



# **NAMBOARD**

**NATIONAL AGRICULTURAL  
MARKETING BOARD**

***TENDER NUMBER: NAMB03/20***

## **REQUEST FOR EXPRESSION OF INTEREST**

**FOR THE  
INSTALLATION OF SOLAR SYSTEMS IN  
MOBILE OFFICES  
FOR NAMBOARD**

**11 NOVEMBER 2020**

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## SECTION 1: LETTER OF INVITATION

NAMBOARD, Manzini Head Office

11 November 2020

Dear \_\_\_\_\_ [*Name of Consultant*]

- 1 The National Agricultural Marketing Board is soliciting expression of interest from qualified contractors for the design, fabricate, deliver, install, and maintain a rooftop utility-interactive solar photovoltaic system.
- 2 The Service Provider will be selected under Quality and Cost Based Selection, and procedures described in this tender document.
- 3 The tender document includes the following documents:

Section 1 – Letter of Invitation

Section 2 – Instruction to Consultants

Section 3 – Data Sheet

Section 4 – Terms of Reference

Section 5 – Standard Forms of Contract



## SECTION 2: INSTRUCTIONS TO CONSULTANTS

### Definition of Terms

- “Client” means the agency with which the selected Consultant signs the Contract for the Services
- “Consultant” means any entity or person that may provide or provides the Services to the Client under the Contract
- “Contract” means the Contract signed by the Parties and all the attached documents that is the General Conditions (GC), the Special Conditions (SC), and the Appendices
- “Data Sheet” means such part of the Instructions to Consultants used to reflect specific assignment conditions
- “Day” means calendar day
- “EoI” means Expression of Interest
- “Government” means the government of the Kingdom of Eswatini
- “Instructions to Consultants” means the document which provides Consultants with all information needed to prepare their Proposals
- “LOI” Letter of Invitation means the Letter of Invitation being sent by the Client to the Consultants
- “Personnel” means professionals and support staff provided by the Consultant or by any Sub-Consultant and assigned to perform the Services or any part thereof; “Foreign Personnel” means such professionals and support staff who at the time of being so provided had their domicile outside Eswatini; “Local Personnel” means such professionals and support staff who at the time of being so provided had their domicile inside Swaziland
- “Proposal” means the Technical Proposal and the Financial Proposal
- “RFP” means this Request for Proposals
- “Services” means the work to be performed by the Consultant pursuant to the Contract
- “Sub-Consultant” means any person or entity with whom the Consultant subcontracts any part of the Services
- “Terms of Reference” (TOR) means the document included in this tender document which explains the objectives, scope of work, activities, tasks to be performed, respective responsibilities of the Client and the Consultant, and expected results and deliverables of the assignment.



## List of Abbreviations and Acronyms

AC	alternate current
A/E	architects/engineers
CDs	compact disks
CM	construction management
DC	direct current
ESERA	Eswatini Energy Regulatory Authority
FM	Factory Manual
kWh	kilowatt-hour
kW	kilowatt
kV	Kilovolts
LED	light emitting diode
MDP	main distribution panel
MPPT	maximum power point tracking
POA	plane of array
POI	point of interconnection
PV	photovoltaic
QCP	Quality Control Plan
RECs	renewable energy certificates
STC	standard test conditions
TRECs	tradable renewable energy certificates
V	volts



## **1. Introduction**

- 1.1 The Client named in the Data Sheet will select a consulting individual/firm/organization (the Consultant) in accordance with the method of selection specified in the Data Sheet.
- 1.2 Consultants are invited to submit a Technical Proposal and a Financial Proposal for consulting services required for the assignment named in the Data Sheet. The Proposal will be the basis for contract negotiations and ultimately for a signed Contract with the selected Consultant.
- 1.3 Consultants should familiarize themselves with local conditions and take them into account in preparing their Proposals. To obtain first-hand information on the assignment and local conditions, Consultants are encouraged to visit the Client before submitting a proposal and to attend a pre-proposal conference if one is specified in the Data Sheet. Attending the pre-proposal conference is optional.
- 1.4 Consultants should contact the Client's representative named in the Data Sheet to arrange for their visit or to obtain additional information on the pre-proposal conference. Consultants should ensure that these officials are advised of the visit in adequate time to allow them to make appropriate arrangements.
- 1.5 The Client will timely provide at no cost to the Consultant the inputs and facilities specified in the Data Sheet, assist the Consultant in obtaining licenses and permits needed to carry out the services, and make available relevant information and reports.
- 1.6 Consultants shall bear all costs associated with the preparation and submission of their proposals and contract negotiation. The Client is not bound to accept any proposal, and reserves the right to annul the selection process at any time prior to Contract award, without thereby incurring any liability to the Consultants.

## **2. Conflict of Interest**

- 2.1 Consultants are required to provide professional, objective, and impartial advice and at all times hold the Client's interest's paramount, strictly avoid



conflicts with other assignments or their own corporate interests and act without any consideration for future work.

2.2 Without limitation on the generality of the foregoing, Consultants, and any of their affiliates, shall be considered to have a conflict of interest and shall not be recruited, under any of the circumstances set forth below:

(i) A firm that has been engaged by the Client to provide goods, works or services other than consulting services for a project, and any of its affiliates, shall be disqualified from providing consulting services related to those goods, works or services. Conversely, a firm hired to provide consulting services for the preparation or implementation of a project, and any of its affiliates, shall be disqualified from subsequently providing goods or works or services other than consulting services resulting from or directly related to the firm's consulting services for such preparation or implementation.

*For the purpose of this paragraph, services other than consulting services are defined as those leading to a measurable physical output, for example surveys, exploratory drilling, aerial photography, and satellite imagery.*

(ii) A Consultant (including its Personnel and Sub-Consultants) or any of its affiliates shall not be hired for any assignment that, by its nature, may be in conflict with another assignment of the Consultant to be executed for the same or for another Client. For example, a Consultant hired to prepare engineering design for an infrastructure project shall not be engaged to prepare an independent environmental assessment for the same project, and a Consultant assisting a Client in the privatization of public assets shall not purchase, nor advise purchasers of such assets. Similarly, a Consultant hired to prepare Terms of Reference for an assignment should not be hired for the assignment in question.

(iii) A Consultant (including its Personnel and Sub-Consultants) that has a business or family relationship with a member of the Client's staff who is directly or indirectly involved in any part of (i) the preparation of the Terms of Reference of the assignment, (ii) the selection process for such assignment, or (iii) supervision of the Contract, may not be awarded a Contract.

2.3 Consultants have an obligation to disclose any situation of actual or potential conflict that impacts their capacity to serve the best interest of



their Client, or that may reasonably be perceived as having this effect. Failure to disclose said situations may lead to the disqualification of the Consultant or the termination of its Contract.

### **3. Association**

- 3.1 If a shortlisted Consultant could derive a competitive advantage from having provided consulting services related to the assignment in question, the Client shall make available to all shortlisted Consultants all information that would in that respect give such Consultant any competitive advantage over competing Consultants.

### **4. Commissions**

- 4.1 Consultants shall furnish information on commissions and gratuities, if any, paid or to be paid to agents relating to this proposal and during execution of the assignment if the Consultant is awarded the Contract, as requested in the Financial Proposal submission form.

### **5. One Proposal**

- 5.1 Shortlisted Consultants may only submit one proposal. If a Consultant submits or participates in more than one proposal, such proposals shall be disqualified. However, this does not limit the participation of the same Sub-Consultant, including individual experts, to more than one proposal.

### **6. Validity**

- 6.1 The Data Sheet indicates how long Consultants' Proposals must remain valid after the submission date. During this period, Consultants shall maintain the availability of Professional staff nominated in the Proposal. The Client will make its best effort to complete negotiations within this period. Should the need arise, however, the Client may request Consultants to extend the validity period of their proposals. Consultants who agree to such extension shall confirm that they maintain the availability of the Professional staff nominated in the Proposal, or in their confirmation of extension of validity of the Proposal, Consultants could submit new staff in replacement, who would be considered in the final evaluation for contract award. Consultants who do not agree have the right to refuse to extend the validity of their Proposals.



## **7. Clarification and Amendment of EOI Documents**

- 7.1 Consultants may request a clarification of any of the EOI documents up to the number of days indicated in the Data Sheet before the proposal submission date. Any request for clarification must be sent in writing, or by standard electronic means to the Client's address indicated in the Data Sheet. The Client will respond in writing, or by standard electronic means and will send written copies of the response (including an explanation of the query but without identifying the source of inquiry) to all Consultants. Should the Client deem it necessary to amend the EOI as a result of a clarification, it shall do so following the procedure detailed below.
  
- 7.2 At any time before the submission of Proposals, the Client may amend the EOI by issuing an addendum in writing or by standard electronic means. The addendum shall be sent to all Consultants and will be binding on them. Consultants shall acknowledge receipt of all amendments. To give Consultants reasonable time in which to take an amendment into account in their Proposals the Client may, if the amendment is substantial, extend the deadline for the submission of Proposals.

## **8. Preparation of Proposals**

- 8.1 The Proposal, as well as all related correspondence exchanged by the Consultants and the Client, shall be written in the English language.
  
- 8.2 In preparing their Proposal, Consultants are expected to examine in detail the documents comprising the EOI. Material deficiencies in providing the information requested may result in rejection of a Proposal.
  
- 8.3 In preparing their Proposal, Consultants are expected to examine in detail the documents comprising the EOI. Material deficiencies in providing the information requested may result in rejection of a Proposal.
  
- 8.4 While preparing the Technical Proposal, Consultants must also give particular attention to the following:
  - (a) The estimated number of Professional staff-months/days for executing the assignment shall be shown in the Data Sheet, the Proposal shall be based on the number of Professional staff-months/days estimated by the Consultants.
  - (b) Alternative professional staff shall not be proposed, and only one Curriculum Vitae (CV) may be submitted for each position.



## 9. Preparation of the Technical Proposal

- 9.1 As required in Form TECH-2, Part C, the following documents must be attached to the Technical Proposal as Appendices:
- (i) Certified copy of a relevant Trading License, or equivalent for foreign
  - (ii) Valid Tax Compliance Certificate, or equivalent for foreign consultants;
  - (iii) Certified Copy of current Certificate of Company Registration, or equivalent for foreign consultants;
  - (iv) Certified Copy of an official statement of the Directors, alternative directors, managers and auditors of the company (Form 'J' or equivalent);
  - (v) Police clearance for Directors
  - (vi) Certified copy of an official statement of the annual summary of shares capital and shares (Form 'C' or equivalent); and
  - (vii) Certified copy of the Labor Compliant Certificate.
  - (viii) Audited Financial Statements for past three years
  - (ix) References
  - (x) Certificate of Incorporation
- 9.2 Consultants are required to submit a Full Technical Proposal. The Technical Proposal shall provide the information indicated in the following paragraphs from (a) to (g) using the attached Standard Forms:
- (a) For the Technical Proposal, evidence of the Consultant's financial standing must be provided in the form of certified copies of financial statements and banking details, as stated in Form TECH-2, Part A, followed by a brief description of the Consultants' organization and an outline of the Consultant's recent experience of a similar nature as required in Form TECH-2, Part B and C. For each assignment, the outline should indicate the names of Sub-Consultants/ Professional staff who participated, duration of the assignment, contract amount, and Consultant's involvement. Information should be provided only for those assignments for which the Consultant was legally contracted by the Client as a corporation or as one of the major firms within a joint venture. Assignments completed by individual Professional staff working privately or through other consulting firms cannot be claimed as the experience of the Consultant, or that of the Consultant's associates, but



can be claimed by the Professional staff themselves in their CVs. Consultants should be prepared to substantiate the claimed experience if so requested by the Client.

- (b) Form TECH-2 (C) request that the consultant include certified copies of: trading license, tax clearance certificate, form 'J' and form 'C', or for foreign consultants' similar documents.
- (c) Comments and suggestions on the Terms of Reference including workable suggestions that could improve the quality/ effectiveness of the assignment; and on requirements for counterpart staff and facilities including: administrative support, office space, local transportation, equipment, data, etc. to be provided by the Client (Form TECH-3).
- (d) A description of the approach, methodology and work plan for performing the assignment covering the following subjects: technical approach and methodology, work plan, and organization and staffing schedule. Guidance on the content of this section of the Technical Proposals is provided under Form TECH-4. The work plan should be consistent with the Work Schedule (Form TECH-8) which will show in the form of a bar chart the timing proposed for each activity.
- (e) The list of the proposed Professional staff team by area of expertise, the position that would be assigned to each staff team member, and their tasks (Form TECH-5).
- (f) Estimates of the staff input (staff-months of foreign and local professionals) needed to carry out the assignment (Form TECH-7). The staff-months input should be indicated separately for home office and field activities, and for foreign and local Professional staff.
- (g) CVs of the Professional staff signed by the staff themselves or by the authorized representative of the Professional Staff (Form TECH-6).
- (h) A detailed description of the proposed methodology and staffing for training, if the Data Sheet specifies training as a specific component of the assignment.
- (i) Declaration of Eligibility (Form TECH-9) all Consultants must meet the following criteria, to be eligible to participate in public procurement

9.3 The Technical Proposal shall not include any financial information. A Technical Proposal, which contains financial information, may be declared non responsive.



## **10. Preparation of the Financial Proposal**

- 10.1 The Financial Proposal shall be prepared using the attached Standard Forms. It shall list all costs associated with the assignment, including (a) remuneration for staff (foreign and local, in the field and at the Consultants' home office), and (b) reimbursable expenses. If appropriate, these costs should be broken down by activity and, if appropriate, into foreign and local expenditures.
- 10.2 All activities and items described in the Technical Proposal must be priced separately; activities and items described in the Technical Proposal but not priced, shall be assumed to be included in the prices of other activities or items.
- 10.3 The Consultant shall be subject to local taxes (such as: value added or sales tax, social charges or income taxes on non-resident Foreign Personnel, duties, fees, levies) on amounts payable by the Client under the Contract.
- 10.4 Consultants must express the price of their services in Emalangeni unless otherwise specified in the Data Sheet. Commissions and gratuities, if any, paid or to be paid by Consultants and related to the assignment will be listed in the Financial Proposal Form FIN-1

## **11. Packing and Submission of Proposal**

- 11.1 The original proposal (Technical Proposal and Financial Proposal; shall contain no interlineations or overwriting, except as necessary to correct errors made by the Consultants themselves. The person who signed the proposal must initial such corrections. Submission letters for both Technical and Financial Proposals should respectively be in the format of TECH-1 and FIN-1
- 11.2 An authorized representative of the Consultants shall initial all pages of the original Technical and Financial Proposals. The authorization shall be in the form of a written power of attorney accompanying the Proposal or in any other form demonstrating that the representative has been dully authorized to sign. The signed Technical and Financial Proposals shall be marked "Original".
- 11.3 The Technical Proposal shall be marked "Original" or "Copy" as appropriate. The Technical Proposals shall be sent to the addresses referred to in



paragraph 12.1 and in the number of copies indicated in the Data Sheet. All required copies of the Technical Proposal are to be made from the original. If there are discrepancies between the original and the copies of the Technical Proposal, the original governs.

- 11.4 The original and all copies of the Technical Proposal shall be placed in a sealed envelope clearly marked "Technical Proposal" Similarly, the original Financial Proposal shall be placed in a sealed envelope clearly marked "Financial Proposal" followed by the Tender Number and the name of the assignment, and with a warning "Do Not Open with The Technical Proposal."
- 11.5 The envelopes containing the Technical and Financial Proposals shall be placed into an outer envelope and sealed.
- 11.6 This outer envelope shall bear the submission address and reference number and be clearly marked "Do Not Open before [insert the time and date of the submission deadline indicated in the Data Sheet]". The Client shall not be responsible for misplacement, losing or premature opening if the outer envelope is not sealed and/or marked as stipulated. This circumstance may be case for Proposal rejection.
- 11.7 If the Financial Proposal is not submitted in a separate sealed envelope duly marked as indicated above, this will constitute grounds for declaring the Proposal non-responsive.

## **12. Latest Date for Submission**

- 12.1 The Proposals must be sent to the address/addresses indicated in the Data Sheet and received by the Client no later than the date and time indicated in the Data Sheet or any extension to this date. Any proposal received by the Client after the deadline for submission shall be returned unopened.

## **13. Opening of Technical Proposals**

- 13.1 The Client shall open the Technical Proposal immediately after the deadline for their submission. The envelopes with the Financial Proposal shall remain sealed and securely stored.
- 13.2 From the time the Proposals are opened to the time the Contract is awarded, the Consultants should not contact the Client on any matter related to its Technical and/or Financial Proposal. Any effort by Consultants



to influence the Client in the examination, evaluation, ranking of Proposals, and recommendation for award of Contract may result in the rejection of the Consultants' Proposal.

- 13.3 Evaluators of Technical Proposals shall have no access to the Financial Proposals until the technical evaluation is concluded.

#### **14. Evaluation of the Technical Proposals**

- 14.1 The evaluation committee shall evaluate the Technical Proposals on the basis of their responsiveness to the Terms of Reference, applying the evaluation criteria, sub-criteria, and point system specified in the Data Sheet. Each responsive Proposal will be given a technical score (St).
- 14.2 A Proposal shall be rejected at this stage if it does not respond to important aspects of the EOI, and particularly the Terms of Reference or if it fails to achieve the minimum technical score indicated in the Data Sheet.
- 14.3 After the technical evaluation is completed and the Tender Board has provided its approval, the Client shall inform the Consultants who have submitted proposals the technical scores obtained by their Technical Proposals, and shall notify those Consultants whose Proposals did not meet the minimum qualifying mark or were considered non responsive to the EOI and TOR, that their Financial Proposals will be returned unopened after completing the selection process.
- 14.4 The Client shall simultaneously notify in writing Consultants that have secured the minimum qualifying mark, the date, time and location for opening the Financial Proposals. The opening date should allow Consultants sufficient time to make arrangements for attending the opening. Consultants' attendance at the opening of Financial Proposals is optional.

#### **15. Opening of Financial Proposals**

- 15.1 Financial Proposals shall be opened publicly in the presence of the Consultants' representatives who choose to attend. The name of the Consultants and the technical scores of the Consultants shall be read aloud. The Financial Proposal of the Consultants who met the minimum qualifying mark will then be inspected to confirm that they have remained sealed and unopened. These Financial Proposals shall be then opened, and the total



prices read aloud and recorded. A Copy of the record shall be sent to all Consultants who request it.

## **16. Evaluation of Financial Proposals**

16.1 The Evaluation Committee will correct any computational errors. When correcting computational errors, in case of discrepancy between a partial amount and the total amount, or between word and figures the formers will prevail. Activities and items described in the Technical Proposal but not priced, shall be assumed to be included in the prices of other activities or items. In case an activity or line item is quantified in the Financial Proposal differently from the Technical Proposal, no corrections are applied to the Financial Proposal in this respect.

16.2 The Evaluation Committee will convert prices in various currencies to the single currency specified in the Data Sheet. The official selling rates used, provided by the source indicated in the Data Sheet, will be those in effect on the date indicated in the Data Sheet. The evaluation shall exclude those taxes, duties, fees, levies, and other charges imposed under the applicable law; and to be applied to foreign and non-permanent resident consultants (and to be paid under the contract, unless the consultant is exempted)

## **17. Evaluation**

17.1 The Consultant, whose technical proposal has achieved the minimum qualifying mark and whose financial proposal is the lowest, will be invited for Negotiations.

## **18. Evaluation of Quality Cost based Proposals**

18.1 The formula for determining the financial scores is the following:

$S_f = 100 \times F_m / F$ , in which  $S_f$  is the financial score,  $F_m$  is the lowest price and  $F$  the price of the proposal under consideration. The financial scores ( $S_f$ ) of the other Financial Proposals will be computed as indicated in the Data Sheet. Proposals will be ranked according to their combined technical ( $S_t$ ) and Financial scores.

18.2 Financial ( $S_f$ ) scores using the weights ( $T$  = the weight given to the Technical Proposal;  $P$  = the weight given to the Financial Proposal;  $T + P = 1$ ) indicated in the Data Sheet:  $S = S_t \times T\% + S_f \times P\%$ . The firm achieving the highest combined technical and financial score will be invited for negotiations.



## **19. Place and Time for Negotiations**

19.1 Negotiations will be held at the date and address indicated in the Data Sheet. The invited Consultant will, as a pre-requisite for attendance at the negotiations, confirm availability of all Professional staff. Failure in satisfying such requirements may result in the Client proceeding to negotiate with the next-ranked Consultant. Representatives conducting negotiations on behalf of the Consultant must have written authority to negotiate and conclude a Contract.

## **20. Technical Negotiations**

20.1 Negotiations will include a discussion of the Technical Proposal, the proposed technical approach and methodology, work plan, and organization and staffing, and any suggestions made by the Consultant to improve the Terms of Reference. The Client and the Consultants will finalize the Terms of Reference, staffing schedule, work schedule, logistics, and reporting. These documents will then be incorporated in the Contract as "Description of Services". Special attention will be paid to clearly defining the inputs and facilities required from the Client to ensure satisfactory implementation of the assignment. The Client shall prepare minutes of negotiations which will be signed by the Client and the Consultant.

## **21. Financial Negotiations**

21.1 If applicable, it is the responsibility of the Consultant, before starting financial negotiations, to contact the local tax authorities to determine the local tax amount to be paid by the Consultant under the Contract. The financial negotiations will include a clarification (if any) of the firm's tax liability in the Client's country, and the manner in which it will be reflected in the Contract; and will reflect the agreed technical modifications in the cost of the services. Unless there are exceptional reasons, the financial negotiations will involve neither the remuneration rates for staff nor other proposed unit rates.

21.2 Having selected the Consultant on the basis of, among other things, an evaluation of proposed Professional staff, the Client expects to negotiate a Contract on the basis of the Professional staff named in the Proposal. Before contract negotiations, the Client will require assurances that the Professional staff will be actually available.



- 21.3 The Client will not consider substitutions during contract negotiations unless both parties agree that undue delay in the selection process makes such substitution unavoidable or for reasons such as death or medical incapacity. If this is not the case and if it is established that Professional staff were offered in the proposal without confirming their availability, the Consultant may be disqualified. Any proposed substitute shall have equivalent or better qualifications and experience than the original candidate and be submitted by the Consultant within the period of time specified in the letter of invitation to negotiate.
- 21.4 Negotiations will conclude with a review of the draft Contract. To complete negotiations the Client and the Consultant will initial the agreed Contract. If negotiations fail, the Client will invite the Consultant whose Proposal received the second highest score to negotiate a Contract.
- 21.5 After completing negotiations, the Client shall award the Contract to the selected Consultant, and promptly notify all Consultants who have submitted proposals. After Contract signature, the Client shall return the unopened Financial Proposals to the unsuccessful Consultants.
- 21.6 Information relating to evaluation of Proposals and recommendations concerning awards shall not be disclosed to the Consultants who submitted the Proposals or to other persons not officially concerned with the process, until the publication of the award of Contract.

## **22. Commence of Assignment**

- 22.1 The Consultant is expected to commence the assignment on the date and at the location specified in the Data Sheet.

## **23. Corrupt, collusive, fraudulent or coercive practices**

- 23.1 Consultants should be aware that a consultant who engages in corrupt, collusive, fraudulent or coercive practices will have their proposals rejected and may further be subject to the prosecution under the laws of Swaziland.
- 23.2 "Corrupt practice" means the offering, giving, receiving or soliciting, directly or indirectly, of anything of value to influence the action of a public officer in the procurement process or in contract execution;



- 23.3 “Collusive” practices mean a scheme or arrangement between two or more consultants, with or without the knowledge of the procuring entity, designed to establish tender prices at artificial, non-competitive levels;
- 23.4 “Fraudulent practice” means a misrepresentation or omission of facts in order to influence a procurement process or the execution of a contract;
- 23.5 “Coercive practices” means harming or threatening to harm, directly or indirectly, persons, or their property, to influence their participation in a procurement process or affect the execution of a contract.



## PROPOSAL DATA SHEET

Paragraph Reference

### 1. Definitions

- 1.1 **Name of Client:** *National Agricultural Marketing Board (NAMBoard)*  
**Method of Selection:** *Experience, Quality and Cost Based Selection*
- 1.2 **Name of Assignment:** For the installation of rooftop utility-interactive solar photovoltaic system
- 1.3 A pre-proposal conference will be held: [No]

### 2. Conflict of interest

- 2.1 Family relationship with a member of the Client's staff – refer to Attachment 1 of this document

### 3. Validity

- 3.1 The proposals must remain valid for 30 (thirty) days after the submission date.

### 4. Clarification and Amendment of EoI Document

- 4.1 Clarifications may be requested in writing (letter, email, or by fax), but not later than 10 (ten) days before the latest submission date.

The contact person and details for requesting clarifications is:

*Sanele Matsebula*

*Tel.: +268 2505 2646,*

*Fax: +268 2505 4072,*

*Email: [procurement@namboard.co.sz](mailto:procurement@namboard.co.sz)*

### 5. Preparation of EoI Document

- 5.1 The estimated number of staff-months/days required for the assignment

(a) *The duration of this assignment is 20 working days*

### 6. Preparation of the Technical Proposal

- 6.1 The documents listed may not apply to individual consultant

- 6.2 Training is a specific component of this assignment: [No]



## 7. Preparation of the Financial Proposal

7.1 Information on taxes may be obtained from the following:

**The Commissioner General  
Eswatini Revenue Authority  
P O Box 186  
Mbabane  
Tel.: +268 2406 4000/1401 Fax: +268 2404 2753**

7.2 *Currency of payment is Swazi Emalangenzi only*

## 8. Packing and Submission of Proposal

8.1 The Consultant must submit the **original** and a **copy** of the Technical Proposal and the **original** and a **copy** of the Financial Proposal.

8.2 The original and copies of the Technical Proposal shall be placed in a sealed envelope clearly marked "Technical Proposal."

The original Financial Proposal shall be placed in a sealed envelope clearly marked "Financial Proposal"

The name of the Consultant and address shall appear on both envelopes

The envelopes containing the Technical and Financial Proposal shall be placed into an outer envelope, which shall be sealed.

The outer envelope SHALL be sealed and must be marked:

**TENDER NUMBER: NAMB03/20  
The Chairman of the Tender Committee  
NAMBOARD  
Plot No. 1A Lot 165  
Cnr. Masalesikhundleni & Mbabha Str.  
Manzini, Swaziland**

## 9. Latest Date for Submission

9.1 The location for submission is

**NAMBOARD  
Plot No. 1A Lot 165  
Cnr. Masalesikhundleni & Mbabha Str.**



## Manzini, Swaziland

Proposals must be submitted to NAMBoard Head Office (Manzini) reception.

The closing time for submission of the proposals is as per the Clock in the reception area at NAMBoard Head Office in Manzini.

The closing date and time for submission is: **Thursday 17 December 2020 at 1600hrs.**

### 10. Opening of proposal

- 10.1 Proposals shall be opened immediately after the deadline, in Manzini, NAMBoard Head Office.

### 11. Evaluation of the Technical Proposals

- 11.1 Criteria, sub-criteria and point system for the evaluation of Full Technical Proposal are:

	<i>Points</i>
<i>(i) Relevant Professional Experience</i>	40
<i>(ii) Previous Relevant Assignment taken</i>	40
<i>(iii) Proof of Capacity, Machinery and Manpower</i>	10
<i>(iv) Good and Reputable References</i>	10
<b><i>Total Technical Points</i></b>	<b>100</b>

The minimum Technical Score (St) required to pass is: [70 points]

### 12. Evaluation of Quality Cost Based Proposals

- 12.1 Evaluation will take place in Emalangeni only

### 13. Evaluation of Quality Cost Based Proposals

- 13.1 The method for determining the winning bid will be as follows:



$S_f = 100 \times F_m / F$ , in which  $S_f$  is the financial score,  $F_m$  is the lowest price and  $F$  the price of the proposal under consideration.

#### **14. Negotiations**

14.1 Expected address for contract negotiations:

**NAMBoard Head Office, Plot No. 1A Lot 165  
Cnr. Masalesikhundleni & Mbabha Str.  
Manzini, Eswatini  
Tel.: +268 2505 2646**

#### **15. Notice of Award**

15.1 The Client shall send the notice of award to all tenderers who submitted tenders by letter and, where appropriate, by fax or email; and, published on the Government's public procurement website.

#### **16. Commencement of Assignment**

16.1 The assignment is expected to commence on the **23<sup>rd</sup> December 2020**



## SECTION 3: TECHNICAL PROPOSAL

### Form TECH-1: Technical Proposal Submission Form

[Address, Date]

To: NAMBOARD

Dear Sirs:

We, the undersigned, offer to design, fabricate, deliver, install, and maintain a rooftop utility-interactive solar photovoltaic system. We are hereby submitting our Proposal, which includes this Technical Proposal, and a Financial Proposal sealed under a separate envelope.

We are submitting our Proposal in association with: [Insert a list with full name and address of each associated Consultant]<sup>1</sup>

We hereby declare that all the information and statements made in this Proposal are true and accept that any misinterpretation contained in it may lead to our disqualification.

If negotiations are held during the period of validity of the Proposal, i.e., before the date indicated in Paragraph Reference 6.1 of the Data Sheet, we undertake to negotiate on the basis of the proposed staff. Our Proposal is binding upon us and subject to the modifications resulting from Contract negotiations.

We undertake, if our Proposal is accepted, to initiate the consulting services related to the assignment not later than the date indicated in Paragraph Reference 9 of the Data Sheet.

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

Yours sincerely,

Authorized Signature [In full and initials]: .....

Name and Title of Signatory: .....

Name of Firm: .....

Address: .....

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<sup>1</sup> [Delete in case no association is foreseen.]



## Form TECH-2: Consultant's Organization and Experience

### A - Consultant's Organization

*[Provide here a brief description of the background and organization of your firm/entity and each associate for this assignment, if applicable]*

### B - Consultant's Experience

*[Using the format below, provide information on each assignment for which your firm, and each associate for this assignment, was legally contracted either individually as a corporate entity or as one of the major companies within an association, for carrying out consulting services similar to the ones requested under this assignment.]*

Assignment name:	Approx. value of the contract (in Emalangeni):
Country: Location within country:	Duration of assignment (months):
Name of Client:	Total N <sup>o</sup> of staff-months/days of the assignment:
Address:	Name of senior professional staff of your firm involved and functions performed (indicate most significant profiles such as Project Director/Coordinator, Team Leader):
Start date (month/year):	
Completion date (month/year):	
Name of associated Consultants, if any:	
Narrative description of Project:	
Description of actual services provided by your staff within the assignment:	



## Form TECH-3: Comments and Suggestions on the Terms of Reference

### **A - On the Terms of Reference**

*[Present and justify here any modifications or improvement to the Terms of Reference you are proposing to improve performance in carrying out the assignment (such as deleting some activity you consider unnecessary, or adding another, or proposing a different phasing of the activities). Such suggestions should be concise and to the point, and incorporated in your Proposal.]*

### **B - On Counterpart Staff and Facilities**

*[Comment here on counterpart staff and facilities to be provided by the Client according to Paragraph Reference 9.2 of the Instructions to Consultants including: administrative support, office space, local transportation, equipment, data, etc.]*



## Form TECH-4: Description of Approach, Methodology and Work Plan

*[Technical approach, methodology and work plan are key components of the Technical Proposal. You are suggested to present your Technical Proposal divided into the following three chapters:*

- a) Technical Approach. In this chapter you should explain your understanding of the objectives of the assignment, approach to the services, methodology for carrying out the activities and obtaining the expected output, and the degree of detail of such output.*
- b) Work Plan. In this chapter you should propose the main activities of the assignment, their content and duration, phasing and interrelations, milestones (including interim approvals by the Client), and delivery dates of the reports.*
- c) Organization and Staffing. In this chapter you should propose the structure and composition of your team. You should list the main disciplines of the assignment, the key expert responsible, and proposed technical and support staff.]*



## Form TECH-5: Team Composition and Task Assignments

<b>1. Technical/Managerial Staff</b>		
Name	Position	Task

<b>2. Support Staff</b>		
Name	Position	Task



## Form TECH-6 Curriculum Vitae (CV) for Proposed Professional Staff

1. **Position** [*only one candidate shall be nominated for each position*]: \_\_\_\_
2. **Name of Firm** [*Insert name of firm proposing the staff*]: \_\_\_\_
3. **Name of Staff** [*Insert full name*]: \_\_\_\_
4. **Date of Birth:** \_\_\_\_ **Nationality:** \_\_\_\_
5. **Education** [*Indicate college/university and other specialized education of staff member, giving names of institutions, degrees obtained, and dates of obtainment*]: \_\_\_\_
6. **Membership of Professional Associations:** \_\_\_\_
7. **Other Training** [*Indicate significant training since degrees under 5 - Education were obtained*]: \_\_\_\_
8. **Countries of Work Experience:** [*List countries where staff has worked in the last ten years*]: \_\_\_\_
9. **Languages** [*For each language indicate proficiency: good, fair, or poor in speaking, reading, and writing*]: \_\_\_\_
10. **Employment Record** [*Starting with present position, list in reverse order every employment held by staff member since graduation, giving for each employment (see format here below): dates of employment, name of employing organization, positions held.*]:

From [Year]: \_\_\_\_ To [Year]: \_\_\_\_

Employer: \_\_\_\_

Positions held: \_\_\_\_



## 11. Relevant Services Carried Out in the Last Five Years That Best Illustrate Qualifications

Using the format below, provide information on each assignment for which your Consultancy, either individually as a corporate entity or as one of the major companies within an association, was legally contracted.

Assignment Name:		Country:
Location within Country:		Professional Staff Provided by Your Consultancy(profiles):
Name of Employer:		Nº of Staff:
Address:		Nº of Professional Staff-Months; Duration of Assignment:
Start Date (Month/Year):	Completion Date (Month/Year):	Approx. Value of Services:
Name of Associated Consultants, If Any:		Nº of Months of Professional Staff Provided by Associated Consultants:
Name of Senior Staff (Project Director/Coordinator, Team Leader) Involved and Functions Performed:		
Narrative Description of Project		
Description of Actual Services Provided by Your Staff:		



**12. Certification:**

I, the undersigned, certify that to the best of my knowledge and belief, this CV correctly describes myself, my qualifications, and my experience. I understand that any wilful misstatement described herein may lead to my disqualification or dismissal, if engaged.

Date: ..... \_\_\_\_ *Day/Month/Year*

*[Signature of staff member or authorized representative of the staff]*

.....  
Full name of authorized representative: \_\_\_\_\_

.....





## Form TECH-9: Declaration of Eligibility

In accordance with the requirement of the Public Procurement Act, 2010 all Consultants must meet the following criteria, to be eligible to participate in a public procurement.

*[Consultant must provide a signed declaration on their company letterhead in the following format. If the Proposal is being presented to a joint venture or consortium all members must sign their declaration]*

Dear Sirs,

### **Re Tender Reference: NAMB03/20**

In accordance with the eligibility of the Swaziland Procurement Regulations and the Proposal documents we hereby declare that: -

- (a) We, including any joint venture partners or consortium partners, are a legal entity and have the legal capacity to enter into the contract;
- (b) We are not insolvent, in receivership, bankrupt or being wound up, our affairs are not being administered by a court or a judicial officer, our business activities have not been suspended, and we not the subject of legal proceedings for any of the foregoing;
- (c) We have fulfilled our obligations to pay taxes and social security contributions;
- (d) We have not, and our directors or officers have not, been convicted of any criminal offence related to our/their professional conduct or the making of false statement or misrepresentations as to their qualifications to enter into a contract within a period of five years preceding the commencement of the procurement proceedings; and
- (e) That we do not have a conflict of interest in relation to procurement requirement.

Signature: .....

Date: .....



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## SECTION 4: FINANCIAL PROPOSAL - STANDARD FORMS

*[Comments in brackets [ ] provide guidance to only the shortlisted Consultants for the preparation of their Financial Proposals; they should not appear on the Financial Proposals to be submitted.]*

Financial Proposal Standard Forms shall be used for the preparation of the Financial Proposal according to the instructions provided under para. 10.1 of Section 2.

FIN-1 Financial Proposal Submission Form

FIN-2 Total Costs

FIN-3 Breakdown of Costs by Activity



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## Form FIN-1: Financial Proposal Submission Form

[Address, Date]

To: NAMBoard

Dear Sirs:

We, the undersigned, offer to design, fabricate, deliver, install, and maintain a rooftop utility-interactive solar photovoltaic system in accordance with your EOI dated **11 November 2020** and our Technical Proposal. Our attached Financial Proposal is for the sum of [*Insert amount(s) in words and figures*<sup>2</sup>]. This amount is inclusive of taxes.

Our Financial Proposal shall be binding upon us subject to the modifications resulting from Contract negotiations, up to expiration of the validity period of the Proposal, i.e. before the date indicated in Paragraph Reference 9 of the Data Sheet.

Commissions and gratuities, if any, paid or to be paid by us to agents relating to this Proposal and Contract execution, if we are awarded the Contract, are listed below:

Name and Address of Agents	Amount and Currency	Purpose of Commission or Gratuity
_____	_____	_____
_____	_____	_____
_____	_____	_____

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

We remain,

Yours faithfully,

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

\_\_\_\_\_  
Name and Title of Signatory:

\_\_\_\_\_  
Name of Consultancy:

\_\_\_\_\_  
Address:

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<sup>2</sup> Amounts must coincide with the ones indicated under Total Cost of Financial proposal in Form FIN-2



## Form FIN-2: Total Costs

Item	Costs
	[Indicate Local Currency]
Total Costs of Financial Proposal	

## Form FIN-3: Breakdown of Costs by Activity<sup>1</sup>

Group of Activities (Phase): <sup>2</sup>	
Description: <sup>3</sup>	
Cost component	Costs
	[Indicate Local Currency]
Subtotals	

- 1 Form FIN-3 shall be filled at least for the whole assignment. In case some of the activities require different modes of billing and payment (e.g.: the assignment is phased, and each phase has a different payment schedule), the Consultant shall fill a separate Form FIN-3 for each group of activities. For each currency, the sum of the relevant Subtotals of all Forms FIN-3 provided must coincide with the Total Costs of Financial Proposal indicated in Form FIN-2.
- 2 Short description of the activities whose cost breakdown is provided in this Form.



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## ANNEX – A

### SECTION 5: TERMS OF REFERENCE

## Statement of Work

### Design Build Guidance Criteria for Roof Mounted Utility-Interactive Photovoltaic System

#### 1. PROJECT IDENTIFICATION

1.1. Project: Roof Mounted Grid Tied PV System

1.2. Location: NAMBoard Mobile Offices in 7 Border gates

#### 2. BACKGROUND

**2.1. Objective.** Contractor shall provide a total “turnkey” project including all necessary equipment, materials, design, manufacturing and installation services for the installation of a Rooftop utility-interactive photovoltaic system that shall produce a minimum of 3 kWh AC, approximately 3 kW DC capacity. Larger capacity systems that produce more than the minimum are an alternative and will be evaluated. The contractor should prepare system summary detailing each location, applicable equipment/size, predicted system energy production (kWh). In relations to any building mounted system, the contractor shall evaluate roof conditions and may remove the existing roof system and replace it with either an integrated roof/PV system or a new roof with PV system installed. See roofing specification for these requirements. This project shall meet all requirements of this Statement of Work and other specifications included that apply.

**2.2. Scope.** The contractor shall perform all professional services as necessary to provide NAMBOARD with a complete design package including the requirements outlined in this Statement of Work. The contractor shall install the project such that it is operational and compliant with all applicable standards, building codes, UTILITY interconnection requirements, and STATE requirements. The contractor shall include specifications, calculations and drawings in the design package, and turn it over to NAMBoard. After approval by NAMBoard of the final design package, the contractor shall provide all necessary construction to successfully complete the photovoltaic system installation. The awarded



contractor shall apply for and manage the rebate funding under a utility and with renewable energy certificates (RECs) paperwork.

### 2.2.1. **Design Guidelines for** Roof Mounted Grid Tied PV System.

#### **Design Guidelines for Rooftop PV system.**

Contractor shall develop a design for a new photovoltaic system in seven mobile offices located in selected border gates.

Mounting system shall limit roof penetrations and shall be either building integrated roof PV or fully ballasted. Mounting system design needs to meet applicable local building code requirements with respect to snow, wind, and earthquake factors.

Conduit penetrations shall be minimized.

If system is not building integrated or membrane sealed, system shall be fixed tilt (minimum 5 degrees tilt for flat roof or flush mounted for sloped roof) with an orientation that maximizes annual energy production.

All roof access points shall be securely locked at the end of each day.

System layout shall meet local fire department, code and ordinance requirements for roof access.

**2.2.2. Performance Criteria.** The following performance criteria shall be met for all arrays:

- Power provided shall be either 208V, 480V or 13.8 kV three phase compatible with the onsite distribution system. See drawings for options for connection voltage and location.
- Proposal shall provide estimated energy delivery for each array, for each month of the year and total for the year at the delivered voltage (208V, 480V or 13.8 kV). The estimated annual energy delivery for all arrays shall be a minimum of 3 kWhAC/year at point of interconnection (POI).
- The STC-rated power value will be entered into PVWatts using the nearest weather file to determine estimated energy delivery in kWh AC. A default value for the system losses of 14% shall be used.
- PV array shall mean one or more PV modules having that same orientation and on the same maximum power point tracking (MPPT) system. Every array with differing orientation shall have a separate MPPT system.



- All proposed/implemented PV array locations shall be shade free from 9AM until 3PM (solar time). Contractor shall provide documentation of shading calculations for exterior extents for each proposed array. These calculations may be modified for shading obstructions that will be removed and mitigated as part of the project. Suggested documentation would include sun path diagrams for exterior array locations or SunEye measurements.
- All PV hardware components shall be either stainless steel or aluminum. PV structural components shall be corrosion resistant (galvanized steel, stainless steel, composites, or aluminum).
- The project, including supports and power conductors, shall not interfere with roof drains, water drainage, expansion joints, air intakes, existing electrical and mechanical equipment, existing antennas, and planned areas for future installation of equipment shown on drawings.

**2.2.3. Production Metering.** The project shall have:

- At least one production meter at POI.

**2.2.4. Construction.** Perform all construction necessary for the successful installation of the system based upon the design generated from 2.2.1., 2.2.2., and 2.2.3.

## **2.3. Technical Requirements and Reference Materials**

**2.3.1. Code Compliance.** Installation and equipment shall comply with applicable building, mechanical, fire, seismic, structural and electrical codes. Non-listed products are only permitted for use as project components when a comparable useable listed component does not exist. Non-listed products proposed for use as components must be identified as such in all submittals.

The contractor shall use project components that are or are made of materials that are recyclable, contain recycled materials, and that are EPA or Energy Star rated if they are available on the market.

## **2.4. Roles and Responsibilities.**

**2.4.1. Contractor.** The contractor is required to provide:

- Design concepts
- Construction documents and engineering calculations that are signed and sealed by a licensed architect or engineer



- Submittals for materials and products
- Construction materials, equipment and labor
- Design and construction supervision / contract management
- Quality control plan (QCP)
- Safety plan
- Inspections and tests (per QCP)
- Manuals (design calculations, operation/maintenance, shop drawing, etc.)
- Commissioning of project
- Mentoring and training tribal building operating staff for operation and maintenance
- Operation and Maintenance during first year and optional service plan after the first year
- Web-based monitoring system for 20 years

**2.4.2. NAMBoard will:**

- Review for approval design submittals and QCP
- Witness inspections and test witnesses to verify attainment of performance requirements
- Make progress payments for design / construction as agreed

### **3. PROPOSAL CONCEPT DRAWINGS AND SPECIFICATIONS SUBMISSIONS**

**3.1. Concept Drawings.** The contractor shall provide NAMBoard with concept drawings with the proposal. The drawings must indicate the proposed location of the PV array(s) and access points along with a one-line electrical diagram showing inverters, transformers, meters, and interconnection locations. All drawings shall be submitted with dimensions shown in English units.

**3.2. Concept Information.** The proposal shall include major equipment information, proposed installation/interconnection information, applicable incentive information, and performance characteristics of the system. Identify an appropriate location for the solar PV inverter equipment and its related components and environmental control systems that will meet the following criteria:

- Ease of maintenance and monitoring
- Efficient operation
- Low operating losses
- Secured location and hardware
- Compatibility with existing facilities
- Avoidance of flood-prone areas
- Visual harmony



All products shall comply with the technical requirements shown under section 8, "Solar Electric Module Array". At a minimum, the proposed concept information shall include:

Equipment Information:

- System description
- Layout of installation
- Selection of key equipment and layout of equipment
- Performance of equipment components, and subsystems
- Specifications for equipment procurement and installation
- All engineering associated with structural and mounting details
- Controls, monitors, and instrumentation
- Operation and maintenance service plan

Installation Interconnection Information:

- Solar electric array orientation (degrees)
- Solar electric module tilt (degrees)
- Electrical grid interconnection requirements
- Integration of solar PV system with other power sources
- System type and mode of operation (utility interactive)

Performance Characteristics

- Shading calculation documentation
- Total system output
- Estimated kWh/month per array (shown over a 12month period)
- Warranties and guarantees

Applicable Incentives

- Identify all applicable incentives

Interconnection Agreement

- Provide confirmation that the PV systems will be designed to comply with applicable UTILITY interconnection requirements.



## Cost

- Total bid price of project including operation and maintenance for the first year, and optional service plan after the first year

## **4. DESIGN SERVICES**

Solar PV system shall be designed and engineered to maximize the solar energy resources, taking into consideration the customer's electrical demand and load patterns, proposed installation site, available solar resources, existing site conditions, proposed future site improvements, and other relevant factors.

Design Services for this project shall require a schematic design submission, a design development submission, a check set submission and a construction document submission. A final set of as-built drawings shall also be provided to NAMBoard. These submissions shall be delivered to NAMBoard based on the project schedule submitted and approved by NAMBoard. The design package shall include the following details (4.1-4.6).

**4.1. Timeline/Project Schedule.** Contractor is required to provide an estimate on project timeline and schedule.

**4.2. Post Award Conference.** Within 21 calendar days after receipt of the contract award. The meeting will be attended by NAMBoard team members and the contractor's personnel. At a minimum, the prime contractor's project manager and foreman, the primary designer, and a representative of any subcontractor performing over 25% of the work must attend. The meeting will be held at the project location. The purpose of the meeting will be to discuss the contractor's plan for completing the design and construction, including a construction schedule. A walk-through of the site will occur at the end of the meeting.

**4.3. Specifications.** A full set of specifications shall not be required for this project. However, specifications that express all information and demonstrate sufficient detail so as to direct the construction work outlined in this Statement of Work shall be required. The specifications package shall be coherent enough that any contractor not familiar with the project would be able to construct the project design. The specifications shall include all equipment information, proposed installation and interconnection information, and performance characteristics of the system.

**4.3.1.** All drawings, estimates, calculations, and specifications shall be in English units.



4.3.2. The contract shall take into account a construction plan producing a minimum disruption of day-to-day activities, utilities, services, etc.

#### 4.4. Construction Drawings

4.4.1. Provide drawings for each discipline required (architectural, structural, electrical, etc.), with separate plans for new work and demolition as well as special types of drawings where necessary, such as enlarged plans, equipment curbing and flashing details, roof penetration details etc. Drawings shall clearly distinguish between new and existing work.

4.4.2. Each drawing shall indicate project title, project number, array identification and location, A/E firm, A/E's address and/or phone number, contract number, drawing title, drawing type, drawing number, and key plan. A cover sheet shall be provided and shall include a list of the drawings, legend, vicinity map, and location map in addition to all items required for each drawing. Each A/E submission shall be clearly dated and labeled (e.g. 75% Design Development Submission, 100% Check Set Submission, Construction Document Submission, As-Built Drawings, etc.). Each drawing sheet submitted shall include a graphic scale in the lower right-hand portion of the sheet. The final set shall be stamped by a registered engineer and/or registered architect for the state in which the building/carport is located. At a minimum, the following drawings are required:

- Site plan including utility locations and connections – shall show staging and phasing requirements.
- Electrical plans – including single line diagram and utility interconnection.
- Electrical details.
- Roof plan and/or carport plan – showing the full layout of the system and detailing any obstacles that must be permanently or temporarily removed or relocated.
- Array support and mounting details.
- Any drawings that may be required to install a complete project.
- Water proofing details

4.4.3. The contract documents shall sufficiently define the Statement of Work and shall stand on their own.

4.4.4. Specifically address the means to keep the existing building accessible and operational by means of relocation and / or phasing.

**4.5. Calculations.** The contractor will provide the following calculations.



- 4.5.1. System Electrical Calculations.** Provide with design development and again with 100% check set.
- PVWatts calculation
  - System energy production calculation showing estimated monthly and yearly energy output for each array
  - Energy value and project cash flow
- 4.5.2.** Rooftop PV arrays are proposed, include roof structural loading calculations. These calculations shall specifically address roof loading from the PV array and confirmation that the loading does not exceed existing roof framing capacity as determined by your analysis. The documents included in this contract include a preliminary *Roof Structural Analysis*. This document provides some preliminary indications on the existing roofs capability to carry additional loading and is intended to assist during the proposal process in developing your concept design. It is not intended to alleviate the need to do array specific structural calculations during the subsequent design phases.

**4.6. Registration Seals.** Each final working drawing and each submitted specification and calculation document shall be signed by, bear the seal of, and show the state certificate number of the architect and/or engineer who prepared the document and / or is responsible for its preparation.

## **5. DESIGN SUBMISSIONS**

Awarded contractor will secure from governing agencies and the utility company all required rights, permits, approvals, and interconnection agreements at no additional cost to NAMBoard. The awarded Contractor will complete and submit in a timely manner all documentation required to qualify for available rebates and incentives.

**5.1. Design Reviews.** For each design / drawing submissions, NAMBoard reserves the right to make comments and request changes after the receipt of the submission. Reviews will be made by NAMBoard staff. As part of its review, NAMBoard may offer submission reviews to local code officials. NAMBoard shall provide review comments within fourteen (14) calendar days of receipt of the 75% Design Development Submission and the 100% Check Set Submission.

**5.2. Purpose.** NAMBoard will review the contractor design submissions to verify adherence to contract requirements. Design reviews by NAMBoard are not to be interpreted as resulting in an approval of the contractor's apparent progress toward meeting contract requirements but are intended to discover any information that can be brought to the contractor's attention that might prevent errors, misdirection, or rework later in the project. The contractor shall remain completely responsible



for designing, constructing, operating and maintaining the project in accordance with the requirements of this Statement of Work.

**5.3. Resolution of Comments.** The contractor shall respond to all design review comments in writing, indicating one of the following: (1) adoption and action taken, (2) adoption with modifications and action taken, (3) alternative resolution and action taken, or (4) rejection. In cases other than unqualified adoption, the contractor shall provide a statement as to why the reviewer's comment is inappropriate. If the contractor believes that any NAMBoard design comments or requested changes will result in a change in the contract cost, they shall notify NAMBoard within seven calendar days of receiving the comment(s) and provide a detailed cost estimate of anticipated contract modifications. Rejection items shall not go forward to the construction phase until adequate resolution to the rejected item has been approved by NAMBoard. Design review comments shall not relieve the contractor from compliance with terms and conditions of this contract. The contractor's comment resolution shall be transmitted to NAMBoard within seven (7) calendar days of comment receipt and incorporate discussions from the scheduled design comment review meetings.

## 6. Quality Control Plan

**6.1. Content.** For each performance and installation requirement, the QCP shall identify: item/system to be tested, exact test(s) to be performed, measured parameters, inspection/testing organization, and the stage of construction development when tests are to be performed. Each inspection/test shall be included in the overall construction schedule. The contractor is not relieved from required performance tests should these not be included in the plan.

The QCP is intended to document those inspections and tests necessary to assure NAMBoard that product delivery, quality and performance are as required. It also serves as an inspection coordination tool between the contractor and NAMBoard. An example of these inspections/tests is the final test/inspection for overall performance compliance of the system. Results from tests and inspections shall be submitted within 24 hours of performing the tests and inspections.

Performance tests will be conducted at the final commissioning/ acceptance testing, and one year after the acceptance date. Performance tests will include I-V curve traces for all PV strings. For project acceptance, measured performance at maximum power point must be at least 90% of expected performance, which will be adjusted for concurrently measured cell temperature and plane of array (POA) irradiance. This can be accomplished using a current industry standard I-V curve tracer with capability to compare measured PV string I-V curves with



nameplate performance of PV string compensated for concurrent cell temperature and POA irradiance measurements. If performance is less than 90% at the one-year performance tests (measured using the same method as for project acceptance), contractor shall promptly troubleshoot and correct any malfunction or issues as necessary to return project to 90% measured performance or better. The contractor shall supply NAMBoard with detailed documentation of malfunction or errors and all corrective actions taken.

**6.2. Submissions.** The QCP shall be prepared and submitted within 21 calendar days of the post award conference meeting and prior to any construction on-site. The QCP may be rejected as incomplete and returned for resubmission if there is any performance, condition or operating test that is not covered therein.

**6.3. Updating.** During construction, the contractor shall update QCP if any changes are necessary due to any changes or schedule constraints. NAMBoard shall be notified immediately of any schedule and/or procedural changes.

## **7. SOLAR ELECTRIC MODULE ARRAY**

### **7.1. Photovoltaic Modules**

7.1.1. PV modules shall be a commercial off-the-shelf product, and shall be properly installed according to manufacturer's instructions, and as specified herein.

7.1.2. The PV modules shall be installed such that the maximum amount of sunlight available year-round on a daily basis should not be obstructed. At a minimum, all PV arrays shall be shade free from 9 a.m. until 3 p.m. (solar time). All projects must include documentation of the impact from any obstruction on the seasonal or annual performance of the solar electric array.

7.1.3. The solar electric system shall produce the minimum annual AC energy output. If the system is proposed to produce more than the minimum required energy output to reduce the cost per delivered kWh then the system shall produce the "proposed" energy. The output will be adjusted if the actual yearly solar insolation received is less than that indicated by PVWatts. A normalizing calculation will be made to correct the output, so a contractor is not penalized for an extremely cloudy year.

7.1.4. System wiring shall be installed in accordance with the provisions of the EEC.



- 7.1.5. All modules installed in a series string shall be installed in the same plane/orientation.
- 7.1.6. PV modules shall have a 25-year limited warranty that modules will generate no less than 80% of rated output under STC. PV modules that do not satisfy this warranty condition shall be replaced.
- 7.1.7. Panel installation design shall allow for the best ventilation possible of panels to avoid adverse performance impacts.
- 7.1.8. Provide NAMBoard with 1% extra PV panels.
- 7.1.9. Warranty. Provide a panel manufacturer's warranty as a minimum: No module will generate less than 90% of its specified minimum power when purchased. PV modules shall have a 25-year limited warranty guarantying a minimum performance of at least 80% of the original power for at least twenty-five (25) years. Measurement made under actual installation and temperature will be normalized to standard test conditions using the temperature and coefficients published in the module specifications.

## 7.2. Inverter and Controls

- 7.2.1. Each inverter and associated controls shall be properly installed according to manufacturer's instructions.
- 7.2.2. Inverters shall be commercial off-the-shelf product, compliant List of Eligible Inverters:  
The inverter shall have at a minimum the following features:
- Peak efficiency of 96% or higher
  - Inverter shall have operational indicators of performance and have built-in data acquisition and remote monitoring.
  - The inverter shall be capable of parallel operation with the existing AC power. Each inverter shall automatically synchronize its output waveform with that of the utility upon restoration of utility power.
- 7.2.3. Warning labels shall be posted on the control panels and junction boxes indicating that the circuits are energized by an alternate power source independent of utility-provided power.
- 7.2.4. Operating instructions shall be posted on or near the system, and on file with facilities operation and maintenance documents.



- 7.2.5. Provide detailed lock out /tag out instructions for all equipment.
- 7.2.6. Power provided shall be compatible with onsite electric distribution systems.
- Install inverters and control panels in most optimum locations with appropriate environmental protection. Roofs may be used if structurally sufficient. If inverters are mounted outside they shall be shaded from direct sun from 10 a.m. to 6 p.m. in the months of June to August and be able to be secured.
- 7.2.7. The inverter and system shall utilize an astronomical timer or other means to shut down the inverter during night time to avoid energy usage at night.
- 7.2.8. Warranty. A 10-year manufacturers' warranty shall be provided.

### **7.3. Control Panel to Solar Electric Array Wire Runs**

- 7.3.1. Areas where wiring passes through ceilings, walls or other areas of the building shall be properly restored, booted, sealed and returned to their original condition.
- 7.3.2. All wiring between carports and the point of interconnection shall be underground and meet applicable codes.
- 7.3.3. Thermal insulation in areas where wiring is installed shall be replaced to "as found or better condition." Access doors to these areas shall be properly sealed and gasketed.
- 7.3.4. All field electrical devices shall have the capability to be locked as appropriate.

### **7.4. PV Monitoring**

- 7.4.1. The PV systems installed shall provide for monitoring by NAMBoard as well as by the general public on a vendor provided website. The public site is intended for education and outreach regarding renewable energy production and information on avoided greenhouse gas production. The public site shall be maintained for ten years.
- 7.4.2. Monitor by an IP addressable device and displayed graphically in a user-friendly manner the following parameters:
- AC energy



- Solar irradiance
- Show status of all equipment
- Provide electrical one line showing operation and performance of all equipment

Data shall be available both in real time and in archived in 15-minute averages. All monitoring hardware and monitoring equipment shall be provided by the contractor.

System shall also include metering for remote data collection and display on vendor-provided web site of system performance. System performance shall allow display during different monitoring periods from one hour to one year.

**7.4.3.** Provide networking equipment, engineering, programming, wiring, and software to allow remote connection by NAMBoard to the local area network.

**7.4.4.** Meters shall be installed in the main distribution panel (MDP) when possible. Meters shall not be mounted to the transformer housing without prior approval when there is no other reasonable place to mount it.

## **7.5. Transformers**

**7.5.1.** Stand-alone boost up transformers not incorporated into the inverters shall be ESERA premium efficiency. They shall be located next to switchgear housings where indicated on drawings.

## **7.6. Structural Requirements**

**7.6.1.** All structures, including array structures, shall be designed in accordance with all applicable state and local codes and standards.

**7.6.2.** The contractor shall provide structural calculations, stamped by a licensed professional structural engineer in the appropriate state.

**7.6.3.** All structural components shall be non-corrosive (galvanized steel, stainless steel or aluminum). All hardware shall be stainless steel or aluminum. All components shall be designed to obtain a minimum 40-year design life.

**7.6.4.** All roof penetrations shall be designed and constructed in collaboration with the roofing professional or manufacturer responsible for the roof and roofing material warranty for the specific site. The number and size of the penetrations



necessary to extend the power and control cable into the building must be kept to a minimum and grouped in a single location when practicable. All roof installations and weather proofing of penetrations shall not compromise the roof warranty, or if roof has no warranty, accepted best practice. The roof penetrations and roof connections shall be warranted for weather tightness for ten (10) years from the installer including parts and labor.

**7.6.5.** Rooftop installations where there is no parapet or the parapet is less than 42", a 6' safety zone from the roof edge to the PV system shall be maintained. A 3' clear path of travel shall be maintained to and around all rooftop equipment. Design shall address access for maintenance and replacement of the equipment. Appropriate fall protection or temporary platforms shall be incorporated into the design to allow for this maintenance and replacement work. If the inverters are mounted on the roof this equipment shall have permanent access walkways installed to facilitate monitoring and maintenance.

## **7.7. Attachment to Roof**

**7.7.1.** The system shall be mounted using the best means practicable, such as direct attachment or a fully ballasted system. All penetrations and structural connections associated with supports and conduit shall be kept to a minimum and shall be water-proof.

**7.8. Lightning Protection.** Provide surge protection on all electrical systems.

**7.9. PV System Installation Warranty.** The PV systems shall carry a ten (10) year workmanship warranty by both the manufacturer and the installer including parts and labor.

## **8. SHOP DRAWINGS/PRODUCT DATA**

**8.1. Submissions.** The Contractor shall submit shop drawings and product data / submittals, catalog cuts, etc. as stipulated herein. Shop drawing/product data submissions to NAMBoard shall be made after review and approval by the contractor. All approved product data and shop drawings shall be delivered to NAMBoard in one submission electronically.

The contractor shall combine all product data submission material into hard copy manuals for reference during all phases of construction. Shop drawings shall be bound with product data.



**8.2. Reviews.** Reviews of shop drawings and product data by NAMBoard are not to be interpreted as an approval of the Contractor's product selections. The contractor shall remain completely responsible for constructing the PV system in accordance with all contract performance requirements.

**8.3. Products for Submission.** The contractor shall provide shop drawings and product data for all systems, equipment and materials.

## 9. INSPECTIONS AND TESTS

**9.1. General.** The contractor shall perform inspections and tests throughout the construction process including: existing conditions/needs assessments, construction installation placement/qualification measurements and final inspections/tests performance certification. Periodic "quality" inspections shall also be conducted to support progress payments as identified in the contractor's QCP.

**9.2. NAMBoard Witness.** All inspections and tests, to verify documented contract assumptions, to establish work accomplishment, or to certify performance attainment shall be witnessed by NAMBoard and/or construction management (CM) and coordinated through the QCP.

**9.3. Final Inspections and Tests.** In order to ensure compliance with provisions of the CIC, an inspection by a licensed electrical inspector is mandatory after construction is complete. Unless otherwise identified, manufacturer recommendations shall be followed for all inspection and test procedures. The CIC inspection shall be conducted by an independent third-party electrical inspector familiar with PV systems. Provide qualifications of the proposed third-party inspector for review and approval prior to conducting the NEC inspections.

Tests shall include a commissioning of the array. Commissioning tests shall conform with the requirements in Section 7 (QCP). Commissioning shall be performed for the entire PV system. This data shall be used to confirm proper performance of the PV system.

**9.4. Documentation.** Inspections/tests required in the QCP shall result in a written record of data/observations. The Contractor shall provide two (2) copies of documents containing all test reports/findings. Test results shall typically include: item/system tested, location, date of test, test parameters/measured data, state of construction completion, operating mode, contractor inspector/NAMBoard witness, test equipment description and measurement technique.



## 10. Project Closeout

- 10.1. Preparation for Final Inspection and Tests.** The following steps shall be taken to assure the project is in a condition to receive inspections and tests.  
Finalize record drawings and manuals, indicating all "as-built" conditions.
- 10.2. Record Drawings.** The contractor shall maintain on site the working record drawings of all changes/deviations from the original design. Notations on record drawings shall be made in erasable red pencil or other color to correspond to different changes or categories of work. Marked-up drawings shall always be maintained at the contractor's on-site construction office, available for NAMBoard and/or CM to review. Record drawings shall note related change order designations on impacted work. When shop drawings indicate significant variations over design drawings, shop drawings may be incorporated as part of record drawings. Review of record drawings may be required before monthly payments can be processed.
- 10.3. As-Built Drawings and Specifications.** The Contractor shall provide "as-built drawings" and documents based upon actual site installation. Should NAMBoard determine that variations exist between finished construction and the as-built drawings, the contractor shall correct drawings to the satisfaction of NAMBoard.
- The contractor shall submit six (6) hard and soft copies containing the "as-built" drawings and specifications as CAD and PDF files.
- 10.4. Warranties and Guarantees.** Submit specific warranties and guarantees, final certifications and similar documents to NAMBoard upon substantial completion and prior to final payment. Include copies with operations and maintenance manual. All warranties shall be signed by a principal of the contractor's firm and sealed if a corporation.
- 10.5. Maintenance Manual.** Provide a detailed operation and maintenance manual including diagram of system components, description of normal operation; description of operational indicators and normal status of each, table of modes of operation, safety considerations, preventative maintenance requirements, troubleshooting and corrective actions; sources of spare parts and cut-sheets for all components. The contractor shall prepare six (6) hardcopies and soft copies containing the detailed Maintenance Manual. Submit to NAMBoard.
- 10.6. Spare Parts.** The contractor shall provide a recommend list of spare parts. At the minimum a set of combiner box fuses for each array shall be provided along with the required spare panels noted in Section 8.



**10.7. Demonstration and Training.** Provide NAMBoard approved training for designated personnel in the operation of the entire photovoltaic energy system, including operation and maintenance of inverter(s), transfer switches, panel board, disconnects and other features as requested by NAMBoard. Instruct the designated NAMBoard personnel in removal and installation of panels, including wiring and all connections. Provide NAMBoard with written instructions and procedures for shut-down and start-up activities for all components of the system. NAMBoard shall be permitted to video tape this training for official use.

**11. Operations and Maintenance Service.**

**11.1.** Provide operation and maintenance of the solar array systems for one year. Work shall include all manufacturer recommended maintenance as well as a 12month performance commissioning as outlined in in section 7.1 (QCP). NAMBoard shall be invited to witness all performance commissioning. A maintenance log shall be maintained to note dates, equipment and issues being resolved. Contractor should be available within 48 hours to respond to natural disasters (extreme storm, hail, wind events) to inspect array for damage.



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**ANNEX – B**

**SECTION 6: FORM OF CONTRACT**

*(Time-Based Assignment)*

**Contract for Services**

**Between**

**NAMBOARD**

*[Name of Client]*

**And**

*[Name of the consultant]*

**Date:** \_\_\_\_\_ *[day/month/year]*

THIS CONTRACT ("Contract") is entered into this \_\_\_\_\_ by and between NAMBOARD ("the Client") having its principal place of business at *Cnr. Masalesikhundleni and Mhabha street, Manzini*, and

..... (*the Consultant*) having its principal office located at:

.....

WHEREAS, the Client wishes to have the Company performing the services hereinafter referred to, and



WHEREAS, the Consultant is willing to perform these services,

NOW THEREFORE THE PARTIES hereby agree as follows:

**1. Services** (i) The Consultant shall perform the services specified in Annex A, "Terms of Reference and Scope of Services," which is made an integral part of this Contract ("the Services").

(ii) The Consultant shall provide the reports listed in Annex B, "Consultant's Reporting Obligations," within the time periods listed in such Annex, "Cost Estimate of Services, List of Personnel and Schedule of Rates" to perform the Services.

**2. Term** The Consultant shall perform the Services during the period commencing 23 December 2020 and continuing through to 25 January 2021 or any other period as may be subsequently agreed by the parties in writing.

**3. Payment** A. Ceiling

For Services rendered pursuant to Annex A, the Client shall pay the Consultant an amount not to exceed a ceiling of [.....]. This amount has been established based on the understanding that it includes all of the Consultant's costs and profits as well as any tax obligation that may be imposed on the Consultant. The payments made under the Contract consist of the Consultant's remuneration as defined in sub-paragraph B below and of the reimbursable expenditures as defined in sub-paragraph C below.

B. Remuneration

The Client shall pay the Consultant for Services rendered at the rate(s) per man/month spent (**or** per day spent **or** per hour spent, subject to a maximum of eight hours per day) in accordance with the rates agreed, "Cost Estimate of Services, List of Personnel and Schedule of Rates."

C. Payment Conditions

Payment shall be made in Emalangeni not later than 30 days following submission of invoices in duplicate to the Coordinator designated in paragraph 4.



#### **4. Project Administration**

##### **A. Coordinator**

The Client designates **Mr. Sipho Nxumalo** as Client's Coordinator; the Coordinator shall be responsible for the coordination of activities under the Contract, for receiving and approving invoices for payment, and for acceptance of the deliverables by the Client.

##### **B. Timesheets**

During the course of their work under this Contract, including field work, the Consultant's employees providing services under this Contract may be required to complete timesheets or any other document used to identify time spent, as well as expenses incurred, as instructed by the Project Coordinator.

##### **C. Records and Accounts**

The Consultant shall keep accurate and systematic records and accounts in respect of the Services, which will clearly identify all charges and expenses. The Client reserves the right to audit, or to nominate a reputable accounting firm to audit, the Consultant's records relating to amounts claimed under this Contract during its term and any extension, and for a period of three months thereafter.

#### **5. Performance Standard**

The Consultant undertakes to perform the Services with the highest standards of professional and ethical competence and integrity. The Consultant shall promptly replace any employees assigned under this Contract that the Client considers unsatisfactory.

#### **6. Confidentiality**

The Consultants shall not, during the term of this Contract and within two years after its expiration, disclose any proprietary or confidential information relating to the Services, this Contract or the Client's business or operations without the prior written consent of the Client.



- 7. Ownership of Material** Any studies, reports or other material, graphic, software or otherwise, prepared by the Consultant for the Client under the Contract shall belong to and remain the property of the Client. The Consultant may retain a copy of such documents and software.
  
- 8. Consultant Not to be Engaged in Certain Activities** The Consultant agrees that, during the term of this Contract and after its termination, the Consultants and any entity affiliated with the Consultant, shall be disqualified from providing goods, works or services (other than the Services or any continuation thereof) for any project resulting from or closely related to the Services.
  
- 9. Insurance** The Consultant will be responsible for taking out any appropriate insurance coverage.
  
- 10. Assignment** The Consultant shall not assign this Contract or Subcontract any portion of it without the Client's prior written consent.
  
- 11. Law Governing Contract and Language** The Contract shall be governed by the laws of the Kingdom of Eswatini, and the language of the Contract shall be English.
  
- 12. Dispute Resolution** Any dispute arising out of this Contract, which cannot be amicably settled between the parties, shall be referred to adjudication/arbitration in accordance with the laws of the Client's country.

FOR THE CLIENT

FOR THE CONSULTANT

Signed by \_\_\_\_\_

Signed by \_\_\_\_\_

Title: \_\_\_\_\_

Title: \_\_\_\_\_



# ATTACHMENT 1

## CLOSE RELATIVES OF EA PERSONNEL

The following persons, in addition to the spouse and children of Evaluating or Implementing Agencies (EA or IA) employees, are hereby considered to be their “close relatives:”

Mother	Grandmother	Aunt	Stepmother	Mother-in-law
Father	Grandfather	Uncle	Stepfather	Father-in-law
Brother	Granddaughter	Cousin *	Stepsister	Sister-in-law
Sister	Grandson		Stepbrother	Brother-in-law
Niece				Daughter-in-law
Nephew				Son-in-law

Relationships by adoption are equated to relationships by blood.

“Spouse” for these purposes, means:

- (i) a person to whom an EA or IA employee is legally married; or
- (ii) a person who is in a common law, de facto or spousal relationship with an EA or IA employee.

For the purposes of consideration of the “close relatives,” the relatives of a spouse defined in paragraph (ii) shall be deemed to be in-laws or step, as the case may be.

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\* Child of an Aunt or Uncle.

