention is drawn to the conditions concerning the employment of labour in Malta and the obligation to comply with all regulations, rules or instructions concerning the conditions of employment of any class of employee.

## **15. Law**

15.1 By submitting their tenders, tenderers are accepting that this procedure is regulated by Maltese Law, and are deemed to know all relevant laws, acts and regulations of Malta that may in any way affect or govern the operations and activities covered by the tender and the resulting contract.

## **C. TENDER PREPARATION**

### **16. Language of Tenders**

16.1 The tender and all correspondence and documents related to the tender exchanged by the tenderer and the Contracting Authority must be written in English.

16.2 Supporting documents and printed literature furnished by the tenderer may be in another language, provided they are accompanied by a certified translation into English. For the purposes of interpretation of the tender, the English language will prevail.

### **17. Presentation of Tenders**

17.1 Tenders must satisfy the following conditions:

- (a) All tenders must be submitted in one original, clearly marked “original”, and one identical copy (including all documentation as in the original) signed in the same way as the original and clearly marked “copy”.
- (b) Both documents are to be separately sealed and placed in another sealed envelope/package so that the bid can be identified as one tender submission. Following the tender opening session, the copy shall be kept, unopened, at the Malta Red Cross Base of Operations, for verification purposes only should the need arise.
- (c) All tenders must be received by date and time indicated in the timetable at Clause 2 and deposited in the tender box at the Malta Red Cross Base of Operations, Gioacchino Le Brun Sreet, Pembroke, PBK 1710, MALTA
- (d) All packages, as per (b) above, must bear only:
  - (i) the above address;
  - (ii) the reference of the invitation to tender concerned;
  - (iii) the name of the tenderer.

## 18. Content of tenders

The tender must comprise the following duly completed documents, inserted in a single, sealed envelope (unless their volume requires a separate submission):

(a) Bid Bond

(b) General/Administrative Information

- (i) Statement on Conditions of Employment (Volume 1, Section 4, Form 1)
- (ii) Power of Attorney [where applicable] (Volume 1, Section 7, Form 1)
- (iii) Data on Joint Venture/Consortium [where applicable] (Volume 1, Section 7, Form 2)
- (iv) Tenderer's Statement on the implementation of Equal Opportunities within the tenderer's Business Organization (Volume 1, Section 4, Form 2)
- (v) Tenderer's Statement on environmental responsibility (Volume 1, Section 4, Form 3)

### Selection Criteria

(c) Financial and Economic Standing (not applicable).

(d) Technical Capacity

- (i) List of principal deliveries effected during the last 3 years, (2018, 2019 and 2020) (Volume 1, Section 4, Form 4)
- (ii) List of Trained Personnel (Volume 1, Section 7, Form 4)

(e) Evaluation Criteria/Technical Specifications

- (i) Tenderer's Technical Offer in response to specifications (Volume 3)
- (ii) Literature/List of Samples (Volume 1, Section 4, Form 5)

(f) List of recommended Spare Parts/Consumables/Accessories (Volume 1, Section 7, Form 5)

- (iii) After-Sales services Proposal (Volume 1, Section 7, Form 6)
- (iv) Training Proposal (Volume 1, Section 7, Form 7)

(g) Financial Offer/Bill of Quantities

- (i) The Tender Form in accordance with the form provided in Volume 1, Section 2; a separate Tender Form is to be submitted for each option tendered, each form clearly marked 'Option 1', 'Option 2' etc.;
- (ii) A financial bid calculated on a basis of Delivered Duty Paid (DDP) for the works/supplies tendered [inclusive of spare parts/after-sales services /maintenance/training as applicable] in the form provided in Volume 4.

**Notes to Clause 18.1:**

1. Tenderers will be requested to clarify/rectify, within two working days from notification, the tender guarantee only in the following two circumstances: either incorrect validity date, and/or incorrect value.
2. Tenderers will be requested to either clarify/rectify any incorrect and/or incomplete documentation, and/or submit any missing documents within two working days from notification.
3. No rectification shall be allowed. Only clarifications on the submitted information may be requested.

Tenderers must indicate where the above documentation is to be found in their offer by using an index. All documentation is to be securely bound/filed. Tenderers are NOT required NOR expected to submit, with their offer, any components of the tender document except those specifically mentioned in Clause 18.

**19. Tender Prices**

19.1 Tenderers will be deemed to have satisfied themselves, before submitting their tender, to its correctness and completeness, to have taken account of all that is required for the full and proper performance of the contract, and to have included all costs in their rates and prices.

19.2 The tender must be submitted in Euro (€).

19.3 Tenderers must quote all components of the price inclusive of taxes, customs and import duties and any discounts. Tenderers not registered with the VAT authority in Malta, must still include in their financial offer any VAT that the contracting authority may have to pay either in Malta or the country where the tenderer is registered irrespective of the reverse charge mechanism. The financial offer will be considered as the total financial cost to the contracting authority including any VAT that may have to be paid not through the winning tenderer. Except as may otherwise be provided for in the contract, no payment will be made for items which have not been costed.

19.4 Different options are to be clearly identifiable in the technical and financial submission; a separate Tender Form (as per Volume 1, Section 2) marked 'Option Page 1', 'Option 2' etc. for each individual option clearly outlining the price of the relative option is to be submitted.

19.5 If the tenderer offers a discount, the discount must be absorbed in the rates of the Bill of Quantities/Financial Statement.

19.6 The prices for the contract must include all of the works to be provided. The prices quoted are fixed and not subject to revision or escalation in costs, unless otherwise provided for in the Special Conditions.

**20. Currencies of Tender and Payments**

20.1 The currency of the tender is the Euro (€). All sums in the breakdown of the overall price, in the questionnaire and in other documents must be expressed in Euro (€), with the possible exception of originals of bank and annual financial statements.

20.2 Payments will be made upon certification of supplies by the Contracting Authority, based on the invoice issued by the Contractor, in accordance with the timeframes, terms and conditions of the contract.

20.3 All correspondence relating to payments, including invoices and interim and final statements must be submitted as outlined in the contract.

## **21. Period of Validity of Tenders**

21.1 Tenders must remain valid for a period of 90 days after the deadline for submission of tenders indicated in the contract notice, the tender document or as modified in accordance with Clauses 11.3 and/or 22. Any tenderer who quotes a shorter validity period will be rejected.

21.2 In exceptional circumstances the Contracting Authority may request that tenderers extend the validity of tenders for a specific period. Such requests and the responses to them must be made in writing. A tenderer may refuse to comply with such a request without forfeiting his tender guarantee (Bid Bond). However, his tender will no longer be considered for award. If the tenderer decides to accede to the extension, he may not modify his tender.

21.3 The successful tenderer must maintain his tender for a further 60 days from the date of notification of award.

## **22. Tender Guarantee (Bid Bond)**

22.1 The tender guarantee (Bid Bond) is set at €2,000.00 required as per Clause 11

## **23. Variant Solutions**

23.1 No variant solutions will be accepted. Tenderers must submit a tender in accordance with the requirements of the tender document.

## **24. Preparation and Signing of Tenders**

24.1 All tenders must be submitted in one original, clearly marked “original”, and one identical copy (including all documentation as in the original) signed in the same way as the original and clearly marked “copy”. Tenders must comprise the documents specified in Clause 18 above.

It is the responsibility of the tenderers to ensure that both the original and the copy are an identical representation of one another.

24.2 The tenderer’s submission must be typed in, or handwritten in indelible ink. Any pages on which entries or corrections to which submissions have been made must be initialed by the person or persons signing the tender. All pages must be numbered consecutively by hand, machine or in any other way acceptable to the Contracting Authority. An index is to be provided clearly stating where each document is located. Failure to do so may invalidate the tender at the evaluation committee’s discretion.

24.3 The tender must contain no changes or alterations, other than those made in accordance with instructions issued by the Contracting Authority (issued as clarification notes) or necessitated by errors on the part of the tenderer. In the latter case, corrections must be initialed by the person signing the tender.

24.4 The tender will be rejected if it contains any alteration, tampering, addition or deletion to the tender documents not specified in a clarification note issued by the Contracting Authority.

## D. SUBMISSION OF TENDERS

### 25. Sealing and Marking of Tenders

25.1 The tenders must be submitted in English and deposited in the Organisation's Tender Box before the deadline specified in Clause 2 or as otherwise specified in accordance with Clause 13.1 and/or 26.1. They must be submitted:

EITHER by recorded delivery (official postal/courier service) or hand delivered to:

Malta Red Cross Base of Operations,  
Gioacchino Le Brun Street,  
Pembroke, PBK1710,  
MALTA.

Between Monday - Friday from 09:00 - 16:00hrs.

**NB: Tenders submitted by any other means will not be considered.**

25.2 Tenderers must seal the original and the copy of their tender as outlined in Clause 17.

25.3 If the outer envelope is not sealed and marked as required in Clause 25, the Contracting Authority will assume no responsibility for the misplacement or premature opening of the tender.

### 26. Extension of Deadline for Submission of Tenders

The Contracting Authority may, at its own discretion, extend the deadline for submission of tenders by issuing a clarification note in accordance with Clause 13. In such cases, all rights and obligations of the Contracting Authority and the tenderer regarding the original date specified in the contract notice will be subject to the new date.

### 27. Late Tenders

27.1 All tenders received after the deadline for submission specified in the contract notice or these instructions will be marked 'REJECTED' and kept, unopened, by the Contracting Authority. The associated guarantees will be returned to the tenderers.

27.2 No liability can be accepted for late delivery of tenders. Late tenders will be rejected and will not be evaluated.

### 28. Alterations and Withdrawal of Tenders

28.1 Tenderers may alter or withdraw their tenders by written notification prior to the deadline for submission of tenders. No tender may be altered after the deadline for submission.

28.2 Any notification of alteration or withdrawal must be prepared, sealed, marked and submitted in accordance with Clause 25, and the envelope must also be marked with "alteration" or "withdrawal".

28.3 The withdrawal of a tender in the period between the deadline for submission and the date of expiry of the validity of the tender will result in forfeiture of the tender guarantee provided for in Clause 22.

## **E. OPENING AND EVALUATION OF OFFERS**

### **29. Opening of Tenders**

29.1 Tenders will be opened in public session on the date and time indicated in the timetable at Clause 2 (or as otherwise specified in accordance with Clause 13.1 and/or 26.1) at the Malta Red Cross Base of Operations, Gioacchino Le Brun Street, Pembroke, PBK 1710, Malta. Malta Red Cross will draw up a 'Summary of Tenders Received' which will be published on the notice board at the Malta Red Cross Head Office, 104, St. Ursula Street, Valletta, VLT 1234, MALTA and shall also be available to view on the Organisation's website, <http://www.redcross.org.mt/tenders>.

29.2 At the tender opening, the tenderers' names, the tender prices, variants, written notification of alterations, withdrawals, together with any other information the Contracting Authority may consider appropriate will be published.

29.3 Envelopes marked "REJECTED" will be read out first and kept by Malta Red Cross

29.4 Envelopes marked 'WITHDRAWAL' will be read out first and returned to the tenderer.

29.5 Reductions or alterations to tender prices made by tenderers after submission will not be taken into consideration during the analysis and evaluation of tenders.

### **30. Secrecy of the Procedure**

30.1 After the opening of the tenders, no information about the examination, clarification, evaluation or comparison of tenders or decisions about the contract award may be disclosed before the notification of award.

30.2 Information concerning checking, explanation, opinions and comparison of tenders and recommendations concerning the award of contract, may not be disclosed to tenderers or any other person not officially involved in the process unless otherwise permitted or required by law.

30.3 Any attempt by a tenderer to approach any member of the Evaluation Committee/Contracting Authority directly during the evaluation period will be considered legitimate grounds for disqualifying his tender.

### **31. Clarification of Tenders**

31.1 When checking and comparing tenders, the evaluation committee may ask a tenderer to clarify any aspect of the submitted tender.

31.2 Such requests and the responses to must be made by e-mail. Under no circumstances may the tenders be altered or the price or content of the tender changed except to correct arithmetical errors discovered by the evaluation committee when analysing tenders, in accordance with Clause 33.

### **32. Tender Evaluation Process**

32.1 The following should be read in conjunction with Clause 29.



### **32.2 Part 1: Administrative Compliance**

The Evaluation Committee will check the compliance of tenders with the instructions given in the tender document, and in particular the documentation submitted in respect of Clause 18.

The Evaluation Committee shall, after having obtained approval by the General Contracts Committee, request rectifications in respect of incomplete/non-submitted information pertinent to the documentation as outlined in sub-Clause 17.1(a), 17.1(b), and 17.1(c) of these Instructions to Tenderers. Such rectification/s must be submitted within two (2) working days from notification, and will be subject to a non-refundable administrative penalty of €50: failure to comply shall result in the tender offer not being considered any further. No rectification shall be allowed in respect of the documentation as outlined in sub-Clause 18.1 (d), 18.1(e), and 18.1(f) of these Instructions to Tenderers. Only clarifications on the submitted information in respect of the latter may be eventually requested.

### **32.3 Part 2: Eligibility and Selection Compliance**

Tenders which have been considered administratively compliant shall be evaluated for admissibility as outlined below:

- (i) Eligibility Criteria
  - Tender Form (Volume 1, Section 2)
- (ii) Selection Criteria
  - Evidence of technical capacity (sub-Clause 6.1.2) 32.4

### **32.4 Part 3: Technical Compliance**

At this step of the evaluation process, the Evaluation Committee will analyse the administratively-compliant tenders' technical conformity in relation to the technical specifications (Volume 3, and the documentation requested by the Contracting Authority as per sub-Clause 18(e)), classifying them technically compliant or noncompliant.

Tenders who are deemed to be provisionally technically compliant through the evaluation of their technical offer (especially the specifications) shall be requested to submit samples so that the Evaluation Committee will corroborate the technical compliance of the offers received.

In the case of suppliers who are already supplying the product being offered, the tenderer may be exempted from submitting samples. However the specific brand name and the respective reference of the Letter of Acceptance/Contract must be clearly indicated in the tender submission.

### **32.5 Part 4. Financial Evaluation**

The financial offers for tenders which were not eliminated during the technical evaluation (i.e., those found to be technically compliant) will be evaluated.

The Evaluation Committee will check that the financial offers contain no arithmetical errors as outlined in Clause 33.

The financial evaluation will have to identify the best financial offer

### **33. Correction of Arithmetical Errors**

33.1 Admissible tenders will be checked for arithmetical errors by the Evaluation Committee. Errors will be corrected as follows:

- (a) where there is a discrepancy between amounts in figures and in words, the amount in words will prevail;
- (b) where there is a discrepancy between a unit price and the total amount derived from the multiplication of the unit price and the quantity, the unit price as quoted will prevail.

33.2 The amount stated in the tender will be adjusted by the Evaluation Committee in the event of error, and the tenderer will be bound by that adjusted amount. In this regard, the Evaluation Committee shall seek the prior approval of the General Contracts Committee to communicate the revised price to the tenderer. If the tenderer does not accept the adjustment, his tender will be rejected and his tender guarantee forfeited.

33.3 When analysing the tender, the evaluation committee will determine the final tender price after adjusting it on the basis of Clause 33.1.

## **F. CONTRACT AWARD**

### **34. Criteria for Award**

The sole award criterion will be the price. The contract will be awarded to the cheapest priced tender satisfying the administrative and technical criteria.

### **35. Right of the Contracting Authority to accept or reject any tender**

35.1 The Contracting Authority reserves the right to accept or reject any tender and/or to cancel the whole tender procedure and reject all tenders. The Contracting Authority reserves the right to initiate a new invitation to tender.

35.2 In the event of a tender procedure's cancellation, tenderers will be notified by the Contracting Authority. If the tender procedure is cancelled before the outer envelope of any tender has been opened, the sealed envelopes will be returned, unopened, to the tenderers.

35.3 Cancellation may occur where:

- a) the tender procedure has been unsuccessful, namely where no qualitatively or financially worthwhile tender has been received or there has been no response at all;
- b) the economic or technical parameters of the project have been fundamentally altered;
- c) exceptional circumstances or force majeure render normal performance of the project impossible;
- d) all technically compliant tenders exceed the financial resources available;
- e) there have been irregularities in the procedure, in particular where these have prevented fair competition.

**In no circumstances will the Contracting Authority be liable for damages, whatever their nature (in particular damages for loss of profits) or relationship to the cancellation of a tender, even if the Contracting Authority has been advised of the possibility of damages. The publication of**

**a contract notice does not commit the Contracting Authority to implement the programme or project announced.**

### **36. Notification of Award, Contract Clarifications**

36.1 Prior to the expiration of the period of validity of tenders, the Contracting Authority will notify the successful tenderer, in writing, that his tender has been recommended for award by the General Contracts Committee, pending any appeal being lodged in terms of Part II of the Public Procurement Regulations (being reproduced in Volume 1, Section 6).

36.2 Unsuccessful bidders shall be notified with the outcome of the evaluation process, and will be provided the following information:

- (i) the criteria for award;
- (ii) the name of the successful tenderer;
- (iii) the recommended price of the successful bidder;
- (iv) the reasons why the tenderer did not meet the technical specifications/ notification that the offer was not the cheapest (if applicable); (v) the deadline for filing a notice of objection (appeal); (vi) the deposit required if lodging an appeal.

36.3 The recommendations of the General Contracts Committee shall be published on the Notice Board of the Malta Red Cross, and published online on the Organisation's website, <http://www.redcross.org.mt/tenders>.

### **37. Contract Signing and Performance Guarantee**

37.1 After the lapse of the appeals period, and pending that no objections have been received and/or upheld, the successful tenderer may be invited to clarify certain contractual questions raised therein. Such clarification will be confined to issues that had no direct bearing on the choice of the successful tender. The outcome of any such clarifications will be set out in a Memorandum of Understanding, to be signed by both parties and incorporated into the contract.

37.2 Within 15 calendar days of receiving the contract (against acknowledgment of receipt) from the Contracting Authority, the successful tenderer will sign and date the contract and return it to the Contracting Authority with the performance guarantee and the Financial Identification Form (if applicable). On signing of the contract by the Contracting Authority, the successful tenderer will become the Contractor and the contract will enter into force.

37.3 Before the Contracting Authority signs the contract with the successful tenderer, the successful tenderer may be requested to provide the documentary proof or statements required to show that it does not fall into any of the exclusion situations listed in Clause 7 of the Tender Form (Volume 1, Section 2). The above mentioned documents must be submitted by every member of a Joint Venture/Consortium (if applicable).

37.4 If the selected tenderer fails to sign and return the contract, other required documentation, and any guarantees required within the prescribed 15 calendar days, the Contracting Authority may consider the acceptance of the tender to be cancelled without prejudice to the Contracting Authority's right to seize the guarantee, claim compensation or pursue any other remedy in respect of such failure, and the successful tenderer will have no claim whatsoever on the Contracting Authority.

The tenderer whose tender has been evaluated as second cheapest may be recommended for award, and so on and so forth.

37.5 Only the signed contract will constitute an official commitment on the part of the Contracting Authority, and activities may not begin until the contract has been signed by the Contracting Authority and the successful tenderer.

37.6 Tender guarantees (bid bonds) provided by tenderers who have not been selected shall be released within 30 calendar days from the signing of the contract. The tender guarantee of the successful tenderer shall be released on the signing of the contract, and on submission of a valid performance guarantee.

37.7 The performance guarantee referred to in the General Conditions is set at 10% of the amount of the contract and must be presented in the form specified in Volume 2, Section 4, to the tender document the performance guarantee shall be released within 30 days of the signing of the Final Statement of Account (Final Bill), unless the Special Conditions provide otherwise.

### **38. Period of Delivery**

38.1 The period of delivery indicated in Clause 1.3 of the Instructions to Tenderers commences from 3 working days from last signature of contract.

38.2 The Contractor must inform the Contracting Authority's representative by return that he has received the notice.

## **G. MISCELLANEOUS**

### **39. Ethics Clauses**

39.1 Any attempt by a candidate or tenderer to obtain confidential information, enter into unlawful agreements with competitors or influence the committee or the Contracting Authority during the process of examining, clarifying, evaluating and comparing tenders will lead to the rejection of his candidacy or tender and may result in administrative penalties.

39.2 Without the Contracting Authority's prior written authorisation, the Contractor and his staff or any other company with which the Contractor is associated or linked may not, even on an ancillary or subcontracting basis, supply other services, carry out works or supply equipment for the project. This prohibition also applies to any other programmes or projects that could, owing to the nature of the contract, give rise to a conflict of interest on the part of the Contractor.

39.3 When putting forward a candidacy or tender, the candidate or tenderer must declare that he is affected by no potential conflict of interest, and that he has no particular link with other tenderers or parties involved in the project.

39.4 The Contractor must at all times act impartially and as a faithful adviser in accordance with the code of conduct of his profession. He must refrain from making public statements about the project or services without the Contracting Authority's prior approval. He may not commit the Contracting Authority in any way without its prior written consent.

39.5 For the duration of the contract, the Contractor and his staff must respect human rights and undertake not to offend the political, cultural and religious morals of Malta.

39.6 The Contractor may accept no payment connected with the contract other than that provided for therein. The Contractor and his staff must not exercise any activity or receive any advantage inconsistent with their obligations to the Contracting Authority.

39.7 The Contractor and his staff are obliged to maintain professional secrecy for the entire duration of the contract and after its completion. All reports and documents drawn up or received by the Contractor are confidential.

39.8 The contract governs the Parties' use of all reports and documents drawn up, received or presented by them during the execution of the contract.

39.9 The Contractor shall refrain from any relationship likely to compromise his independence or that of his staff. If the Contractor ceases to be independent, the Contracting Authority may, regardless of injury, terminate the contract without further notice and without the Contractor having any claim to compensation.

39.10 The tender(s) concerned will be rejected or the contract terminated if it emerges that the award or execution of a contract has given rise to unusual commercial expenses. Such unusual commercial expenses are commissions not mentioned in the main contract or not stemming from a properly concluded contract referring to the main contract, commissions not paid in return for any actual and legitimate service, commissions remitted to a tax haven, commissions paid to a recipient who is not clearly identified or commissions paid to a company which has every appearance of being a front company.

#### **40. Data Protection and Freedom of Information**

40.1 Any personal data submitted in the framework of the procurement procedure and/or subsequently included in the contract shall be processed pursuant to the Data Protection Act (2001). It shall be processed solely for the purposes of the performance, management and follow-up of the procurement procedure and/or subsequent contract by the Contracting Authority/Contracting Authority without prejudice to possible transmission to the bodies charged with a monitoring or inspection task in conformity with National and/or Community law.

40.2 The provisions of this contract are without prejudice to the obligations of the Contracting Authority in terms of the Freedom of Information Act (Cap. 496 of the Laws of Malta). The Contracting Authority, prior to disclosure of any information in relation to any provisions of this contract which have not yet been made public, shall consult the contractor in accordance with the provisions of the said Act, pertinent subsidiary legislation and the Code of Practice issued pursuant to the Act. Such consultation shall in no way prejudice the obligations of the Contracting Authority in terms of the Act.

#### **41. Gender Equality**

41.1 In carrying out his/her obligations in pursuance of this contract, the tenderer shall ensure the application of the principle of gender equality and shall thus 'inter alia' refrain from discriminating on the grounds of gender, marital status or family responsibilities. Tenderers are to ensure that these principles are manifest in the organigram of the company where the principles aforementioned, including the selection criteria for access to all jobs or posts, at all levels of the occupation hierarchy are amply proven. In this document words importing one gender shall also include the other gender.

## VOLUME 1 SECTION 2 - TENDER

### A. FORM

(A separate, distinct Tender Form must be submitted for EACH OPTION - if applicable - submitted)

1. Add/delete additional lines for partners as appropriate. Note that a sub-contractor is not considered to be a partner for the purposes of this tender procedure. If this tender is being submitted by an individual tenderer, the name of the tenderer should be entered as 'leader' (and all other lines should be deleted)
2. Proposed proportion of responsibilities between partners (in %) with indication of the type of the works to be performed by each partner (the company acting as the lead partner in a joint venture/consortium, they must have the ability to carry out at least 50% of the contract works by its own means. If a company is another partner in a joint venture/consortium (i.e. not the lead partner) it must have the ability to carry out at least 10% of the contract works by its own means).

| Supply intended to be sub-contracted | Name and details of sub-contractors | Value of sub-contracting as percentage of the total cost <sup>3</sup> | Experience in similar supplies (details to be specified) |
|--------------------------------------|-------------------------------------|-----------------------------------------------------------------------|----------------------------------------------------------|
| 1                                    |                                     |                                                                       |                                                          |
| 2                                    |                                     |                                                                       |                                                          |
| (.)                                  |                                     |                                                                       |                                                          |

3. The maximum amount of sub-contracting must not exceed 10% of the total contract value. The main contractor must have the ability to carry out at least 90% of the contract works by his own means.

### B CONTACT PERSON (for this tender)

|           |                         |         |              |
|-----------|-------------------------|---------|--------------|
| Name      |                         | Surname |              |
| Telephone | (____) _____            | Fax     | (____) _____ |
| Address   | .....<br>.....<br>..... |         |              |

### C TENDERER'S DECLARATION(S)

To be completed and signed by the tenderer (including each partner in a consortium).

In response to your letter of invitation to tender for the above contract, we, the undersigned, hereby declare that:

1. We have examined, and accept in full and in its entirety, the content of this tender document (including subsequent Clarifications Notes issued by the Contracting Authority) for invitation to tender No [\_\_\_\_\_/\_\_\_\_\_] of [...../...../.....]. We hereby accept the contents thereto in their entirety, without reservation or restriction. We also understand that any disagreement, contradiction, alteration or deviation shall lead to our tender offer not being considered any further.
2. We offer to provide, in accordance with the terms of the tender document and the conditions and time limits laid down, without reserve or restriction, the following supplies:
3. The total price of our tender (inclusive of duties, VAT, other taxes and any discounts) is:  
[.....] (in words).
4. This tender is valid for a period of 90 days from the final date for submission of tenders.
5. If our tender is accepted, we undertake to provide a performance guarantee of 10% of the contract value as required by the General Conditions.
6. We are making this application in our own right and [as partner in the consortium led by [< name of the leader / ourselves >] for this tender. We confirm that we are not tendering for the same contract in any other form. We confirm, as a partner in the consortium, that all partners are jointly and severally liable by law for the performance of the contract, that the lead partner is authorised to bind, and receive instructions for and on behalf of, each member, and that all partners in the joint venture/consortium are bound to remain in the joint venture/consortium for the entire period of the contract's performance]. We are fully aware that, in the case of a consortium, the composition of the consortium cannot be modified in the course of the tender procedure.
7. We are not bankrupt or under an administration appointed by the Court, or under proceedings leading to a declaration of bankruptcy. We also declare that we have not been convicted criminally, or found guilty of professional misconduct. Furthermore, we are up-to-date in the payment of social security contributions and other taxes.
8. We accept that we shall be excluded from participation in the award of this tender if compliance certificates in respect of declarations made under Clause 9 of this declaration are not submitted by the indicated dates.
9. We agree to abide by the ethics clauses of the instructions to tenderers and, in particular, have no potential conflict of interests or any relation with other candidates or other parties in the tender procedure at the time of the submission of this application. We have no interest of any nature whatsoever in any other tender in this procedure. We recognise that our tender may be excluded if we propose key experts who have been involved in preparing this project or engage such personnel as advisers in the preparation of our tender.
10. We will inform the Contracting Authority immediately if there is any change in the above circumstances at any stage during the implementation of the contract. We also fully recognise and accept that any false, inaccurate or incomplete information deliberately provided in this application may result in our exclusion from this and other contracts funded by the Government of Malta and the European Communities.
11. Our tender submission has been made in conformity with the Instructions to Tenderers, and in this respect we confirm having included in the appropriate packages as required, the following documentation:
  - (a) Tender Guarantee
    - o Bid Bond as per Clause 11
  - (b) General Information
    - o Statement on Conditions of Employment (Volume 1, Section 4, Form1)
    - o Power of Attorney [where applicable] (Volume 1, Section 7, Form 1)
    - o Data on Joint Venture/Consortium [where applicable] (Volume 1, Section 7, Form 2)
    - o Tenderer's Statement on the implementation of Equal Opportunities within the tenderer's Business Organization (Volume 1, Section 4, Form 2)

- Tenderer’s Statement on the environment responsibility (Volume 1, Section 4, Form 3)

**Selection Criteria**

- (c) Technical Capacity
  - Experience as Contractor (Volume 1, Section4, Form 4)
  - List of Trained Personnel (Volume 1, Section 7, Form 4)
- (d) Evaluation Criteria/Technical Specifications (Note 3)
  - Tenderer’s Technical Offer (Volume 3)
  - Literature (Volume 1, Section 4, Form 5)
  - List of recommended Spare Parts/Consumables/Accessories (Volume 1, Section 7, Form 5)
  - After-Sales services Proposal (Volume 1, Section 7, Form 6)

Tender Form, and Financial Offer/Bill of Quantities

**Notes:**

1. Tenderers will be requested to clarify/rectify, within two working days from notification, the tender guarantee only in the following two circumstances: either incorrect validity date, and/or incorrect value. This is indicated by the symbol ○
2. Tenderers will be requested to either clarify/rectify any incorrect and/or incomplete documentation, and/or submit any missing documents within two working days from notification. This is indicated by the symbol ○
3. No rectification shall be allowed. Only clarifications on the submitted information may be requested. This is indicated by the symbol ●

12. I acknowledge that the Contracting Authority shall request rectifications in respect of incomplete/non-submitted information pertinent to the documentation listed in Clause 11(a), 11(b), and 11(c) of this Tender Form. We understand that such rectification/s must be submitted within two (2) working days, and will be subject to a non-refundable administrative penalty of €50, and that failure to comply shall result in our offer not being considered any further.

13. We note that the Contracting Authority is not bound to proceed with this invitation to tender and that it reserves the right to cancel or award only part of the contract. It will incur no liability towards us should it do so.

Name and Surname: \_\_\_\_\_

I.D. / Passport Number: \_\_\_\_\_

Signature of tenderer: \_\_\_\_\_

Duly authorised to sign this tender on behalf of: \_\_\_\_\_

Company/Lead Partner VAT No (If applicable): \_\_\_\_\_

Stamp of the firm/company: \_\_\_\_\_

Place and date: \_\_\_\_\_



### VOLUME 1 SECTION 3 - SPECIMEN TENDER GUARANTEE FORM

(LETTERHEAD OF THE REGISTERED FINANCIAL INSTITUTION PROVIDING THE GUARANTEE)

Name of Contracting Authority  
(Address)

[Date]

Dear Sir,

Our Guarantee Number ..... for €.....

Account: [Account Holder’s Name]

In connection with the contract entered into between the Director of Contracts on your behalf/ yourself and [Name and Address of Contractor] hereinafter referred to as “the Contractor” as per the latter’s tender and your acceptance under [Contract Reference], whereby the contractor undertook the [title of contract] in accordance with the General Conditions and/or Special Conditions for Service/Supply/Works Contracts forming part of the contract documents, we hereby guarantee to pay you on demand a maximum sum of €[amount in words and numbers] in case the obligations of the above-mentioned contract are not duly performed by the Contractor.

This guarantee will become payable on your first demand and it shall not be incumbent upon us to verify whether such demand is justified.

For avoidance of doubt it is hereby declared that although this instrument gives rise to legal relations between the guarantor and the beneficiary, it is hereby specifically declared for all intents and purposes of law that this guarantee does not exempt the above-mentioned Contractor from any obligations, acts of performance or undertaking assumed under the tender documents as ratified in the contract.

Any payments due to the contractor in respect of the obligations entered into under the contract above referred to shall be made through this Bank.

This guarantee expires on the [expiry date] and unless it is extended by us or returned to us for cancellation before that date any demand made by you for payment must be received in writing not later than the aforementioned expiry date.

This document should be returned to us on utilization or expiry or in the event of the guarantee being no longer required.

After the expiry date and in the absence of a written demand being received by us before such expiry date, this guarantee shall be null and void, whether returned to us or not, and our liability hereunder shall terminate.

This guarantee is governed by Maltese Law, it is personal to you, and is not transferable or assignable.

Yours Faithfully,

.....  
[Signatory on behalf of Guarantor]  
[Designation]

## VOLUME 1 SECTION 4 - TENDERER'S STATEMENTS

### 1. Statement on Conditions of Employment

**Tenderers are to ensure that self-employed personnel registered with Maltese Authorities are not engaged as employees of the company on this contract. Self-employed personnel may be engaged as subcontractors or as partners in a Joint Venture.  
Non-compliance will invalidate the contract.**

It is hereby declared that all employees engaged on this contract shall enjoy working conditions such as wages, salaries, vacation and sick leave, maternity and parental leave as provided for in the relative Employment Legislation. Furthermore, we shall comply with Chapter 424 of the Laws of Malta (Occupational Health and Safety Authority Act) as well as any other national legislation, regulations, standards and/or codes of practice or any amendment thereto in effect during the execution of the contract.

In the event that it is proved otherwise during the execution of the contract it is hereby being consented that the contract is terminated with immediate effect and that no claim for damages or compensation be raised by us.

Signature: .....

(the person or persons authorised to sign on behalf of the tenderer)

Date: .....

**2 - Tenderer’s Statement on the implementation of Equal Opportunities within the Tenderer’s Business Organisation**

It is hereby being declared that this organisation is committed towards gender equal opportunities. In fact, its job descriptions/workforce profiles are gender neutral and equal opportunities are taken into account in recruitment and employment. It offers equal pay for equal work and the services that it offers are accessible to both genders.

Signature: .....  
(the person or person/s authorised to sign on behalf of the tenderer)

Date: .....

**3 - Tenderer’s Statement on environmental responsibility.**

It is hereby being declared that this organisation is committed towards its environmental responsibilities with respect to waste, energy, printing of materials, water and other environmental factors. We also confirm that any waste generated by this project will be properly disposed of without harming the environment and recycled.

Signature: .....  
(the person or persons authorised to sign on behalf of the tenderer)

Date: .....

**4 - List of Principal Deliveries**

List of principal deliveries effected during the past 3 years [2007, 2018 and 2019]:

| DESCRIPTION OF SUPPLIES | TOTAL VALUE OF SUPPLIES | DATE OF DELIVERY | CLIENT*/ CONTACTING AUTHORITY* |
|-------------------------|-------------------------|------------------|--------------------------------|
|                         |                         |                  |                                |
|                         |                         |                  |                                |
|                         |                         |                  |                                |
|                         |                         |                  |                                |
|                         |                         |                  |                                |
|                         |                         |                  |                                |
|                         |                         |                  |                                |

\* In so listing the end clients, I am giving my consent to the Evaluation Committee, so that the latter may, if it deems necessary, contact the relevant clients, with a view to obtain from them an opinion on the supplies provided to them.

Signature: .....  
 (the person or persons authorised to sign on behalf of the tenderer)

Date: .....

## 5 - Literature/List of Samples

### 1. List of literature to be submitted with the tender:

Tenderers shall submit a description of the equipment and its components as offered together with all relevant manufacturer's catalogues, illustrations and diagrams. All relevant technical and descriptive literature shall be in English. Technical literature, copies of relevant certificates and other documentation shall be submitted in a spiral bound document in the following format:

|    | Item                                                                                                                                                                                                                                                                               | Page no. or reference in submitted documentation |
|----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|
| 1  | Technical literature of photovoltaic panels.                                                                                                                                                                                                                                       |                                                  |
| 2  | Technical literature of inverter/s.                                                                                                                                                                                                                                                |                                                  |
| 3  | Technical literature of the computer based monitoring system.                                                                                                                                                                                                                      |                                                  |
| 4  | Technical literature of materials to be used in the PV structure. The bidder shall also describe the method to be used to prevent galvanic corrosion, method for anchoring panels and the support structure on the roof.                                                           |                                                  |
| 5  | Technical literature of AC cables                                                                                                                                                                                                                                                  |                                                  |
| 6  | Technical literature of DC cables                                                                                                                                                                                                                                                  |                                                  |
| 7  | Technical literature of CAT 5E cables                                                                                                                                                                                                                                              |                                                  |
| 8  | Technical literature of Distribution Board                                                                                                                                                                                                                                         |                                                  |
| 9  | Technical literature of low voltage switchgear including MCBs and RCDs                                                                                                                                                                                                             |                                                  |
| 10 | Technical literature of AC switch disconnectors                                                                                                                                                                                                                                    |                                                  |
| 11 | Technical literature of DC switch disconnectors                                                                                                                                                                                                                                    |                                                  |
| 12 | Technical literature detailing electrical installation labeling to be affixed to the system.                                                                                                                                                                                       |                                                  |
| 13 | Technical literature of galvanized steel cable tray                                                                                                                                                                                                                                |                                                  |
| 14 | PV module certification including EN61215, EN61730 and EN61701 certificates.                                                                                                                                                                                                       |                                                  |
| 15 | Evidence that PV manufacturer has ISO9001 and ISO14001 certification.                                                                                                                                                                                                              |                                                  |
| 16 | Drawings of PV panels support structure showing plans and elevations of structure. The drawings shall also include dimensions of each component of the support structure. Wind loading stress analysis of system structure                                                         |                                                  |
| 17 | A sample certificate of the PV system structural equipment certified by an EU accredited body must be submitted with the tender and which will be similar to the certificate presented by the contractor with the commissioning documents following the installation of PV panels. |                                                  |
| 18 | Drawings showing the proposed layout, sections and elevations of the PV array.                                                                                                                                                                                                     |                                                  |
| 19 | Electrical schematic drawings clearly indicating the proposed switchgear rating, cable sizing, expected voltage drop on each cable, PV modules rating, inverter rate and balance of system to be installed.                                                                        |                                                  |

|    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| 20 | Drawings and technical detail of the anchorage ballast to be used for the PV Page 27 system. The bidder shall provide calculations used to determine the size and weight of the anchorage block. Site drawings displaying the calculated load and location of each proposed anchoring load points on the roof. The detail shall also include the maximum wind speed each section of the PV installation is expected to withstand.                                                                                                                                   |  |
| 21 | Web based portal detail and description of the monitoring system.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |
| 22 | A detailed simulation of the complete photovoltaic system layout on available area considering shading particularly on the winter solstice occurring on the 21st of December and the summer solstice, occurring on the 21st of June. Simulations for the equinox occurring around the 20th of March and the 22nd of September shall also be provided. The bidder must determine and provide the yield and output of the system being offered. Systems which maximize the energy yield while making the most efficient use of the available area shall be preferred. |  |
| 23 | Evidence of competence in repairing the inverter, or maintaining a stock of spare parts in Malta.                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |
| 24 | Details of at least 3 other similar projects executed by the bidder.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |  |
| 25 | Details shall also include records of monthly energy yield (in kWh) generated by these systems during the past 2 years.                                                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| 26 | Warranty period on the system output yield complete with data as specified.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |
| 27 | Method statement describing how the installation, testing and commissioning of the PV system shall be carried.                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |
| 28 | Programme of works listing major milestones of the project and time frame for completion of each task.                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |
| 29 | Health and safety precautions to be undertaken by the contractor to minimise all accident risks during installation, commissioning and maintenance.                                                                                                                                                                                                                                                                                                                                                                                                                 |  |
| 30 | List of recommended spare parts.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |

Failure to submit the complete set of documents as requested will lead to disqualification of the bid.

Signature: .....  
(the person or persons authorised to sign on behalf of the tenderer)

Date: .....

## VOLUME 1 SECTION 5 - GLOSSARY

### Definitions

**Note: the present definitions are given here for convenience only, in the context of the tender procedure. The definitions set out in the contract as concluded are determining for the relations between the parties to the contract.**

**Administrative order:** Any instruction or order issued by the Project Manager to the Contractor in writing regarding the execution of the contract.

**Breakdown of the overall price:** A heading-by-heading list of the rates and costs making up the price for a lump-sum contract.

**Contracting Authority:** means the final beneficiary - the Malta Red Cross Society

**Conflict of interest:** Any event influencing the capacity of a candidate, tenderer or supplier to give an objective and impartial professional opinion, or preventing him, at any moment, from giving priority to the interests of the Contracting Authority. Any consideration relating to possible contracts in the future or conflict with other commitments, past or present, of a candidate, tenderer or supplier, or any conflict with his own interests. These restrictions also apply to subcontractors and employees of the candidate, tenderer or supplier.

**Contract value:** The total value of the contract to be paid by the Contracting Authority in terms of the agreed terms and conditions.

**Contractor:** The successful tenderer, once all parties have signed the contract.

**Day:** Calendar day.

**Dayworks:** Varied work inputs subject to payment on an hourly basis for the Contractor's employees and plant.

**Defects Notification Period:** The period stated in the contract immediately following the date of provisional acceptance, during which the Contractor is required to complete the works and to remedy defects or faults as instructed by the Engineer.

**Drawings:** Drawings provided by the Contracting Authority and/or the Engineer, and/or drawings provided by the Contractor and approved by the Engineer, for the carrying out of the works.

**Engineer's representative:** Any natural or legal person, designated by the Engineer as such under the contract, and empowered to represent the Engineer in the performance of his functions, and in exercising such rights and/or powers as have been delegated to him. In this case, references to the Engineer will include his representative.

**Equipment:** Machinery, apparatus, components and any other articles intended for use in the works

**Evaluation Committee:** a committee made up of an odd number of voting members (at least three) appointed by the Contracting Authority and possessing the technical, linguistic and administrative capacities necessary to give an informed opinion on tenders.

**Final acceptance certificate:** Certificate(s) issued by the Engineer to the Contractor at the end of the defects notification period stating that the Contractor has completed his obligations to construct, complete, and maintain the works concerned.

**Final Beneficiary:** The Department/Entity or other government body on whose behalf the Gozo Diocese has issued this tender.



**Foreign currency:** Any currency permissible under the applicable provisions and regulations other than the Euro, which has been indicated in the tender.

**General conditions:** The general contractual provisions setting out the administrative, financial, legal and technical clauses governing the execution of contracts.

**General damages:** The sum not stated beforehand in the contract, which is awarded by a court or an arbitration tribunal, or agreed between the parties, as compensation payable to an injured party for a breach of the contract by the other party.

**In writing:** This includes any hand-written, typed or printed communication, including fax transmissions and electronic mail (e-mail).

**Liquidated damages:** The sum stated in the contract as compensation payable by the Contractor to the Contracting Authority for failure to complete the contract or part thereof within the periods under the contract, or as payable by either party to the other for any specific breach identified in the contract.

**Modification:** An instruction given by the Engineer which modifies the works.

**National currency:** The currency of the country of the Contracting Authority. Period: A period begins the day after the act or event chosen as its starting point. Where the last day of a period is not a working day, the period expires at the end of the next working day.

**Plant:** appliances and other machinery, and, where applicable under the law and/or practice of the state of the Contracting Authority, the temporary structures on the site required to carry out the works but excluding equipment or other items required to form part of the permanent works.

**Project Manager:** The legal or natural person responsible for monitoring the execution of the contract on behalf of the Contracting Authority, where the latter is not the Contracting Authority.

**Provisional sum:** A sum included in the contract and so designated for the execution of works or the supply of goods, materials, plant or services, or for contingencies, which sum may be used in whole or in part, or not at all, as instructed by the Engineer.

**Site:** The places provided by the Contracting Authority where the works are to be carried out and other places stated in the contract as forming part of the site.

**Special conditions:** The special conditions laid down by the Contracting Authority as an integral part of the tender document, amplifying and supplementing the general conditions, clauses specific to the contract and the terms of reference (for a service contract) or technical specifications (for a supply or works contract).

**Supervisor/Engineer:** The legal or natural person responsible for administering the contract on behalf of the Contracting Authority.

**Tender document/s:** The dossier compiled by the Contracting Authority and containing all the documents needed to prepare and submit a tender.

**Tender price:** The sum stated by the tenderer in his tender for carrying out the contract.

**Works:** Works of a permanent or temporary nature executed under the contract.

**Written communications:** Certificates, notices, orders and instructions issued in writing under the contract.

## VOLUME 1 SECTION 6 - EXTRACTS FROM THE PUBLIC PROCUREMENT REGULATIONS

### **Part II - Rules governing public contracts whose value does not exceed one hundred and twenty thousand euro (€120,000)**

The procedure for the submission of separate packages in the tender offer is stipulated in Part II of the Public Procurement Regulations (Legal Notice 296/2010), reproduced hereunder for ease of reference.

21 (1) Where the estimated value of the public contract exceeds twelve thousand euro (€12,000) and is issued by an authority listed in Schedule 1, any tenderer or candidate concerned shall have a right to make a complaint to the Review Board in accordance with this regulation.

(2) (a) The contracting authority shall be obliged to issue a notice and affix an advertisement, in a prominent place at its premises, indicating the awarded public contract, the financial aspect of the award and the name of the successful tenderer. The contracting authority shall, by electronic means or by fax, inform the tenderer or candidate concerned of the publication of the award. The contracting authority shall be precluded from concluding the contract during the period allowed for the submission of appeals.

(b) The award process shall be completely suspended if an appeal is eventually submitted.

(3) Any tenderer or candidate concerned who is aggrieved by the award indicated by the contract authority may, within five working days from the publication of the notice, file a letter of objection, together with a deposit, with the contracting authority, clearly setting forth any reason for his complaint. The deposit to be paid in respect of tenders valued at less than forty-seven thousand euro (€47,000) shall be four hundred euro (€400), while those between forty-seven thousand euro (€47,000) and one hundred and twenty thousand euro (€120,000) shall be 0.5% of the estimated value of the tender, with a minimum deposit of four hundred euro (€400). The letter by the complaining tenderer shall be affixed on the notice board of the contracting authority and shall be brought to the attention of the recommended tenderer.

(4) After the expiry of the period allowed for the submission of a complaint, the contracting authority shall deliver the letter of complaint, the deposit receipt and all documents relating to the public contract in question to the Review Board who shall examine the matter in a fair and equitable manner. In its deliberation the Review Board shall have the authority to obtain, in any manner it deems appropriate, any other information not already provided by the contracting authority. The Review Board shall determine the complaint by upholding or rejecting it. The written decision of the Review Board shall be affixed on the notice board of the contracting authority and copies thereof shall be forwarded to the Director of Contracts and all the parties involved.

(5) The tenderer or candidate concerned who is not satisfied with the decision granted by the Review Board may refer the matter to the Court of Appeal (Inferior Jurisdiction) in terms of article 41(6) of the Code of Organization and Civil Procedure within a period of sixty days. Such recourse however may not delay the Head of the contracting authority from implementing the Review Board's decision.

(6) Tender documents issued in terms of this Part shall include a clause informing tenderers that the award of the contract is subject to the right of recourse as provided for in this regulation, a copy of which should be reproduced in the documents.

(7) The Minister shall have the authority by order to extend the provisions of this regulation in order that recourse as provided in this regulation be made available also by authorities listed in Schedule 3 and to prescribe the procedure by which such recourse is to be granted.

## VOLUME 1 SECTION 7 - QUESTIONNAIRE

### Form 1 - Power of Attorney

Please attach here the power of attorney empowering the signatory of the tender and all related documentation as per clause 5.3 of Volume 1, Section 1 - Instructions to Tenderer.

Signature: .....  
(the person or persons authorised to sign on behalf of the tenderer)

Date: .....

**Form 2 - Data on Joint Venture/Consortium**

(Where applicable)

1 Name .....

2 Managing Board's Contact Address:.....  
 Details .....  
 Telephone:.....Fax.....  
 Email:.....

3 Agency in the state of the Address:.....  
 Contracting Authority, if any (in .....  
 the case of a Joint Telephone:.....Fax.....  
 Venture/Consortium with a Email:.....  
 foreign lead partner)

4 Names of Partners (i).....  
 (ii).....  
 (iii).....

5 Name of Lead Partner .....

6 Agreement governing the formation of the Joint Venture/Consortium  
 (Enclose Joint venture/Consortium Agreement)  
**Place of Signature:** **Date of Signature:**  
 ..... .....

Signature: .....  
 (the person or persons authorised to sign on behalf of the tenderer)

Date: .....

**Form 4 - List of Trained Personnel**

Please indicate the key personnel trained in installation of photovoltaic systems which will be involved in this Project.

| Name and Surname | Designation | Qualifications | Employed from | Years of Experience |
|------------------|-------------|----------------|---------------|---------------------|
|                  |             |                |               |                     |
|                  |             |                |               |                     |
|                  |             |                |               |                     |
|                  |             |                |               |                     |
|                  |             |                |               |                     |

Signature: .....  
 (the person or persons authorised to sign on behalf of the tenderer)

Date: .....

**Form 5- List of Recommended Spare Parts/Consumables/Accessories**

**No information of a financial nature is to be submitted with this Form. Such information is to be included in the Financial Offer.**

Please indicate the spare parts recommended by the manufacturer of the deemed as absolutely essential for the proper operation of equipment for a period of [...] years after the end of the warranty period.

Please list the consumables deemed as absolutely essential for the proper operation of equipment for a period of [...] years.

Please indicate and describe any accessories not included with the tender submission.

Signature: .....  
(the person or persons authorised to sign on behalf of the tenderer)

Date: .....

**Form 6 - After-Sales Services Proposal**

**No information of a financial nature is to be submitted with this Form. Such information is to be included in the Financial Offer.**

Please describe in detail the After-Sales Services Proposal.

Signature: .....  
(the person or persons authorised to sign on behalf of the tenderer)

Date: .....



**Form 7 - Training Proposal**

**No information of a financial nature is to be submitted with this Form. Such information is to be included in the Financial Offer.**

Please indicate the Training Proposal.

Signature: .....  
(the person or persons authorised to sign on behalf of the tenderer)

Date: .....

**VOLUME 2 VOLUME 2 SECTION 1 - DRAFT CONTRACT FORM**

Financed by:

The project is co-financed by the European Union and the Government of Malta, in accordance with the rules of the: European Structural Investment funds 2014-2020 “Fostering a competitive and sustainable economy to meet our challenges, European Regional Development Fund (ERDF). The co-financing rate is: 80% EU funds; 20% National Funds.

Project: ERDF .PA4.0108 Malta Red Cross Solar Panels

Contract Number:

This contract is concluded between:

Malta Red Cross Society,  
104, St. Ursula Street,  
Valletta, VLT1234  
MALTA

(hereinafter called “The Contracting Authority”) on the one part, and

[Name of Contractor]

[Address]

(hereinafter called “The Contractor”) on the other part,

Whereas the Contracting Authority is desirous that certain supplies should be [supplied, manufactured, delivered, installed, commissioned, maintained, etc.] by the Contractor, viz.:

[Contract Title]

and has accepted a tender by the Contractor for the provision of such supplies and the remedying of any defects therein.

It is hereby agreed as follows:

1. In this contract words and expressions shall have the meanings assigned to them in the contractual conditions set out below.
2. The place of acceptance of the supplies shall be [.....], the time limits for delivery shall be [.....], and the INCOTERM2000 applicable shall be delivery duty paid (DDP).
3. The following documents shall be deemed to form and be read and construed as part of this contract, in the following order of precedence:
  - (a) this contract,
  - (b) the Special Conditions,
  - (c) the General Conditions,
  - (d) the technical specifications and design documentation,
  - (e) the Contractor’s technical offer (including any clarifications made during adjudication),
  - (f) the financial offer (after arithmetical corrections)/breakdown,
  - (g) the tender form,

(h) any other documents forming part of the contract.

Addenda shall have the order of precedence of the document they are modifying.

4. In consideration of the payments to be made by the Contracting Authority to the Contractor as hereinafter mentioned, the Contractor undertakes to deliver all supplies, and remedy defects therein in full compliance with the provisions of the contract.

5. The Contracting Authority hereby agrees to pay the Contractor in consideration of the execution and completion of the works and remedying of defects therein the amount of:

- Contract price (including VAT/other taxes): €.....
- Contract price in words:..... Euro

or such other sum as may become payable under the provisions of the contract at the times and in the manner prescribed by the contract. VAT shall be paid in compliance with National Law (in particular the VAT Act 1998, the Act No X of 2003 and relevant Legal Notices).

6. The Contractor hereby agrees to submit a performance guarantee amounting to €..... equivalent to 10% of the contract value together with the signed contract.

7. The provisions of this contract are without prejudice to the obligations of the Contracting Authority in terms of the Freedom of Information Act (Cap. 496 of the Laws of Malta). The Contracting Authority, prior to disclosure of any information to a third party in relation to any provisions of this contract which have not yet been made public, shall consult the contractor in accordance with the provisions of the said Act, pertinent subsidiary legislation and the Code of Practice issued pursuant to the Act. Such consultation shall in no way prejudice the obligations of the Contracting Authority in terms of the Act.

8. In witness whereof the parties hereto have signed the contract. This contract shall take effect on the date on which it is signed by the last party.

Done in English in three originals: one for the Contracting Authority, one for the Contracting Authority, and one for the Contractor.

**Contracting Authority:**

**Contractor:**

Signed by:

Signed by:

.....

.....

In the capacity of:

In the capacity of:

.....

.....

Being fully authorized by and acting on behalf of:

Being fully authorized by and acting on behalf of:

.....

.....

Date: .....

Date: .....

## VOLUME 2 SECTION 2 - GENERAL CONDITIONS

The full set of General Conditions for Supply Contracts (Version 1.02 dated 1 December 2011) can be viewed/downloaded from:

[www.contracts.gov.mt/conditions](http://www.contracts.gov.mt/conditions)

It is hereby construed that the tenderers have availed themselves of these general conditions, and have read and accepted in full and without reservation the conditions outlined therein, and are therefore waiving any standard terms and conditions which they may have.

These general conditions will form an integral part of the contract that will be signed with the successful tenderer/s.

## 2 SECTION 3 - SPECIAL CONDITIONS

These conditions amplify and supplement, if necessary, the General Conditions governing the contract. Unless the Special Conditions provide otherwise, those General Conditions remain fully applicable. The numbering of the Articles of the Special Conditions is not consecutive but follows the numbering of the Articles of the General Conditions. Other Special Conditions should be indicated afterwards.

### Article 2: Law Applicable

2.1 The laws of Malta shall apply in all matters not covered by the provisions of the contract.

2.2 The language used shall be English.

### Article 4: Communications

Communications shall be made in writing by registered mail to the Malta Red Cross Base of Operations, Gioacchino Le Brun Street, Pembroke, PBK 1710, Malta OR by email to [admin.ops@redcross.org.mt](mailto:admin.ops@redcross.org.mt).

### Article 7: Supply of Documents

The contractor shall operate in accordance with the instructions contained within this tender document and as directed by the contracting authority's engineers.

### Article 8: Assistance with Local Regulations

The contractor shall at all time work in line with prevailing local regulations.

### Article 9: The Contractor's Obligations

9.6 The contractor shall follow all visibility/publicity requirements vis-à-vis European Union financing/co-financing

## **Article 11: Performance Guarantee**

11.1 The Contractor shall, within 15 days of receipt of the contract for signature, furnish the Contracting Authority with a guarantee for the full and proper performance of the contract. The amount of the guarantee shall be 10% of the amount of the contract price, including any amounts stipulated in addenda to the contract. In the case that the value of the contract does not exceed €10,000, no performance guarantee is required.

11.3 The performance guarantee shall be in the format given in Volume 2, Section 4 and shall be provided in the form of a bank guarantee.

11.7 5% of the contract value will be retained and released after twelve calendar months after the system has been certified by the project engineer as operating satisfactorily. In this respect a retention guarantee shall apply.

## **Article 12: Insurance**

12.1 The successful Tenderer shall within one week from receiving the Letter of Acceptance furnish the client evidence of an Insurance Policy covering the following:

(i) Insurance against Accident to Workmen:

Such insurance shall be maintained during the whole of the time that any persons are employed by the contractor on the works. Provided that, in respect of any persons employed by any Sub-Contractor, the Contractors obligations to insure under this sub clause shall be satisfied if the Sub-Contractor shall have insured against the liability in respect of such persons.

(ii) Insurance against Damage to person and property: indemnifying the Employer against all losses and claims in respect of death of or injury to any person, or loss of or damage to any property (other than the works) which may arise out of or in consequence of the execution and completion of the works, and against all claims, proceedings, damages, costs, charges and expenses whatsoever in relation to the works.

(iii) Third Party Liability Insurance : against liabilities for death of or injury to any person, or loss of or damage to any property (other than the works) arising out of the performance of the Contract.

Failure of the successful Tenderer to comply with these requirements shall constitute sufficient grounds for the annulment of the Award.

The minimum accepted insurance liability will be of €500,000.

## **Article 13: Performance Programme (Timetable)**

The project shall be completed by the 30<sup>th</sup> of June, 2020.

**Article 14: Contractor's Drawings**

14.1 The contractor shall provide a layout of the proposed system within one week from signing of contract.

14.7 All documentation shall be in English.

**Article 18: Commencement Order**

18.1 The commencement date shall be the date of signing of contract.

**Article 21: Delays in Execution**

21.1 Should the contractor not complete the works by the 30<sup>th</sup> of June, 2020 a daily penalty of €200.00 shall apply, including non-working days.

**Article 24: Quality of Supplies**

24.2 As per technical Specifications

**Article 25: Inspection and Testing**

25.2 As per technical Specifications.

**Article 26: Methods of Payment**

26.1 Payments will be made in Euro.

26.3 Payment will be made within 30 days from certification of works by the project engineer and presentation of invoice by the supplier.

26.5 95% Upon completion of works and testing and after certification by the project engineer.  
5% Will be retained and released after twelve calendar months after the system has been certified by the project engineer as operating satisfactorily. In this respect a [retention guarantee] shall apply.

**Article 28: Delayed Payments**

28.1 The Contracting Authority shall pay the Contractor sums due within 60 days of the date on which an admissible payment is registered, in accordance with Article 26 of these General Conditions. This period shall begin to run from the approval of these documents by the competent department referred to in Article 26.1 of the Special Conditions. These documents shall be approved either expressly or tacitly, in the absence of any written reaction in the 60 days following their receipt accompanied by the requisite documents.

28.2 Once the deadline laid down in Article 28.1 has expired: the Contractor may, within two months of late payment, claim late-payment interest at the rediscount rate applied by the issuing institution of the country of the Contracting Authority on the first day of the month in which the deadline expired,

plus seven percentage points. The late-payment interest shall apply to the time which elapses between the date of the payment's deadline (exclusive) and the date on which the Contracting Authority's account is debited (inclusive).

### **Article 29: Delivery**

29.1 The Contractor shall bear all risks relating to the goods until provisional acceptance at destination. The supplies shall be packaged so as to prevent their damage or deterioration in transit to their destination.

29.3 The packaging shall remain the property of the Contractor subject to respect for the environment.

### **Article 31: Provisional Acceptance**

The contractor shall bear sole responsibility for the goods until the goods have been delivered and accepted by the contracting authority. The contractor shall also ensure that the goods are adequately packaged and that any disposal of materials is affected in accordance to prevailing environmental legislation.

### **Article 32: Warranty**

32.1 Warranty shall become into effect upon certification of works by the project engineer and shall cover the following:

The inverters shall be fully guaranteed by the manufacturer for the first five (5) years after the commissioning date. This shall be backed up by the manufacturer. In case of any faults, the inverter shall be repaired or replaced by the contractor within two (2) weeks following the fault registration.

The inverters shall be installed in close proximity of the photovoltaic modules and covered by a galvanized steel canopy for protection from the weather elements.

The photovoltaic modules shall be fully guaranteed for the first five (5) years against any product defect as per standard EU regulations. On the other hand, the modules shall be guaranteed by the manufacturer for not less than 90% of the original energy conversion efficiency up to the first ten years of operation and not less than 80% of the original energy conversion efficiency for the following fifteen (15) years, all at STC conditions [Standard Test Conditions].

The supporting structure shall be manufactured from anodized aluminium sections specifically designed for photovoltaic modules and shall conform to TUV TZE/257210 or equivalent. The structure shall be certified to be maintenance free and guaranteed for a minimum lifetime of 25 years. This shall also apply for the fixings used. The supporting structure shall be installed in accordance with the guidance provided by the module manufacturer.

### **Article 35: Breach of Contract**

35.3 Without prejudice to the Contracting Authority's right to dissolve 'ipso jure' the contract in the case of infringement of any condition thereunder and apart from the deduction established for delay in delivery, any such infringement shall render the contractor, in each case, liable to a deduction by way of damages of 5 per cent of the value of the contract, unless the Government elects, with regard



to each particular infringement, but not necessarily with regard to all infringements, to claim actual damages incurred.

#### **Article 41: Dispute Settlement by Litigation**

Any dispute between the Parties that may arise during the performance of this contract and that has not been possible to settle otherwise between the Parties shall be submitted to the arbitration of the Malta Arbitration Centre in accordance with the Arbitration Act (Chapter 387) of the Laws of Malta. This law is based on “Model Law” which is the Model Law on International Commercial Arbitration adopted on June 21, 1985 by the United Nations Commission on International Trade Law reproduced in the First Schedule of the Arbitration Act.

## VOLUME 2 SECTION 4 - SPECIMEN PERFORMANCE GUARANTEE

(LETTERHEAD OF THE REGISTERED FINANCIAL INSTITUTION PROVIDING THE GUARANTEE)

Malta Red Cross Society,  
104, St. Ursula Street,  
Valletta, VLT 1234,  
MALTA

[Date]

Dear Sir,

Our Guarantee Number ..... for €.....

Account: [Account Holder’s Name]

In connection with the contract entered into between yourself on behalf of the Director of Contracts and [Name and Address of Contractor] hereinafter referred to as “the Contractor” as per the latter’s tender and your acceptance under [CT File Reference], whereby the contractor undertook the [title of contract] in accordance with Article 11 of the Special Conditions the [works/services/supplies] as mentioned, enumerated or referred to in the Specification and/or Bills of Quantities forming part of the contract documents, we hereby guarantee to pay you on demand a maximum sum of €[amount in words and numbers] in case the obligations of the abovementioned contract are not duly performed by the Contractor.

This guarantee will become payable on your first demand and it shall not be incumbent upon us to verify whether such demand is justified.

For avoidance of doubt it is hereby declared that although this instrument gives rise to legal relations between the guarantor and the beneficiary, it is hereby specifically declared for all intents and purposes of law that this guarantee does not exempt the above-mentioned Contractor from any obligations, acts of performance or undertaking assumed under the tender documents as ratified in the contract.

Any payments due to the contractor in respect of the obligations entered into under the contract above referred to shall be made through this Bank.

This guarantee expires on the [expiry date] and unless it is extended by us or returned to us for cancellation before that date any demand made by you for payment must be received in writing not later than the aforementioned expiry date.

This document should be returned to us on utilization or expiry or in the event of the guarantee being no longer required.

After the expiry date and in the absence of a written demand being received by us before such expiry date, this guarantee shall be null and void, whether returned to us or not, and our liability hereunder shall terminate.

This guarantee is personal to you, and is not transferable or assignable.

Yours Faithfully,

.....  
[Signatory on behalf of Guarantor]

## VOLUME 2 SECTION 6 - SPECIMEN RETENTION GUARANTEE

(LETTERHEAD OF THE REGISTERED FINANCIAL INSTITUTION PROVIDING THE GUARANTEE)

Malta Red Cross Society  
104, St. Ursula Street,  
Valletta, VLT 1234  
MALTA

[Date]

[Tender Reference]

Dear Sir,

We, the undersigned, [name, company name, address], hereby declare that we will guarantee, as principal debtor, to [Contracting Authority's name and address] on behalf of [Contractor's name and address], the payment of [indicate the amount], corresponding to the guarantee mentioned in Article 26.5 of the Special Conditions without dispute, on receipt of a first written request from the beneficiary.

We further agree that no change or addition to or other modification of the terms of the contract or of the works to be performed thereunder or of any of the contract documents which may be made between you and the Contractor shall in any way release us from any liability under this guarantee. We hereby waive notice of any such change, addition or modification.

The guarantee will enter into force and take effect from the [indicate the date of payment of the sums retained under the contract] and shall be valid until the date of issue of the certificate of final acceptance.

We note that you will release the guarantee and notify us of the fact at the latest within thirty days of the date of issue of this certificate.

Done at ....., ..../..

Name and first name: ..... On behalf of: .....

Signature: .....

[stamp of the body providing the guarantee]

## VOLUME 3 - TECHNICAL SPECIFICATIONS

*Part 1 - To be specified by the Contracting Authority in the tender document*

**Note: Where in this tender document a standard is quoted, it is to be understood that the Contracting Authority will accept equivalent standards. However, it will be the responsibility of the respective bidders to prove that the standards they quoted are equivalent to the standards requested by the Contracting Authority.**

## ***Part 2 - The Contractor's Technical Offer***

# **SPECIFICATION FOR THE INSTALLATION OF ELECTRICAL SERVICES**

## **1.1 PREAMBLE TO THE SPECIFICATION**

1.1.1 The scope of the project covers works on PV Systems at the Malta Red Cross Base of Operation and includes for the supply, delivery and installation of PV arrays, structural supports, inverters, interconnecting cables, switchgear, lightning protection systems etc. complete with all materials and labour necessary for a complete installation. The contractor shall also connect the systems to the main grid, test and commission the systems such that they meet all relevant regulations and requirements.

1.1.2 This specification shall be read in conjunction with the General Conditions of Contract, the Drawings issued to date and any others which may become necessary from time to time at the discretion of the Engineer in charge, and also with the Schedule of Prices, which all together form the Contract Documents.

1.1.3 The work shall be completed by the contractor to the full satisfaction of the Engineer in charge and the contractor shall be responsible for the satisfactory performance of the service in accordance with the spirit of the design and specifications.

1.1.4 The contractor shall use the services of a structural engineer to design and take responsibility for the support structures on the indicated roofs as per bills of quantities. The fees payable to the structural engineer shall be borne by the contractor and these are deemed to have been included in the quoted rates.

1.1.5 The contractor shall prepare such installation diagrams, wiring drawings and schematics as may be necessary in the Engineer's opinion. These shall be submitted to the engineer for approval before execution of the work.

1.1.6 The contractor shall keep such records as necessary, in order to be able to complete the as-fitted drawings upon completion of the works.

1.1.7 The whole works shall be scheduled by the contractor on site by consulting the engineer and client's requirements. The contractor is responsible for preparing an overall works programme which shall require the approval of the engineer and client. The contractor shall bind himself to liaise, furnish the appropriate information relating to the methodology of installation, provide technical advice/assistance and co-ordinate with the engineer and client during the course of the project.

1.1.8 The contractor is to submit technical literature covering all key components of the system being proposed. The technical submittal by itself does not confirm or otherwise that any change in specification has been accepted. All changes from the specifications have to be accepted in writing by the Engineers and Client.

1.1.9 The Malta Red Cross Base of Operations shall continue with the daily operations / activities and also other works during the same time that work is in hand by the contractor and consequently, the contractor shall have no authority to hold up such activities and works

## 1.2 WORKMANSHIP

1.2.1 THE WORKS SHALL COMPLY WITH THE LATEST EDITION OF THE REGULATIONS OF THE BRITISH INSTITUTION OF ELECTRICAL ENGINEERS, including all amendments to date, and the MRA / ENEMALTA ELECTRICITY SUPPLY REGULATIONS, Codes of Practice, and normal safety regulations and to the satisfaction of the Engineer.

1.2.2 All workmanship shall be of best quality and in accordance with the above. The Contractor shall guarantee that spare parts for any Equivalent supplied are obtainable in Malta.

1.2.3 The electricity supply at terminals shall be 3-Phase 4 wire, 400/230 Volts, 50 cycles earthed neutral.

### 1.2.4 Installation

All cable tray routes shall be approved by the Engineer prior to taking works in hand.

### 1.2.5 Builder's Work

The tenderer is to allow in the rates quoted, for all chasing, holes in RC or structural members, (all holes shall be made only under approval of the Structural Engineer in charge and by means of circular diamond tipped tools), pipe sleeves (made to approval) etc. necessary for the proper execution of the works. The architect in charge shall approve all structural openings before taking the works in hand.

The contractor shall also be responsible for the backfilling of all holes with Sand / Cement mortar for all openings in walls / structures done by himself or for other openings done by others but which are used for the passing of services to make sure their fire integrity. Non-flammable expandable foam of the proper rating and quality as approved by the engineer shall be acceptable for the filling of small holes.

In all cases the works shall be carried out in such a way such that the waterproofing integrity of the building shall be retained.

### 1.2.6 Wiring

The installation shall be wired with cables having conductors not less than 2.5 sq. mm. Single strand conductors shall not be allowed.

With the exception of final sub-circuits, all cable terminations shall be of the soldered or crimped socket type terminal. Ferrules shall be used to terminate multi strand cables.

Loop connections shall only be made at the terminals of accessories or fittings. No joints in cables shall be made except with the written authority of the Engineer.

The number of cables in any conduit shall conform to the limit set by the above-mentioned IET Regulations.

All cables shall be colour coded throughout for identification: Brown, Grey, Black for the Phase conductors, Blue for Neutral, and Green/Yellow for Earth.

The contractor shall terminate the wiring in the fitting, accessory and/or equipment as specified in the drawings, etc.

Cables for individual circuits inside trunking shall be grouped together and marked with circuit number at terminations.

All cables including single cores, armoured cables and control cabling shall be of the Low Smoke and Zero Halogen type.

#### 1.2.7 Earthing

All Earthing installation shall be carried out in accordance with the IET Regulations.

Where required, the main Earth conductor shall be earthed with the Earth Mat and if supplied, with the Earth termination supplied by ENEMALTA in the metering room.

The maximum earth loop impedance of the earth mat shall be 0.10 Ohms.

All trunking is to be separately earthed and earth clips shall be used to bridge different sections of the trunking.

#### 1.2.8 Positioning

All fixture items shall be positioned as per drawings or as instructed by the Engineer.

#### 1.2.9 Markings

All switchgear and distribution boards shall be permanently marked with the voltage and current rating.

Labels indicating the services controlled by the switchgear and distribution boards shall be prepared and fixed on the outside of the appliances as directed.

In addition to the above, each distribution board shall have a list of all the equipment names and locations supplied.

#### 1.2.10 Origin of Installation

The installation shall originate from the main distribution board and all connections shall be the responsibility of the contractor and shall be duly allowed for.

The contractor shall be required to provide for a new distribution board installation where space is limited or where a connection to the main grid is still not in place.

#### 1.2.11 Uniformity

All materials used under this contract shall be of uniform design throughout. Samples shall be presented at tendering stage for approval.

#### 1.2.12 Testing

The contractor shall provide all the necessary labour and testing instruments for the tests prescribed in the above-mentioned regulations. Approval of works shall only be granted following satisfactory passing of these tests.

The test results shall be recorded in triplicate and signed by the contractor's Engineer and shall be handed over to the Engineer in charge.

#### 1.2.13 Deviations

Any deviations shall be regulated by the General Conditions of Contract.

#### 1.2.14 Measurement

The works shall be measured as specified in the Bill of Quantities and certified by the Engineer in charge.

#### 1.2.15 General Conditions

The General Conditions of Contract shall apply in so far as they are not inconsistent with the above.

### 1.3 MATERIALS SPECIFICATIONS ~ Electrical Installation

#### 1.3.1 General

All materials to be used in this project are subject to approval by the Engineer in charge, upon presentation of the relevant technical literature and samples.

#### 1.3.2 Miniature Circuit Breakers

Miniature Circuit Breakers shall provide overcurrent and short circuit protection and shall comply with BS EN 60898 (IEC 898) and BS EN 60947. The MCBs shall be type 3 and shall be capable of dealing with fault currents of 6KA for MCBs up to 30Amp rating and 10KA for higher rated MCBs. They shall be Single Pole or Triple Pole as indicated on the schematic. They shall be easily mounted on DIN rail. The Voltage rating shall be 230/400 V, 50 Hz. The input terminals shall be suitable for 25 sq. mm cable and the output terminals for 16 sq. mm cable.

#### 1.3.3 RCBOs

RCBOs shall have the same specification, where applicable for MCBs, shall be of the single pole type except where otherwise indicated and shall have differential current protection apart from over current protection to the sensitivity as indicated on the drawings and shall comply to BS EN 61009.

#### 1.3.4 Glands

Glands for XLPE SWA PVC / XLPE SWA LSZH cable shall be heavy duty indoor /outdoor type, in brass or gunmetal with suitable armour clamps and earthing provision.

#### 1.3.5 Distribution Boxes

All distribution boards shall be TPN and of the specified rating and shall have sheet steel construction with hinged doors. They shall be suited to take the cables specified and the necessary conduits. Miniature Circuit Breakers are to be fitted to all boards, arranged so as to facilitate wiring. RCBOs shall be used where indicated.



The boards shall allow for the positive isolation of the final sub-circuits. The MCB's shall be of the screwed contact on busbar type.

Before ordering the equipment and switchgear, the contractor is to check with the Engineer as to whether flush or surface mounting is to be used.

The operating characteristics of the boards shall be such that the breaker will operate after not less than two minutes with sustained 25% overload. Tripping shall also occur in less than half minute in case of 200% overload, and in less than one second with 800% overload. Operation shall be of the flip-on type.

The distribution shall have factory prepared punch-outs for both the main incomer isolator as well as the RCD's. Distribution boards with punch out effected locally shall not be acceptable. RCDs shall comply with BS EN 61008.

Where applicable, the distribution box shall be supplied c/w contactor extension box as well as all contactors as indicated in the drawings.

All distribution boards located outdoors shall have an IP65 protection rating.

#### 1.3.6 Cable

XLPE, SWA, LSZH Cable

Armoured cables are to be with shaped or round copper conductors to BS EN 60228 and XLPE insulated to BS 7655, with LSZH bedding to BS 7655, single wire armoured and LSZH sheathed overall complying with BS 6724.

DC PV Solar Cable (H1Z2Z2-K)

These cables shall be dedicated to the photovoltaic system direct current (D.C.) side with a nominal D.C. voltage of 1.5 kV and a maximum D.C. voltage of 1.8 kV. These cables shall be suitable for permanent outdoor long-term use, under variable and harsh climate conditions. They shall be designed and tested to operate at a normal maximum conductor temperature of 90°C, ozone and UV resistant to BS EN 50396, and tested to EN 60216.

Conductor flexibility Flexible class 5

Halogen free IEC 60754-1/IEC 60754-2

Conductor material Tin Coated Copper Class 5 acc. To EN 60228

Insulation Cross-linked (XL) HFFR acc. to EN 60811 and EN 60216-1-2

Outer sheath Cross-linked (XL) HFFR acc. to EN 60811 and EN 60216-1-2

#### 1.3.7 Galvanised Cable tray

The galvanised cable tray shall be manufactured, from hot dipped galvanised sheet steel complying with BS EN 10346, and manufactured to BS EN 50085. The thickness of the sheet shall be such that there is no sagging of the trunking with the load of the cables. If in the opinion of the Engineer the trunking deforms with the weight of the cable the contractor shall be requested to remove the said cable tray and replace it. Where necessary the cable tray shall be supplied

complete with a clip on cover of the same material quality and thickness of the main tray. No self-tapping screws shall be used to hold the cover but if necessary plastic ties shall be used.

Note that all changes in direction are to be made using factory made long sweep fittings. No locally manufactured elbows, tees etc. shall be accepted.

Suitable cable trays shall be installed to carry the supply cables to the various Distribution Boards.

All installations are to be complete with all necessary earth clips for a complete installation.

#### 1.3.8 Brackets

All cable trays, cable trunking and the like, shall be supported at spacing of not more than 1.5 meters apart and at all changes in direction. Hangers, brackets and supports shall be of the pre-galvanised type with factory made fittings. No local manufactured brackets cut and welded on site shall be accepted.

#### 1.3.9 IP65 Connection boxes

These boxes shall be used externally for looping of the armoured cable feeding the low - level lighting and any other lighting or general power circuits. These shall be of polycarbonate construction with an IP65 rating and shall be complete with a DIN rail and grip connectors.

#### 1.3.10 Digital multifunction meter

The energy meters shall be of the digital type and shall include the following minimum reading:

- Line Voltage
- Phase voltage
- Current
- Frequency
- KVA
- KVAR
- KW
- KWhr
- KVAh
- Power Factor

The meters shall have an accuracy of  $\pm 0.5\%$

#### 1.3.11 Structural supports

The contractor shall include for all structural supports including beams, bracings etc for a complete system. The structural support shall give an inclination to the PV modules as is indicated

in the design drawings. The contractor shall make sure that the installation is seamless with the PV modules such that no structural protrusion influences the design intent by causing additional shading. All structural elements shall be certified by a Warranted Structural Engineer.

The PV modules are positioned in such a way that no one module shades another to a level which is deemed acceptable. The contractor shall ensure the setting out of panels on site reflects the engineer's design and is required to consult the site engineer for further instructions where restrictions are encountered.

The contractors are invited to visit the site in order to ensure that all material, labour etc are included in the tendered price. In all cases, structural supports shall have a grade of steel of S275. All metal work should be galvanized, and protective coat of paint applied. Any making good should be included if beams are penetrated and / or welded to ensure corrosion protection of the overall installation is retained.

### 1.3.12 Isolation of different metals

The Contractor shall make sure different types of metals are isolated from one another to ensure full protection from galvanic corrosion. Where this inclined structure is to be installed onto a separate metal structure, the contractor shall ensure a secure connection is made that keeps galvanic corrosion protection in mind. Details of connections are to be submitted for the approval by the engineer.

### 1.3.13 Surge Protection Devices

#### 1.3.13.1 General

Electrical AC power line surge protection devices shall be installed at the point of cable entry to the building to form part of a complete protected system. This refers to entry from grid systems or from alternative on site generation equipment. The surge protection equipment shall be as per BS EN 62305-4. The SPD shall provide:

- Surge Test Waveform - 10/350 $\mu$ s
- Peak Test Current - 25kA per phase, of surge protection
- Protection modes: L-N, L-G, L-L, and N-G
- One Power Present LED, one Protection reduced LED per phase on front panel, One site fault indicator LED
- The SPD shall also have a remote indication facility
- Volt-free contact to enable the protector to be used to warn of phase loss.
- Ten Year warranty on the SPD
- Three way visual indication of protection status, with pre-failure indication
- IP 65 housing
- Compact and robust material
- The SPD shall also have DIN rail mounting possibility

The SPD shall be able to provide protection against both the effects of direct lightning strikes (high-energy) and indirect lightning strikes. Direct lightning strikes shall be protected by lightning current or equipotential bonding SPD's, while indirect strikes and switching transients shall be protected by transient overvoltage.

The SPD shall not disrupt normal operation of mains power supply through the creation of follow current or high leakage currents. The SPD shall be able to withstand repeated transients. The SPD shall also have a low let through voltage between every pair of conductors. The SPD shall be suitable to handle partial lightning currents as well as allowing continual operation of protected equipment.

#### 1.3.13.2 Standards

The specified surge suppression shall be designed, manufactured, tested and installed in compliance with BS EN 62305-4

#### 1.3.13.3 Environmental Requirements

The surge suppressor shall be suitable to operate in a temperature range of -40 to +70 degrees C, and shall be suitable for a storage temperature of -40 to +85 degrees C. It shall be suitable to operate reliably in a relatively humid environment, and shall have a maximum continuous operating voltage of no less than 125% of the nominal rated line voltage, and have an operating frequency of 50Hz.

#### 1.3.14 Electrical Requirements

The voltage rating shall be 415 V rms. The maximum surge current handling (10/350 $\mu$ s) shall be 25kA per phase. The SPD response time shall be less than 10ns and shall have a backup fuse of not more than 125 A rating.

The following shall be the operating voltage range: L-N 200-300Vrms

L-L 350-450Vrms

The leakage current to earth shall be less than 250 $\mu$ A, while the indicator circuit current

The nominal discharge current 8/20 $\mu$ s per phase of the specified system, based on the standard BS EN 62305 shall be of approximately 20kA, while the let through voltage shall be less than 900V. The impulse discharge current 10/350 $\mu$ s per phase shall be approximately 4kA and the let through voltage shall be less than 750V.

The transient suppression capability shall be bi-directional and suppress both positive and negative impulses. The suppressor shall also contain a common mode noise filter.

The unit shall be installed in parallel with the protected equipment. No series connected protective elements shall be used.

#### 1.3.14.1 Installation

The unit shall be installed in accordance with the manufacturer's printed instruction to maintain warranty. All local Enemalta regulations shall be adhered to and observed. The manufacturer shall also supply a warranty of at least 10 years. SPD's shall be installed as close as possible to the power supply being protected and enclosed in an IP65 enclosure. Connections between the SPD and supply lines (inc. phase, neutral and earth) shall be kept as short as possible (not more than

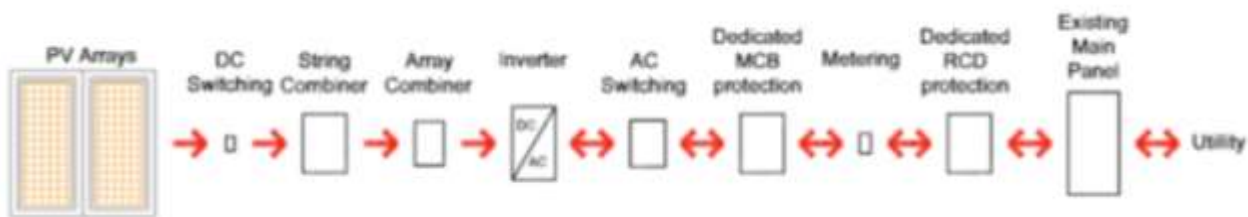
50cm). The phase/live connection leads shall also be suitably fused using MCB's/MCCB's for isolation purposes. The installations shall also be as close as possible to the system's earth cabling. Cables connecting the clean end cables shall not be installed or routed next to incoming lines (dirty lines) or the SPD's earth bond. The surge protection equipment shall be enclosed in an enclosure made from a robust and rigid material and shall be complete with mounting flanges or brackets as may be required.

## 2 SPECIFICATION - Photovoltaic System

### 2.1 General

The photovoltaic (PV) system shall consist of a number of PV arrays which shall supply power into the national grid when it exceeds the demand of the infrastructure being supplied. The system shall be complete with PV panels, suitable framework structure, civil and structure foundation works, isolators and DC/AC inverter, distribution board connecting the various inverters, etc. as shown in the diagram below.

Where more than one inverter is required, a distribution board connecting the various inverters is to be included.



The system proposed shall be supplied complete with main circuit breakers and protection for a complete system. The system shall also be supplied complete with the installation of all power cables between the PV panels and the inverter, and between the inverter to the main distribution box. The cable between the PV panels and the inverter shall be of the solar cable type, and shall be suitable for use with high-voltage DC. All outdoor cables shall be installed on suitable brackets/ cable trays and shall also be UV protected. They shall also be suitably covered with a weatherproof coating. The final installed system shall be certified by a warranted Electrical Engineer.

The system shall include isolators for each string of PV's and isolators between the inverter and the main distribution box. The contractor shall also install suitable electric kWhr meters to be used for data logging.

The system shall be supplied complete with all technical documentation necessary for a complete system. Full technical documentation shall be submitted at tendering stage.

All application forms including those required for the obtaining of a no objection letter from Enemalta, for the processing of feed-in tariffs and grants addressed to Enemalta

Corporation/MRA as well as any PA approvals shall be taken care of by the contractor and any costs (including application fees) shall be deemed to be included in the quoted cost of the system.

## 2.2 PV Panels

The system shall consist of an array of poly / mono crystalline PV panels rated at a minimum of 340W at STC (Measurement conditions: 1000 W/m<sup>2</sup>; AM 1.5 global 25°C). The total system capacity shall be rated as indicated in the drawings and Bills of Quantities. The system shall be capable of producing a minimum of 1,600

kWhrs per kW peak annually. The minimum generating capability, based on the module inclination, shall be guaranteed by the contractor.

The panels shall be such that they shall fit on the roof as per the general arrangement shown in the drawing. The contractor shall be responsible for reviewing the site to confirm that the minimum annual generation specified can be achieved with the designed amount of modules.

The contractor shall also be responsible to check for any specialised brackets, supports etc. that may be required for a complete installation.

The system shall have a performance warranty over a 25 year period (no more than 10% drop in performance in the first 10 years and no more than 20% drop in performance after 25 years) and a minimum of 12 years of product guarantee from defects. The degradation over the years shall be linear.

It shall also be certified by IEC 61215 and safety tested under IEC 61730. The PV modules shall have a power output tolerance of +/- 3%.

The Photovoltaic modules shall have an instantaneous generation cell efficiency of at least 18%. The panels should also incorporate; a minimum of 3 bypass diodes, use of high quality long life encapsulates, have a hollow structure frame and have a rated P<sub>mpp</sub>, Power temperature coefficient shall not exceed -0.5%.

The panels shall be suitable for outdoor installation, and the entire system shall be made from a weatherproof / waterproof materials.

The configuration of the strings shall be such to ensure maximum efficiency as the sun's angle and orientation changes throughout the year. All connection shall be carried out using purpose designed connectors which shall ensure the water-tightness of the connection at all times.

Cable trays shall be installed to lay both the DC and AC cables as may be required. These shall be adequately earthed.

The maximum voltage drop at full power from the PV modules to the inverter shall be 1% or less whilst the A/C voltage drop shall be less than 4%.

### **2.3 Panel Level Optimisation**

The PV modules shall be equipped with individual power generation optimisers. These shall be of the Discrete DC Optimiser type. Smart panels pre-equipped with these optimisers from their manufacture shall be preferred. The Optimiser shall allow monitoring on an individual panel level and shall have be rated at a minimum efficiency of 98%.

These optimiser modules shall be manufactured to the following standards.

EMC Standard: IEC61000-6-2, IEC61000-6-3

Safety standard: IEC62109-1 (class II safety)

### **2.4 PV Module Mounting**

The system shall consist of inclined flat panels mounted on a suitable support framework, generally facing geographical south as indicated in the drawing. The panels shall be complete with a supporting structure as indicated.

The framework shall be constructed of a robust and rigid material, stainless steel 316L, or aluminium. All structures shall have a corrosion resistant exterior and be securely installed and properly sealed wherever necessary. The units shall be supplied complete with all necessary brackets etc. and detachable mountings for simplified mounting and removal. Dissimilar metals (such as steel and aluminum) should be isolated from one another. This should be done using non-conductive shims, washers, or any other methods. Only high-quality brackets and bolts shall be used and these shall be made from materials such as stainless steel. All materials in use shall be suitable for use in harsh corrosive environments in proximity to the sea and industrial areas. The lifetime of the structure shall be guaranteed for a period of at least 25 years.

The final assembly (PV modules, frames etc) shall be such that they may withstand a wind of Force 10. Certification of the above shall be required by a warranted structural engineer.

All metal support structures for the framework shall be earthed with yellow green PVC cable of a minimum CSA of 16mm<sup>2</sup>. The mounting shall also be maintenance free and be suitable to support high wind velocities.

The system shall be modular such that it shall be easy to increase the size of the system, hence increase the number of panels in the future.

All ballast used shall be of the shutter concrete block type. Franca stone shall not be acceptable.

## 2.5 Inverter

The inverter/s shall be of the single phase or three phase transformerless type depending on the design and capacity of the system. The inverter/s shall be capable of producing a pure sine wave and shall also have the following characteristics:

|                                                              |                                                                                                                         |
|--------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|
| PV Power                                                     | Total inverter rating shall be within +/- 5% the Nominal kW peak Power rating of the PV system.                         |
| Total Harmonic Distortion                                    | <4%                                                                                                                     |
| Operating Range Grid Voltage                                 | 230 / 400V (+/- 10%)                                                                                                    |
| Operating Range Grid Frequency                               | 49.8Hz – 50.2Hz                                                                                                         |
| Power Factor                                                 | 1                                                                                                                       |
| Efficiency                                                   | >97%                                                                                                                    |
| Ambient Working Temperature                                  | -25°C to 60°C                                                                                                           |
| Standards                                                    | CE Conforming<br>VDE Certified<br>EN 61000-3-2; EN61000-6-2; EN61000-6-3                                                |
| Rated for a max operational ambient air relative humidity of | 100%                                                                                                                    |
| Warranty Period                                              | 10 Years                                                                                                                |
| Data Logging                                                 | Minimum requirements are total generation from startup and per day (in kWh) and Instantaneous power generation readings |
| Minimum Protection level                                     | IP65                                                                                                                    |

The inverter shall also have:

- Wireless or RS 485 communication ports
- A modular structure in case that more than 1 inverter is used
- Integrated DC switch to be able to interrupt DC power
- Current stabiliser
- Surge voltage protection
- Remote monitoring facility
- Overload protection
- Over-current protection

The inverter/s shall be able to display energy readings such as Instantaneous Power, Daily Energy Generation, and Cumulative Energy Produced.

The inverters shall be supplied with a shading device for additional protection.

## 2.6 Over-current protection

All strings must be protected from reverse current using overcurrent protection devices, unless the reverse current rating provided by the manufacturer permits more than three parallel connected strings to be connected without protection. In that case a DC disconnection device must still be provided.



Over-current protection is necessary when the system is designed to have more than one array.

All overcurrent devices must be enclosed in a UV resistant IP65 enclosure.

## 2.7 DC cabling and connectors

The DC cables must be constructed of stranded copper conductors to ensure flexibility. The cables shall be encased in double jacket insulation and shall be water resistant. The cables shall have additional mechanical protection when transformer-less inverters are in use. Cables shall have a 90°C wet rating and a 150°C dry rating. The outer jacket shall be specifically designed for PV installations having weatherproof (UV and Ozone resistant insulation to ensure long-term resistance to sunlight exposure according to EN 60811-2-1). The cable shall also have fire retardant properties.

The cross-sectional area of the cables and connectors in use shall be designed to ensure the voltage drop specified above and shall have a current carrying capacity which is greater than the current being delivered. Cables, plugs sockets and couplers shall have a minimum voltage rating of at least 1.15 x Open Circuit Voltage of the string.

Current rating of cables with no overcurrent protection:

$ISC(STC) \times (N-1) \times 1.25$  Where N is the number of strings in the array.

Current rating of cables with overcurrent protection:

$ISC(STC) \times 1.25$  (This safety factor shall also apply for a number of strings in parallel.)

Snap in IP67 connector system shall be used to ensure secure connections. Male/female adapters shall be used such that the correct polarity between the PV modules and inverter is ensured. These connectors shall be used on all modules including the last module in a string.

All electrical connections shall comply with Class II electrical insulation rating.

## 2.8 Protection from Shock

The PV system installation shall be protected by a dedicated 'Type B' Residual Current Device at the termination end of the PV cable where the system comes into contact with the grid's electrical supply into the building.

A separate earth conductor cable shall be used as the Circuit Protective Conductor. Using the steel wire armour as the CPC shall not be acceptable. The earth cable shall be sized according to IEC 62548 and shall be rated at least at 1.4 x ISC (Short circuit current) for the system.

## 2.9 DC Surge Protection Device

Each string/array shall be protected from lightning strikes by means of a Type 2 surge arrester device according to EN 61643-11 and 62305-2. These shall have the following minimum specifications:

- a) Maximum continuous operating voltage (UC):  $UC > 1.2 \times VOC$  at STC
- b) Maximum discharge current ( $I_{max}$ ):  $I_{max} \geq 5$  kA
- c) Voltage protection level ( $U_p$ ):  $UC < U_p < 1.1$  kV

All surge arrestors must be enclosed in a UV resistant IP65 enclosure and placed at a distance not greater than 15m from the PV modules.

## 2.10 Testing and Commissioning

The performance of each string shall be tested to assess the energy production of each string individually.

Testing shall be carried out again after 5 years of operation to guarantee that the module degradation has not fallen below the guaranteed levels. Test results shall be issued to the client and engineer. These tests shall be included as part of the original offer.

An offer for the quarterly cleaning of PV modules shall also be submitted with the original offer.

## 2.11 Remote Monitoring

The installation shall also incorporate a web box which allows the client to monitor the PV plant installed. This shall be such that it can be physically connected to the network. The web-box shall also offer the possibility to change parameters and outputs a variety of measured values through a web browser or equivalent. It shall also be possible to transmit operation failures and generate an automatic email to alert the client of a fault.

This shall be such that it can be reviewed remotely from a minimum of 5 computers. The software shall be supplied c/w all licenses etc for a complete system.

The software shall include the following information: the instantaneous power generation, total energy produced on the day and total since start-up. Total displaced CO2 emissions data shall also be on display. The contractor shall make sure all the communication and power requirements to operate this feature shall be installed.

## 2.12 Design

The contractor shall be expected to prepare and submit drawings for the approval of the engineer showing the positioning and general layout of equipment.

### **2.13 Signage**

Safety Signage indicating live DC parts must be clearly visible on all junction boxes, plugs and connectors.

### **2.14 Safety**

Guard rails shall be installed wherever there is less than sufficient protection during the execution of works.

These shall be designed by a system of verticals and in line with health and safety regulations. Fixing to the roof shall be performed with no damage to existing structures and without leaving space for water ingress into the existing structure.

Safe ladders shall be provided to manual labourers in elevated areas which are inaccessible otherwise.

**VOLUME 4 - FINANCIAL BID / BILL OF QUANTITIES****Breakdown of Costs**

Tender Title: ERDF.PA4.0108 Malta Red Cross Solar Panels

Advert Number: MRCS/2021/001

| ITEM         | DESCRIPTION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | QTY | UNIT | RATE Euro<br>(Exc. of VAT) | TOTAL Euro<br>(Exc. of VAT) |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|------|----------------------------|-----------------------------|
| <b>1.000</b> | <b>PRELIMINARIES</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |     |      |                            |                             |
|              | <i>All equipment to be used within this contract is to be approved prior to delivery to site.</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |     |      |                            |                             |
| 1.001        | Mobilisation of site including the setting up of Storage facilities for materials, Sanitary facilities for the employees, Setting up of temporary site office, etc required to undertake the works                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 1   | L.S. |                            | -                           |
| 1.002        | Provision of insurance cover in the joint names of the Client and Contractor insure the Works against loss or damage by fire, storm, tempest, lightning, flood, earthquake, aircraft or anything dropped there from, aerial objects, riot and civil commotion for the full reinstatement value thereof plus 15% of all the Works executed and all unfixed materials and goods so insured until the completion of the Works. The Contractor shall affect a policy of insurance against third party risks to cover an amount of not less than Euro 500,000 (Five Hundred thousand Euros) for any one accident. The policy shall be in joint names of the Client and Contractor and shall include cross liability clauses. In respect of liability for the death or injury to any person employed by the Contractor and arising out of and in the course of such person's employment by the Contractor the amount insured by the Contractor shall be such as to indemnify the Client against all damages as compensation payable. The Contractor shall comply with and be subject to the terms, exclusions, exceptions, conditions and limitations of the insurance policies and shall bear the amount of the retained liabilities stated therein The Contractor shall deposit with the Client copies of the policy or policies and a copy of the receipt in respect of premiums paid before starting the Works | 1   | L.S. |                            | -                           |
| 1.003        | Implementation of health and safety measures on site including personal safety (e.g safety shoes, helmets scaffolding, harnesses etc) as well as those to render the site safe for employees (e.g staircase handrails, closing of lift shaft openings etc)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 1   | L.S. |                            | -                           |
| 1.004        | Prepare a risk assessment report outlining all risks involved and measures to be taken to minimise or eliminate potential risks. The report is to be prepared and signed by a competent person and to be submitted within three weeks from commencement of works.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 1   | L.S. |                            | -                           |
| 1.005        | Allow for carrying out all surveys, setting out of works unless included elsewhere in the Bills of Quantities.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 1   | L.S. |                            | -                           |

|       |                                                                                                                                                                                                                                                                                                                                                                         |   |                |  |   |
|-------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|----------------|--|---|
| 1.006 | Provision for attending to site to take all relevant measurements in order to ascertain the exact quantities of the individual and measured items to be procured as well as keeping of all relevant records of personnel attendance, stock control etc                                                                                                                  | 1 | L.S.           |  | - |
| 1.007 | Provision of security measures on site both as regards the storage facilities as well as to safeguard the materials installed during the latter stages of the project.                                                                                                                                                                                                  | 1 | L.S.           |  | - |
| 1.008 | Provision for the supply and delivery to site of samples as may be requested by the client / engineer                                                                                                                                                                                                                                                                   | 1 | L.S.           |  | - |
| 1.009 | Allow for continuously keeping the site and building clean and in a workman type condition free from debris, surplus materials and any other type of loose matter arising from works, which will disturb the proper conditions of any internal and external areas, roads and/or adjoining structures. Site Cleaning is to take place during the whole duration of works | 1 | L.S.           |  | - |
| 1.010 | Provision for hauling of equipment on site, including crantage, permits and all necessary fees.                                                                                                                                                                                                                                                                         | 1 | L.S.           |  | - |
| 1.011 | Provision to install guard rails around the roof perimeter where there is insufficient protection during the execution of works. Railing shall be installed according to the specifications.                                                                                                                                                                            | 1 | L.S.           |  | - |
|       | <b>TOTAL FOR 1.000</b>                                                                                                                                                                                                                                                                                                                                                  |   | <b>Exc VAT</b> |  | - |
|       | <b>TOTAL FOR PRELIMINARIES</b>                                                                                                                                                                                                                                                                                                                                          |   | <b>Exc VAT</b> |  | - |

| ITEM         | DESCRIPTION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | QTY | UNIT | RATE Euro<br>(Exc of VAT) | TOTAL Euro<br>(Exc of VAT) |
|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|------|---------------------------|----------------------------|
| <b>2.000</b> | <b>PV SYSTEM</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |     |      |                           |                            |
|              | <i>Supply &amp; install of the following photovoltaic systems c/w PV modules, DC wiring, web-box, individual power level optimisers, couplers, string combiner and array combiner (where necessary), PV mounting Structure, support framework c/w earthing, painting of structure with appropriate coatings, DC side surge arrestors, cable trays and all any other material and equipment as per specifications for a complete working system. The kW peaks shown are the minimum requirements per Zone.</i> |     |      |                           |                            |
| 2.001        | Zone 01 - 13.94 kW peak (41 x 340 Wp)                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 1   | L.S  |                           | -                          |
| 2.002        | Zone 02 - 9.52 kW peak (28 x 340 Wp)                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 1   | L.S  |                           | -                          |
| 2.003        | Zone 03 - 10.54 kW peak (31 x 340 Wp)                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 1   | L.S  |                           | -                          |
|              | <i>Supply, install &amp; connect of minimum kWp Generation of three phase power DC/AC inverters with integral power factor correction complete with DC and A/C isolators as per specifications</i>                                                                                                                                                                                                                                                                                                            |     |      |                           | -                          |
| 2.004        | Zone 01 - 15 kW peak Inverter                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 1   | No.  |                           | -                          |
| 2.005        | Zone 02 - 10 kW peak Inverter                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 1   | No.  |                           | -                          |
| 2.006        | Zone 03 - 10 kW peak Inverter                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 1   | No.  |                           | -                          |

|       |                                                                                                                                                                                                                                                                                                                                          |     |      |  |   |
|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|------|--|---|
|       | <i>Supply and install structure to provide adequate shading to the inverters and electrical switchgear installed.</i>                                                                                                                                                                                                                    |     |      |  | - |
| 2.007 | Shading Devices                                                                                                                                                                                                                                                                                                                          | 3   | No.  |  | - |
|       | <i>Supply, install and connect of PV Synchronizing Distribution Board as per schematic c/w contactors, extension boxes where required etc. for a complete system. Their respective schematic should be handed at tendering stage.</i>                                                                                                    |     |      |  |   |
| 2.008 | Dist. Board - 'DB PV' 4 way 200amps TP&N                                                                                                                                                                                                                                                                                                 | 1   | No.  |  | - |
| 2.009 | Supply and install surge protection devices                                                                                                                                                                                                                                                                                              | 1   | No.  |  | - |
| 2.010 | Fee to acquire MRA PV meter                                                                                                                                                                                                                                                                                                              | 1   | No.  |  | - |
|       | <i>Supply, install and connect the following cables on cable tray, etc. including all cleats, glands, terminal lugs etc., for a complete system.</i>                                                                                                                                                                                     |     |      |  |   |
| 2.011 | From DB-PV to Existing Electrical Plant (5 x 25 mm <sup>2</sup> XLPE/SWA/LSZH)                                                                                                                                                                                                                                                           | 15  | M    |  | - |
| 2.012 | From Zone 01 Inverter to DB-PV (5 x 4 mm <sup>2</sup> XLPE/SWA/LSZH)                                                                                                                                                                                                                                                                     | 30  | M    |  | - |
| 2.013 | From Zone 02 Inverter to DB-PV (5 x 4 mm <sup>2</sup> XLPE/SWA/LSZH)                                                                                                                                                                                                                                                                     | 35  | M    |  | - |
| 2.014 | From Zone 03 Inverter to DB-PV (5 x 4 mm <sup>2</sup> XLPE/SWA/LSZH)                                                                                                                                                                                                                                                                     | 55  | M    |  | - |
|       | Supply and install galvanised cable tray as per specifications and as indicated on drawings c/we arth clips & supports required to suspend cable trays from the roof finished floor level etc. for a complete installation                                                                                                               |     |      |  |   |
| 2.015 | 100 mm - Cable Tray                                                                                                                                                                                                                                                                                                                      | 105 | m    |  | - |
| 2.016 | Supply, install and connect remote monitoring system. The system shall include the required licensed software & supply, termination and testing of network cable using outdoor type UTP cable from existing network cabinet to the remote monitoring control panel.                                                                      | 1   | L.S. |  | - |
| 2.017 | Provision for all application forms including those required for the obtaining of a no objection letter from Enemalta, for the processing of feed-in tariffs and grants addressed to Enemalta Corporation/MRA as well as any PA approvals which shall be taken care of by the contractor and any other costs including application fees. | 1   | L.S. |  | - |
|       | <b>Testing &amp; Commissioning of System</b>                                                                                                                                                                                                                                                                                             |     |      |  |   |
| 2.018 | The PV system shall be tested and commissioned to satisfy the engineer. All commissioning documentation is to be certified for and signed by a Warranted Electrical Engineer for the electrical system and a warranted structural engineer for all necessary structures.                                                                 | 1   | L.S. |  | - |
| 2.019 | Testing of individual string to assess the energy production of each string                                                                                                                                                                                                                                                              | 1   | L.S. |  | - |
| 2.020 | Testing of system after a period of 5 years of operation to guarantee that the module degradation has not fallen below the guaranteed levels.                                                                                                                                                                                            | 1   | L.S. |  | - |
| 2.021 | Submittal of detailed working drawings to be approved by the engineer. Drawings shall indicate the positioning and layout of the equipment as well as all schematic diagrams.                                                                                                                                                            | 1   | L.S. |  | - |

|                        |                                                                                                                                            |                |      |  |   |
|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|----------------|------|--|---|
| 2.022                  | Provision for any builder's work, clips, clamps and bonding of equipment etc. which may be required in order to complete the installation. | 1              | L.S. |  | - |
| 2.023                  | Earthing of the installation according to IET standards and local Enemalta regulations.                                                    | 1              | L.S. |  | - |
| 2.024                  | Test and commission system                                                                                                                 | 1              | L.S. |  | - |
| 2.025                  | Supply one full set of as fitted drawings (including 1 hard copy and a digital copy on 2 separate USBs)                                    | 1              | Set  |  | - |
| <b>TOTAL FOR 2.000</b> |                                                                                                                                            | <b>Exc VAT</b> |      |  | - |

|                            |  |                |  |  |   |
|----------------------------|--|----------------|--|--|---|
| <b>TOTAL FOR PV SYSTEM</b> |  | <b>Exc VAT</b> |  |  | - |
|----------------------------|--|----------------|--|--|---|

| ITEM                   | DESCRIPTION                                                                                                                                                                                                               | QTY            | UNIT      | RATE Euro<br>(Exc of VAT) | TOTAL Euro<br>(Exc of VAT) |
|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|-----------|---------------------------|----------------------------|
| <b>3.00</b>            | <b>DAYWORKS</b>                                                                                                                                                                                                           |                |           |                           |                            |
|                        | Supply / install / connect / commission any other unbilled items which are required for a complete installation. Claims for payment at a later stage for any other items not specifically mentioned shall not be accepted |                |           |                           |                            |
| 3.001                  | Provision for Labour                                                                                                                                                                                                      | 1              | L.S.      |                           | -                          |
| 3.002                  | Provision for Material                                                                                                                                                                                                    | 1              | L.S.      |                           | -                          |
| 3.003                  | Provision for Plant                                                                                                                                                                                                       | 1              | L.S.      |                           | -                          |
| 3.004                  | Quarterly Cleaning of PV modules                                                                                                                                                                                          | 1              | rate only |                           |                            |
| 3.005                  |                                                                                                                                                                                                                           |                |           |                           | -                          |
| 3.006                  |                                                                                                                                                                                                                           |                |           |                           | -                          |
| 3.007                  |                                                                                                                                                                                                                           |                |           |                           | -                          |
| 3.008                  |                                                                                                                                                                                                                           |                |           |                           | -                          |
| 3.009                  |                                                                                                                                                                                                                           |                |           |                           | -                          |
| 3.010                  |                                                                                                                                                                                                                           |                |           |                           | -                          |
| 3.011                  |                                                                                                                                                                                                                           |                |           |                           | -                          |
| 3.012                  |                                                                                                                                                                                                                           |                |           |                           | -                          |
| 3.013                  |                                                                                                                                                                                                                           |                |           |                           | -                          |
| 3.014                  |                                                                                                                                                                                                                           |                |           |                           | -                          |
| 3.015                  |                                                                                                                                                                                                                           |                |           |                           | -                          |
| 3.016                  |                                                                                                                                                                                                                           |                |           |                           | -                          |
| <b>TOTAL FOR 3.000</b> |                                                                                                                                                                                                                           | <b>Exc VAT</b> |           |                           | -                          |

|                           |  |                |  |  |   |
|---------------------------|--|----------------|--|--|---|
| <b>TOTAL FOR DAYWORKS</b> |  | <b>Exc VAT</b> |  |  | - |
|---------------------------|--|----------------|--|--|---|

**SUMMARY**

€

€

|              |                                |
|--------------|--------------------------------|
|              | TOTAL FOR 1.000                |
| <b>1.000</b> | <b>TOTAL FOR PRELIMINARIES</b> |
| <b>2.000</b> | <b>TOTAL FOR PV SYSTEM</b>     |
| <b>3.000</b> | <b>TOTAL FOR DAYWORKS</b>      |

|   |   |
|---|---|
| - |   |
|   | - |
|   | - |
|   | - |

|                            |                |   |
|----------------------------|----------------|---|
| <b>TOTAL FOR PV SYSTEM</b> | <b>Exc VAT</b> | - |
|----------------------------|----------------|---|

Signature: .....

(the person or persons authorised to sign on behalf of the tenderer)

Date: .....

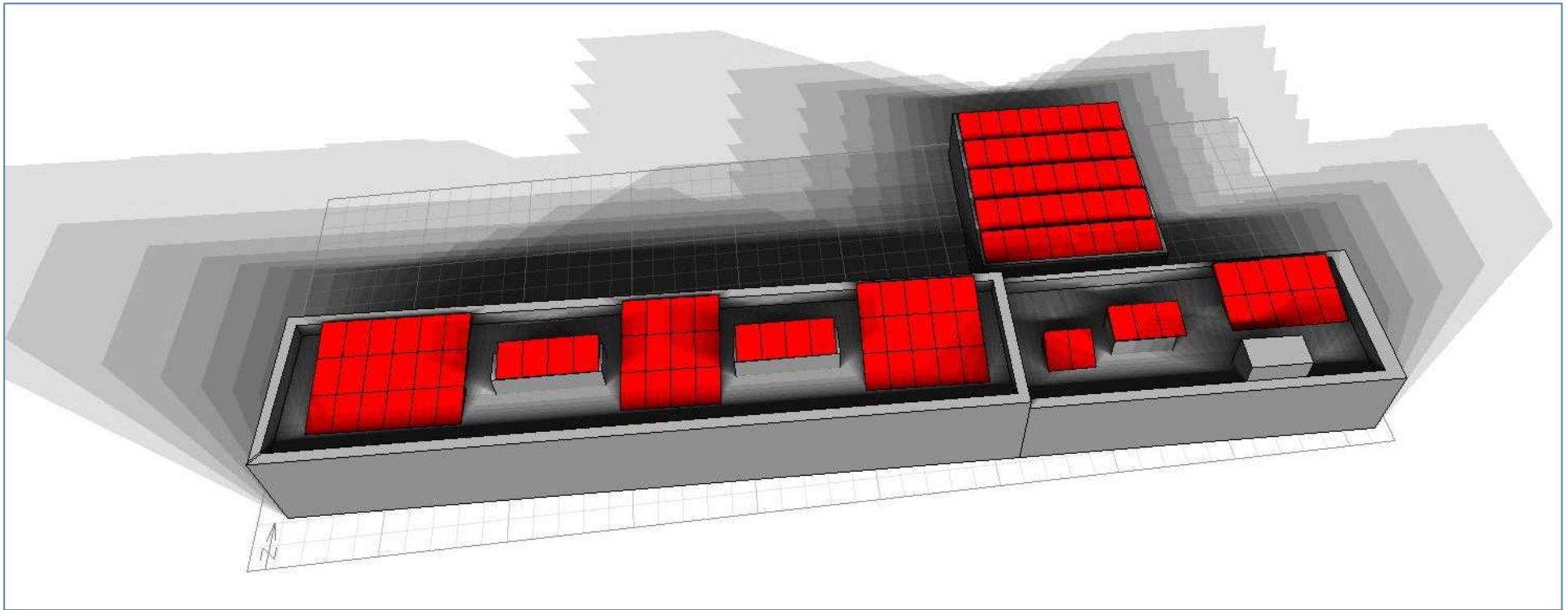
**DAILY RATES (For information Purposes Only, not to be included in final price)**

Rates quoted are to include total cost of labour inclusive of VAT and any other charges as applicable.

| Item | Daily rate for the service of: | Rate in Eur |
|------|--------------------------------|-------------|
| 1    | Unskilled labourer             |             |
| 2    | skilled labourer               |             |
| 3    | Supervisor                     |             |
| 4    | Technician/Electrician         |             |
| 5    | Engineer                       |             |
| 6    | Other category-                |             |



## VOLUME 5- DRAWINGS



Drawing 0108: Proposed PV Layout on site