NATIONAL MUSEUM
NASIONALE MUSEUM • MUSIAMO WA SETJHABA
BLOEMFONTEIN
an agency of the
Department of Arts and Culture

266, Bloemfontein, 9300
36 Aliwal Street / Aliwalstraat 36
South Africa / Suid-Afrika
☎ 051 - 4479609 🖷 051 - 4476273

Incorporating the satellites: | Insluitend die satelliete:
Oliewenhuis Art Museum | Oliewenhuis-kunsmuseum
Freshford House Museum | Freshford-huismuseum
First Raadsaal | Eerste Raadsaal
Wagon Museum | Waenhuismuseum
Florisbad Research Station | Florisbad-navorsingstasie

# REQUEST FOR A QUOTE FOR THE SUPPLY AND INSTALLATION OF AN AC GRID TIED COUPLED ROOFTOP SOLAR SYSTEM AT THE FIRST RAADSAAL AND WAGON MUSEUM

| | |
|---|---|
| **RFQ** | Solar02 |
| **ISSUE DATE** | 14 March 2024 |
| **CLOSING DATE** | 26 March 2024 |
| **CLOSING TIME** | 16h00 |

## 1. Background to the National Museum

The National Museum - a natural history, cultural history and art museum was established in 1877 and is a declared cultural institution, which resorts under the Department of Arts and Culture and is governed by a council. The mission of the National Museum is to provide heritage resources and an enjoyable experience to all people through quality research, conservation, education and exhibitions. More information about the organisation can be found at www.nasmus.co.za

## 2. Purpose and Background

The National Museum intends to appoint a suitable service provider with a proven track record for a once-off supply and installation of a rooftop solar system at The First Raadsaal and Wagon Museum which is situated at 95 ST Georges Street, Bloemfontein.

**The Occupational Health and Safety Act 1993 (Act No 85 of 1993), the South African electrician's work must comply with SANS 10142-1 (Edition 2), which is the most recent legislation applicable to the electrical trade shall apply**

**This, along with the OHS Act's regulations such as the Electrical Installation Regulations, Electrical Machinery Regulations, and General Safety Regulations**

## 3. Scope/Specifications with deliverables of Service(s) required

The supply and installation of a rooftop hybrid solar system.

2. Including rooftop **monocrystalline solar panels**, a smart **5KW inverter** & **lithium battery** to reduce the museum's grid dependency and provide power during loadshedding.

3. The system must be connected to the existing electrical installation of the museum and remain connected to the grid as backup for when the solar panels and battery cannot cover consumption. For example on cloudy & rainy days.

4. Automatic changeover between solar, batteries and grid is required.

5. Provide Earth and Lightning protection.

6. Provide Electric compliance certificate (COC)

7. Health & Safety File

8. A needs analysis to determine the size of the system required.

**PV Modules**

PV Modules shall be tier 1 and shall provide the maximum power production per meter squared ($m^2$).

The Contractor shall supply and install the PV modules to achieve the specified levels of performance for the required design life of 25 years under the prevailing site environmental conditions, which shall be determined by the Contractor.

Modules to be used shall be reliable modules with a proven track record in performance, operation and obtaining long-term debt (project finance). The Contractor shall ensure that PV modules are sourced from a **Tier 1 manufacturer**.

All modules supplied shall be of the same type and from a single manufacturer.

The quality of equipment supplied shall be generally controlled to meet the guidelines for the design included in the standards and codes listed.

All transportation, storage, handling and installation of the modules shall be in accordance with the specifications from the manufacturer to ensure that the module manufacturer's warranty is honored.

The module rated peak power shall be used to determine the peak power of the PV Plant. The peak power shall be the sum of the manufacturer's name plate data sheets for each individual module.

The Contractor shall be responsible to decide the module arrangements to minimize the losses due to mismatching.

Where the manufacturer's module flasher data show an IMPP deviation of more than 3%, PV modules shall be sorted into three groups to meet a set tolerance.

Only modules from the same set shall be used in in the same string. All records of the testing and grouping of Modules must be kept and presented to the Clients.

**Surge and lightning protection**

The Contractor shall carry out a risk assessment for lightning and install adequate lightning protection systems.

The Contractor shall design the lightning protection system in accordance with the latest edition of the SANS/IEC standards.

The lightning protection system shall protect the plant, inverters, control and monitoring systems and any other electrical and mechanical equipment against damage caused by lightning strikes.

The proposals to the Client must provide for adequate design against lightning induced overvoltage risk.

Overvoltage protection shall be installed at DC side as well as AC side of the inverter and within the PV arrays.

In general, the design of the DC system must ensure that cables are kept in parallel and as short as possible, while cable loops are also avoided or restricted.

Protection against direct strikes (direct strike lightning protection) shall be installed and coupling because of strikes elsewhere in the grid (indirect strike lightning protection) shall be taken into consideration and designed out of the system.

**Other**
PV module supplied must be Tier 1

Inverter supplied must be of a known type similar/equivalent – or approved. The following minimum certifications need to apply: (IEC61727, IEC62109-1/2, NRS 097-2-1 2017, IEE1547, IEE1547.1, IEE1547.2)

PV modules need to be fixed by means of antitheft fixings

Electrician must be registered with department of labour as a three-phase electrician (IE/MIE Number)

## 4 Compulsory requirements

The bidder must attach the following documents to the quotation as follows;

**4.1.1** The bidder should supply at least three by contactable written reference letters on the letterhead of the previous employer whereby the bidder successfully supplied and

installed solar system(s). The reference letters must be signed by the delegated senior official and must not be older than five years. (Reference letters which are older than 5 years will not be considered.)

**4.1.2** A valid copy or copies of relevant professional registration for installing Solar PV must be attached.

**4.1.3** Registration proof to be supplied (.i.e. Three (3) Phase Wireman's Licence). Expired licences won't be accepted.

**4.1.4** Contractor needs a CIDB rating of 1EP or higher, proof of CIDB grading must be attached.

**4.1.5** Proof of ECSA Registered Professional Engineer or Technologist must be attached

**4.1.6** Completed and signed SBD 4 forms must be attached.

**4.1.7** A copy of a detailed CV(s) and qualification(s) of the technician or expert to be used on this project must also accompany the quote.

**4.1.8** The bidder must be tax compliant and a tax pin issued by SARS must be attached.

**4.1.9** The bidder must be registered on CSD and CSD supplier report must be attached.

**4.1.10** The bidder must be compliant with COIDA, and proof of compliance with COIDA must be attached.

## 5 Minimum requirements

5.1.2 A valid copy of BBBEE certificate or completed and signed BBBEE declaration/Affidavit should be attached to score points on preferential procurement evaluation.

5.1.3 The bidder must be an active company registered in the Republic of South Africa, and a copy of CIPC should be attached.

**Matters for noting.**

1. Non-compliance to the above compulsory requirements will lead to a disqualification of the service provider, except where non-tax compliant with tax matters which is subject to grace period of at least 7 days that will be provided to a preferred service provider should that service provider be non-compliant following bid evaluation.

2. Failure by this preferred service provider to rectify its tax matters to a compliant status within the seven (7) days grace period provided will lead to an automatic disqualification.

3. Validity period for bids or formal written quotations submitted shall be valid for a minimum period of thirty (30) days. The formal written price quotations received from the service provider/supplier will be regarded as valid for 30 days despite expiry date less than 30 days indicated on a quote.

## 5 Bid evaluation.

All bidders will be subject to a three-stage technical evaluation process as follows;

5.1.1 Pre-screening, i.e. determination of compliance to compulsory requirements. The bidder will be required to pass pre-screening to be eligible for further evaluation.

5.1.2 Technical assessment. Means the measurement according to predetermined norms, as set out in the bid or quotation documents, of a service or commodity that is designed to be practical and used, working or operating, taking into account, among other factors, the quality, reliability, viability and durability of a service and the technical capacity and ability of a bidder. The bidder bidder will be required tom obtain a minimum of 80 points in order to be eligible for preferential procurement evaluation.

5.1.3 Preferential procurement calculation 80/20, whereby 80 is for price, and 20 points for specific goals as explained below.

## 6 Preferential procurement evaluation.

| | **Preference Points Criteria** | **Points Allocation** |
|---|---|---|
| 1 | Price | 80 |
| 2 | Specific goals | 20 |
| | Total Points | 100 |

In accordance with the Preferential Procurement Regulations of 2022, NM has determined the following specific goals for which preference points will be awarded:

**Goal 1: Broad-Based Black Economic Empowerment**

Section 10 of the B-BBEE Act enjoins every public entity to take into account and apply the B-BBEE Codes of Good Practice in determining and implementing a preferential procurement policy. NM will thus award preference points to suppliers based on their B-BBEE specific preferential goals.

**Goal 2: Empowerment of Local Businesses**

NM is in the Free State, a rural province on the margins of economic activity. To develop and empower local businesses based in the Free State, NM will award preference point to suppliers based in the Free State.

**Goal 3: Youth Empowerment**

Youth participation in the economy is crucial for the growth and development of the South African economy, but their participation has been limited by several factors. One of the main challenges for youth has been the high levels of unemployment. The unemployment rate for young people in South Africa is much higher than the national average, which makes it difficult for them to enter the labour market and participate in the economy.

In an effort to empower youth and encourage their participation in the economy, NM will award preference points to businesses which are at least 51% owned by youth.

**Goal 4: Women Empowerment**

Women participation in the economy is crucial for the growth and development of the South African economy, but their participation has been limited by several factors. For women, the challenge has been unequal access to economic opportunities, including education, training, and employment. Women in South Africa often face discrimination and gender-based violence, which can limit their ability to participate in the economy. Additionally, women tend to be concentrated in low-paying, informal sector jobs, which offer little security and limited opportunities for advancement.

To empower women and encourage their participation in the economy, NM will award preference points to businesses which are at least 51% owned by women.

**Goal 5: Empowerment of People with Disabilities**

People with disabilities face significant barriers to participating in the South African economy. According to the World Bank, about seven million South Africans have some

form of disability, and they are more likely to experience poverty and unemployment compared to those without disabilities.

People with disabilities often face discrimination in the labour market and have limited access to education, training, and employment opportunities. They may also face physical and attitudinal barriers, making it difficult for them to fully participate in the economy.

In an effort to empower people with disabilities and encourage their participation in the economy, NM will award preference points to businesses which are at least 51% owned by people with disabilities.

**Points awarded for each goal**

Preferential points will be awarded as per below scoring:

| CRITERION | 80/20 | 90/10 |
|---|---|---|
| B-BBEE Status | 4 | 2 |
| Businesses Based in the Free State | 4 | 2 |
| Ownership by Youth | 4 | 2 |
| Ownership by Women | 4 | 2 |
| Ownership by People with Disabilities | 4 | 2 |
| | **20** | **10** |

B-BBEE Status Points will be awarded as per below:

| B-BBEE STATUS | 80/20 | 90/10 |
|---|---|---|
| Level 1 | 4 | 2 |
| Level 2 | 3 | 1.5 |
| Level 3 | 2 | 1 |
| Level 4 and below | 1 | 0.5 |
| Non-compliant | 0 | 0 |

Ownership Points for Youth, Women, and People with Disabilities will be awarded as per below:

| OWNERSHIP | 80/20 | 90/10 |
|---|---|---|
| Above 50% | 4 | 2 |
| Above 40% | 3 | 1.5 |

| | | |
|---|---|---|
| Above 25% | 2 | 1 |
| Above 10% | 1 | 0.5 |

**Proof of claim**

Service providers must submit valid proof of claim for any of the above criteria as stipulated in the bid documents. Failure to submit proof of claim will not disqualify a bid but will result in points not being awarded for any criterion for which proof of claim has not been submitted or is invalid.

## 7 Technical Assessment

The bidder will be required tom obtain a minimum of 80 points on technical assessment in order to be eligible for preferential procurement evaluation.

| **FUNCTIONALITY CRITERIA** | **POINTS ALLOCATION** |
|---|---|
| Experience and Qualifications of one (1) Lead Technical – for similar scale Projects or services required.<br><br>**Score points;**<br><br>1 = 1 year<br>2 = 2 years<br>3 =3 years<br>4 =4 years<br>5 =5 years plus<br><br>Certificate, trade test, Diploma or higher = 5<br>No qualification = 1 | 40 |
| **Reference letters**<br>**Score points;**<br><br>1 = 3 reference letter<br>2 = 4 reference letters<br>3 = 5 reference letters<br>4 = 6 reference letters<br>5 = 7 plus reference letters | 60 |
| **Total points** | **100 points** |

## 8 Price

The bidder must provider a cost inclusive quotation including VAT if applicable. The financial offer must be provided in the table below:

8.1.1 A quote and all other compulsory documents must be forwarded to **scm@nasmus.co.za**. Hand delivered bids will not be considered.

| NO | DESCRIPTION | Unit | QTY | RATE | AMOUNT |
|---|---|---|---|---|---|
| | **BILL No.1** | | | | |
| | **ELECTRICAL WORKS** | | | | |
| | | | | | |
| 1 | 5Kw Hybrid inverter | No | 1 | | |
| | | | | | |
| 2 | Canadian Solar HiKu 545W Super High Power Mono PERC Solar Panel or Similar approved including roof mounting at 45° & accessories | No | 12 | | |
| | | | | | |
| 3 | Sunsynk Rack Mount 5.32kWh 51.2V Lithium Battery or similar approved | No | 2 | | |
| | | | | | |
| 4 | Single Phase AC Switch Disconnector 40A | No | 1 | | |
| | | | | | |
| 5 | Battery Disconnector with 125A Fuses | No | 1 | | |
| | | | | | |
| 6 | 600V Protection Box 2 Inputs 2 Outputs 16A Isolator Type II SPD | No | 1 | | |
| | | | | | |
| 7 | MC4 Pre terminated cable 2m (Pack of 2) | No | 1 | | |
| | | | | | |
| 8 | Multi Contact Cable Coupler Pack - MC4 | No | 2 | | |
| | | | | | |
| 9 | Sustainable 6mm² Black Panel flex | m | 5 | | |
| | | | | | |
| 10 | Sustainable 6mm² Black Double Insulated Halogen Free Solar Cable | m | 26 | | |
| | | | | | |
| 11 | Sustainable 6mm² Red Double Insulated Halogen Free Solar Cable | m | 26 | | |
| | | | | | |
| 12 | Sustainable 1500mm Red Battery Connector | No | 1 | | |
| | | | | | |
| 13 | Battery Hazard Label Pack | No | 2 | | |
| | | | | | |
| 14 | PV on Roof and Hazard Labels Pack | No | 1 | | |
| | | | | | |
| 15 | Earthling & Lightning protection | Item | | | |
| | | | | | |
| 16 | Health & Safety File | Item | | | |
| | | | | | |
| 17 | Supply & Install 3 core cable from the solar DB to the Main DB near the First Raadsaal Museum, including excavation not exceeding 2m deep | m | 20.6 | | |

| | | | | | |
|---|---|---|---|---|---|
| | including an electric cable warning tape 150mm x 500m | | | | |
| | | | | | |
| 20 | Electrical Compliance Certificate (COC) | Item | | | |
| | | | | | |
| | **FINAL SUMMARY** | **Ref** | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| **1** | **Electrical Work** | **Bill No.1** | | | |
| | | | | | |
| | **SUB TOTAL** | | | | **R** |
| | | | | | |
| | **VAT @ 15%** | | | | **R** |
| | | | | | |
| | **TOTAL COST INCL. VAT** | | | | **R** |