



**National
Research
Foundation**

INVITATION TO BID

APPOINTMENT OF A CONTRACTOR WITH CIDB GRADING 3SQ OR HIGHER TO REMOVE THE EXISTING GATES AND WIREFENCE, TO SUPPLY, DELIVER AND INSTALL NEW GATES AND A NEW PERIMETER FENCE WITH AN ELECTRIFIED FENCE MOUNTED ABOVE FOR THE NATIONAL RESEARCH FOUNDATION PRETORIA CAMPUS

Bidder Name:		
Number:	NRF/RISA B&M/45/2022-23B	
Closing Date	25 August 2023	
Closing Time:	11:00am	
Compulsory Briefing Session:	Yes	
Date:	04 August 2023	
Time:	11:00am	
Venue:	National research Foundation (NRF) Albert Luthuli Auditorium	
Address:	Meiring Naude Road, CSIR South gate, Brummeria, Pretoria	
Contact Person	Ovayo Mjamekwana (012 481 4083) O.Mjamekwana@risa.nrf.ac.za	
Electronic Bid Submission	Size of the email (document): 20MB. If files must be split, they must be numbered sequentially.	
Email Address	bids@nrf.ac.za Emailed PDF file name format is "Bid Number / Supplier Name" Refer Annexure A for guidance on electronic submissions.	
Bids Naming	Bid submissions must be in electronic format Split documents into: 1. Technical Proposal 2. Pricing Schedule	
Enquiries are directed in writing to:		
Section	Supply Chain Management	Project Manager
Contact person	Moshidi Mosena	Ovayo Mjamekwana
E-mail address	M.Mosena@risa.nrf.ac.za	O.Mjamekwana@risa.nrf.ac.za

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MANDATORY REQUIREMENTS

1. CIDB Category and Grading for this Project	3 SQ or higher
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A bidder failing to meet the stipulated mandatory requirement will automatically be disqualified.

ORGANISATION DETAILS

The legal name of the organisation is the National Research Foundation, established by Act 19 of 2018, as the juristic person that makes this bid invitation and will contract with the awarded bidder.

The address for delivery of notices is:

National Research Foundation Building
 CSIR Campus South Gate
 Meiring Naude Road
 Brummeria
 Pretoria
 0001

BIDDING CONTRACTOR INFORMATION

Name of Bidder

Contact Person

Postal Address

Street Address

Telephone Number

Code

Number

Cell Phone Number

Code

Number

E-Mail Address

Tax
Compliance
Status

Tax Compliance
System PIN

Central Supplier Database
No.

MAAA

B-BBEE Status Level
Verification Certificate

Tick Applicable Box

☐ Yes ☐ No

B-BBEE Status
Level Sworn

Tick Applicable Box

☐ Yes ☐ No

BIDDING CONTRACTOR INFORMATION

Affidavit

[A B-BBEE status level verification certificate/sworn affidavit (for EMEs & QSEs) must be submitted in order to qualify for preference points for B-BBEE]

Are you the accredited representative in South Africa for the goods/services/works offered?

☐ Yes ☐ No
[If yes enclose proof]

Are you a foreign-based supplier for the goods/services/works offered?

☐ Yes ☐ No
[If yes, answer the following questionnaire]

Is the entity a resident of the Republic of South Africa (RSA)?

☐ Yes ☐ No

Does the entity have a branch in the RSA?

☐ Yes ☐ No

Does the entity have a permanent establishment in the RSA?

☐ Yes ☐ No

Does the entity have any source of income in the RSA?

☐ Yes ☐ No

Is the entity liable in the RSA for any form of taxation?

☐ Yes ☐ No

If the answer is "No" to all of the above, then it is not a requirement to register for a tax compliance status system pin code from the South African Revenue Service (SARS) and if not register as per 2.3 below.

BID SUBMISSION PROCEDURAL REQUIREMENTS

BID SUBMISSION		
1.	Bids must be delivered by the stipulated time to the correct address. Late bid will not be accepted for consideration.	
2.	All bids must be submitted on the officially provided forms and in the manner prescribed in the bid document.	
3.	The successful bidder will be required to fill in and sign the contract signature form (SBD7.1) for this contract.	
4.	Number of electronic bid documents for contract signing	1
5.	Number of EVALUATION copies (Mark pages as “Evaluation Copy” and number all pages sequentially):	1 pdf document
6.	Price validity period from date of closure	150 days
7.	<u>Original bid documents for contract signing</u> Bidders must submit the specified original bid documents (including the bidder’s response to the specification and the bidder’s pricing) in hard copy format (paper document) to the NRF. This serves as the original master set annexed to the mandatory SBD 7.1 contract signing form creating the legal contract between the appointed bidder and the NRF. The master set remains at the NRF and has precedence over any other copies in the case of any discrepancies within the other sets of documents. The bidders attach the originals or certified copies of any certificates stipulated in this document to these original sets of bid documents. The signed legal contract constitutes the closure of the competitive bid/tender/request for quotation process and sets out each party’s obligations for executing the contract.	
TAX COMPLIANCE REQUIREMENTS		
1.	Bidder must ensure compliance with their tax obligations.	
2.	Where the bidder is registered on the Central Supplier Database (CSD), a CSD number must be provided	
3.	Bidders are required to submit their unique personal identification number (pin) issued by SARS to enable the organ of state to verify the taxpayer’s profile and tax status. Application for tax compliance status (TCS) pin is made via e-filing through the SARS website www.sars.gov.za .	
4.	Bidders may also submit a printed TCS certificate together with the bid, available via e-filing through the SARS website www.sars.gov.za .	
5.	In bids where consortia/ joint ventures/ sub-contractors are involved; each party must submit a separate TCS certificate/ PIN/CSD number.	
6.	No bids will be considered from persons in the service of the state, companies with directors who are persons in the service of the state, or close corporations with members’ persons in the service of the state.	

BIDDER NEEDS TO KNOW

ACKNOWLEDGEMENT OF READING EACH PAGE

The bidder warrants by signature in this document that the bidder has read and accepts each page in this document including any annexures attached to this document.

CENTRAL SUPPLIER DATABASE REGISTRATION

NRF requests bidders to register on the Central Supplier Database and to include in their bid their Master Registration Number (Supplier Number) in order to enable NRF to verify the supplier's tax status on the Central Supplier Database.

CLARIFICATION

If the respondent wishes to clarify aspects of this request or the acquisition process, they can send their queries to the contact officials listed under the enquiries section above. NRF distributes the response to a clarification request to all respondents that have attended the compulsory briefing session. NRF does not provide the origin of the request to any party.

RESPONSE PREPARATION COSTS

NRF is not liable for any costs incurred by a bidder in the process of responding to this invitation, including on-site presentations.

COUNTER PROPOSALS

No counter proposals are accepted.

COLLUSION, FRAUD AND CORRUPTION

Any effort by the bidder to influence evaluation, comparisons, or award decisions in any manner will result in the rejection and disqualification of the bidder concerned.

FRONTING

NRF supports the spirit of broad based black economic empowerment and recognizes that achieving real empowerment is through individuals and businesses conducting themselves in accordance with the Constitution and in an honest, fair, equitable, transparent, and legally compliant manner. Against this background, NRF condemns any form of fronting. NRF's evaluation committee, in ensuring that bidders conduct themselves in an honest manner will, as part of their evaluation processes where applicable, conduct or initiate the necessary enquiries/investigations to determine the accuracy of the representation made in the bid documents. The onus is on the bidder to prove that fronting does not exist. Where NRF's evaluation committee establishes a potential breach of this requirement, NRF notifies the bidder of the potential breaches. Where the bidder fails to respond to the notification within a period of 7 days from date of notification, NRF will invalidate the bid/contract. Such failure may result in the restriction of the bidder to conduct business with the public sector for a period not exceeding 10 years, in addition to any other remedies the NRF may have against the bidder concerned.

DISCLAIMERS

NRF has produced this document in good faith. The NRF, its agents, and its employees and associates do not warrant its accuracy or completeness. NRF makes no representation, warranty, assurance, guarantee or endorsements to any provider/bidder concerning the document, whether with regard to its accuracy, completeness or otherwise. NRF shall have no liability towards the responding service providers or any other party in connection therewith.

GENERAL DEFINITIONS

"Bid" means a written offer in a prescribed or stipulated form in response to an invitation by the National Research Foundation for the provision of goods or services, through price quotations, advertised competitive bidding processes or proposals.

"Contract" means the entire bid document inclusive of scope of work, specification, price conditions, price quote table, service delivery conditions, performance conditions with their key performance indicators, and general conditions when

BIDDER NEEDS TO KNOW

attached to the Standard Bidding Document 7.1 (SBD 7.1) which has been signed by the awarded bidder and the National Research Foundations.

“Equipment” means the operational unit including spares, replacement components, consumables, sub-systems, firmware, and software that delivers the specified output.

“Functionality” means the ability of a bidder to provide goods and/or services in accordance with specifications as set out in these bid documents.

“SBD 1” means this entire bid document.

B-BBEE DEFINITIONS

“B-BBEE” means broad-based black economic empowerment as defined in section 1 of the Broad-Based Black Economic Empowerment Act.

“B-BBEE status level of contributor” means the B-BBEE status of an entity in terms of a code of good practice on black economic empowerment, issued in terms of section 9(1) of the Broad-Based Black Economic Empowerment Act.

“Broad-Based Black Economic Empowerment Act” means the Broad-Based Black Economic Empowerment Act, 2003 (Act No. 53 of 2003).

“EME” means an Exempted Micro Enterprise in terms of a code of good practice on black economic empowerment issued in terms of section 9 (1) of the Broad-Based Black Economic Empowerment Act.

“Proof of B-BBEE status level of contributor” means:

- a. B-BBEE Status level certificate issued by an authorized body or person;
- b. A sworn affidavit as prescribed by the B-BBEE Codes of Good Practice;
- c. Any other requirement prescribed in terms of the B-BBEE Act.

“QSE” means a qualifying small business enterprise in terms of a code of good practice on black economic empowerment issued in terms of section 9 (1) of the Broad-Based Black Economic Empowerment Act.

THE BIDDER SELECTION PROCESS

Stage 1 – Verification of the ability of a bidder to provide the services in accordance with specifications and conditions as set out in the bid documents.

Compliance to submission requirements

Bidders warrant that they can provide the goods and/or services in accordance with the specifications and conditions set out in this bid document. Bidders warrant that their bid document has as a minimum the specified documents required to verify their ability to deliver the specifications and conditions as set out in the bid documents. NRF’s evaluation committee disqualifies bidders where they do not provide the required documents, marked as mandatory (m), to verify their ethical conduct, the delivery of the specification, and their contract execution during the period of the contract.

Compliance to technical specifications

NRF’s evaluation committee disqualifies bidders when they are not compliant with the technical specifications as demonstrated by their own submitted documents.

Due Diligence Research

NRF confirms the recommended bidder(s)’s reference letters with referees to confirm the recommendation(s). Where circumstances justify it, the NRF conducts interviews with bidders for them to clarify their bid submission to the evaluation committee.

Stage 2 – Price competition

Compliant bidders from the previous stage compete against each other on price at the stated minimum threshold level. NRF's evaluation committee compares each bidder's pricing quote on an equal and fair comparison basis equitable to all bidders, taking into account all aspects of the bid's pricing requirements. NRF's evaluation committee ranks the qualifying bids on points scored on the basis of both Price and B-BBEE as indicated on SBD 6.1 in accordance with the PPPFA.

Stage 3 – Award and Contract Signing

The bid evaluation committee recommends to its Delegated Authority the bidder with the highest combined score for the contract award subject to the final verification of the bidder's tax status as set out in the SBD 1 through the CSD and, for non-resident respondents, submits the SBD 1 questionnaire to obtain the Confirmation of Tax Obligations letter from the South Africa Revenue Services.

Cancellation of the bid prior to award

NRF cancels this bid invitation prior to making an award where

- a) Due to changed circumstances there is no need for the specified procurement in the document, or
- b) No bids meet the minimum required specification, or a material irregularity occurred in the bid process, or
- c) Where the price is too low/high in comparison to the pre-bid defined market price range with no bidder prepared to negotiate the price into the determined market price range.

CONTEXT	
INTRODUCTION TO THE NRF	
The legal name of the employer is the National Research Foundation, established by Act 19 of 2018, as the juristic person that makes this bid invitation and contracts with the awarded bidder. The NRF supports and promotes research and human capital development through funding, the provision of National Research Facilities and science outreach platforms and programmes to the broader community in all fields of science and technology, including natural science, engineering, social science and humanities.	
LOCALITY OF THE SITE OF THE PROPOSED INFRASTRUCTURE	
The site for this project is at NRF Head Office Building, CSIR Campus South Gate, Meiring Naude Road, Brummeria, Pretoria.	
SITE RESTRICTIONS	
None	
CONTEXT OF THIS PROCUREMENT	
For security reasons, the NRF is replacing the entire perimeter fence that is no longer repairable despite the ongoing maintenance completed over the past 45 years. The entire perimeter must be fenced in with high-security fencing that is identical to or comparable to the one that is used at the recently upgraded entrance gate. The NRF requires a contractor to supply, deliver, and install a new perimeter security fence in addition to decommissioning the old one. The full context of the bid is specified in the Scope of Works section of this document.	
CONTRACT PERIOD	
The contractual period is for four (4) months. The commencement date will be the date of the final signature on the SBD 7.1 Contract Signing Form.	

SCOPE OF WORK

NRF requires the removal of the existing wire fence and gates, and to supply, deliver and install a new perimeter fence with an electrified fence above it, including gates for the National Research Foundation Pretoria Campus. The new security fence to be supplied must conform to the specification as detailed below and the supply contractor must carry out the scope of work which is summarised below:

- a. Remove the old existing security fence is 820m, at the same time as the installation of the new fence, so that when each section of the old fence is removed, the new section needs to be on place the same day.
- b. Remove existing fence concrete footer and replace with new fence concrete footer.
- c. Install new perimeter fence of 820m. The supply contractor must measure the fence to obtain the exact length.
- d. The fence must be Clear vu fence or similar. The similar to be approved as per the current installed fence and gates at the main gate entrance of the NRF. The new perimeter fence needs to complement the existing units which have been installed. The bidder will be required to provide samples of the similar fence.
- e. The fence needs to prevent a decent grip when trying to climb or to cut the fence with bolt cutters.
- f. The fence design must be tamper-proof and of high-quality craftsmanship to provide safety and security, with the maintenance-free bond coating having a guaranteed lifespan of 10 years or more.
- g. To increase the security of the fence, multi spikes must be installed on top the fence that is powder coated, black shark-tooth spikes measurement is 1.5m in length and 95mm in height.
- h. The bottom of the fence must be concreted into the foundation and the concrete must be exposed by 100mm above the soil level.
- i. Supply and install one double swing gate (Width 2m x Height 3m) to match Clear vu , or similar approved fence at the electrical mini-sub RM6 unit which will be opening towards Meiring Naude roadside.
- j. Supply and install one pedestrian swing gate (Width 1m x Height 3m) to match Clear vu or similar approved fence at the electrical mini-sub RM6 unit which will open to the inside of the NRF property.
- k. An Electrical fence must be installed consisting of a 6-wire system on the inside of the fence mounted at the top section of the perimeter fence this include the RM6 unit. Electrical fence to cover the whole perimeter of the newly installed Clear vu or similar fence and the existing fence entrance fences and gates.

The NRF reserves the right to prove equivalency of all products supplied according to industry standards. The detailed specification of the fence must consist of Class A materials that are guaranteed for at least 10 years, and that will be assembled in panels between posts as follows:

1. The Perimeter fence wire and the post requirements:

- a. **Mesh panel height:** must be 3,1m (Mesh without joints solid panel).
- b. **Mesh panel width:** must be 2.5m.
- c. **Meshed panel aperture size:** must be 80mm x 15mm.
- d. **Wire Diameter:** not less than 3mm on the vertical on 4mm on the horizontal.
- e. **Post connectors:** fastened by concealed stainless shear-off bolts and anti-tamper screws.
- f. **Fence wire and posts coating:** must be heavy galvanized, black powdered-coated and fully corrosion, and rust resistant.
- g. **Panel bends in the fence:** must be 45mm rigidity bends.
- h. **Post:** I-Beams IPE 140, Heavy galvanized and powder coated in black colour, for corrosion and rust resistance. The Strain posts must be installed on every corner and the rest of the fence were applicable.
- i. **Fixing:** Welded to posts.
- j. **Security fencing toppings:** Powder coated black shark- tooth spikes measuring must be 1,5m length and 95mm height (Multi spikes).
- k. **Foundation and base of fence:** 25MPA Concrete strip measuring (Width) 300mm x (Depth) 400mm of which 100mm is above ground for the full length of fence (to prevent holes under fencing). The panels must be embedded into the concrete strip above ground without gaps. The bottom of the fence must be concreted into the foundation of which the concrete must be exposed 100mm above the soil level.
- l. **Concrete Post Base:** 25MPA concrete base (Breadth) 300mm x(Width) 300mm x (Depth) 600mm.
- m. **Double Swing Gate:** One entrance gate consisting of two swing gates of (Width) 2m x (Height) 3m to match new fence.
- n. **Pedestrian Gate:** One swing gate of (Width) 1m x (Height) 3m to match new fence.

2. Electrical Fence requirement for the complete length of the perimeter fence

- a. **Electrical Fence Energizer:** a two zone with keypad (Installed in the guard house).
- b. **Communication:** must be viewed and operated over the network and cell phone applications.
- c. **Electrical HT Cable:** Single core 1.6mm.
- d. **Electrical Fence posts:** must be integrated onto the new fence posts inside the premises with 6 bobbins.
- e. **Electrical fence wire:** Solid Aluminium alloy 1.6mm.
- f. **Gate Contacts:** All gates must be fitted with 2-way in-line gate contacts.
- g. **Electrical Fence siren:** 15watt siren installed at guard house.
- h. **Electrical Fence Alarm strobe light:** Red 12V LED strobe light installed at guard house.
- i. **Electrical Fence timed light:** Fence light HV dark grey.
- j. **Electrical Fence lightning protection system:** Two zone Lightning protection – Dual Poles - one for every zone as per SANS 10222.
- k. **Electrical Fence wire tensioning system:** Combo tensioner hybrid – BD 450Kg.
- l. **Electrical Fence earth spikes:** As per SANS 10222.
- m. **Electrical Fence Warning signs:** As per SANS 10222.
- n. **Electrical fence must be installed on the existing gates and fence sections around the main gate entrance.**
- o. **Electrical fence Certificate of Compliance (COC) must be provided after installation.**
- p. **Supply and deliver two Fence scope multi tool with pouch for NRF use.**
- q. **Supply and deliver two Professional Crimping Tool (12-10AWG)**

3. Emergency Backup system for guard house

The following is the minimum requirements for the backup system components.

- a. Solar panel 545 watt (x2) with installation bracket (Mounted on the guard House roof)
- b. Freedom Won Lithium Iron Phosphate Battery data sheet in annexure D or equivalentx1.
- c. Cerbo GX Control and GX Touch Screen unit data sheet in annexure C or equivalent x1
- d. Victron MultiPlus-II GX 5kwh inverter/charger in annexure B or equivalentx1
- e. Communication cables (subject to verification during compulsory site visit)
- f. Interface cables (MK3-USB VE Bus to USB and VE Direct to USB interface cable)
- g. Battery disconnect Neg and Positive 160A (Including Blade Fuses 125A)

4. Installing posts and standards

Straining posts must be erected at all ends, corners and bends in the line of fencing and at all junctions with other fences. Straining posts must not be spaced more than 2.5m apart. The height of the posts above the ground must be the same height as the perimeter fence.

Posts must be accurately set in holes and, must be provided with concrete bases 300mmx300mmx600mm as per specification. Holes must be dug to the full specified depth. All posts and standards must be accurately aligned and set plumb and must be planted with the overhang and at right angles to the direction of the fence.

5. Perimeter Fencing

Tendered rates must fully include all labour, construction plant, materials and equipment, loading, transportation and offloading required for the supply and installation of the Clear vu or similar approved fencing.

6. Fence post with concrete base footer

Tendered rates must fully include all labour, construction plant, materials and equipment, loading, transportation and offloading required for the supply and installation of the fence post with concrete base

7. Disposal of old fence requirement:

- a. The existing fence must be dismantled and the manner in which this is done must be indicated in the project plan.
- b. The existing fence must only be removed once it is safe to do so, without compromising campus security.
- c. The contractor must scrap, recycle or dispose of old materials in an environmentally friendly manner which must be stated in the project plan

8. Project Management

The bidder must provide a detailed project plan that must include at least the timespan of the project in days and includes material delivery, in the bid response that must at least specify the following:

- a. Time from order of materials to delivery.
- b. Process required to prepare for the new perimeter fence installation, and removal of the old fence to ensure that at no time the campus security is compromised.
- c. Time required to install the new fence.
- d. Time required to remove the old fence.
- e. Time required to install the electrical fence.
- f. Expected time of completion.
- g. The project plan, which must also indicate human resources, activities, critical paths, and other interdependencies, must be presented in PDF format for ease of review.

9. Bidder's Mandatory documents

The bidder must provide a comprehensive proposal that complies with the Scope of Work and includes the following:

- a. Company organogram.
- b. Project plan and schedule, including risk management aspects.
- c. CIDB Category and a valid Grading of 3 SQ or higher.
- d. Electrician trade certificate.
- e. Qualified Electricians with IE or MIE.
- f. Copy of a valid COIDA (Compensation for Occupational Injuries and Diseases) registration certificate, e.g. Letter of Good Standing.
- g. Bidder must submit CSD Report reflecting legal details, registration numbers, details of directors, and shareholding.
- h. List of projects indicating installation of a Clear vu or similar perimeter fence, with address and contract value in the last 60 months.
- i. The bidder must submit a list of at two contactable references whom they have installed a Clear vu fence or similar perimeter fence as required in this bid document. The references must indicate the address where the work was completed. The NRF will contact these companies directly to confirm the references. The bidder must submit a minimum two completion certificates for the installation of a Clear vu or similar perimeter fence indicating the value and contactable details of the client whom the services were rendered for.

10. The following documents must be submitted by bidders:

- a. The bidder must submit a copy of a valid public liability, product liability and professional indemnity insurance of at least R1 million or a letter of intent from the insurance company.
- b. The bidder must submit a copy of an emergency backup system drawing and proposal before installation of the system.
- c. The bidder must submit a copy of the Electrical Fence site plan and drawing indicating Energizer, Lightning protection system, Gate contacts and Earth Spikes as per SANS 10222 to the NRF project Manager before

installation.

- d. The recommended bidder will be required to submit certificates of compliance for the electrical fence and installation and the emergency backup system.
- e. The recommended bidder will be required to submit a safety file to the NRF project manager within 5 days before commencement of works.
- f. Bidders must provide a workmanship guarantee letters for the following:
 - Electrical fence installation (3-year guarantee)
 - Perimeter fence (3-year guarantee)
 - Emergency Back-up system (3-year guarantee)

11. Warranties

All items that are found defective or not correct within one year of date of delivery, will be replaced, repaired and corrected by the bidder at their own costs to the satisfaction of the National Research Foundation.

12. Bidder's risk management to this contract

- a. The bidder must provide a risk plan setting out identified risks, if any and the mitigation to eliminate possible risks. Should the bidder be unable to secure the incomplete section of the perimeter fence, the bidder must indicate the controls and other security measures that they will implement to eliminate this risk to expose/breach the security of the NRF campus.

13. Safety Conditions

- a. All work must be performed in compliance with the Occupational Health and Safety Act (Act 85 of 1993).
- b. The bidder is required to present a Health and Safety plan for the project that must include all specific Health & Safety protocols implemented in accordance with prevailing statutory regulations.
- c. It is the sole responsibility of the service provider to ensure that the equipment to be serviced is safe to work on. The NRF does not and will not accept any liability.
- d. It is an explicit condition of this tender that the service provider is solely responsible for the safety of all personnel involved in this project to install the security fence.
- e. The bidder must compile a safety file and submit to the NRF project manager.
- f. It is the bidder responsibility to ensure that all possible safety procedures are followed when working on any equipment or structure and to bring unsafe conditions under the attention of the respective NRF representative before commencing any installation work whatsoever.
- g. The work area must be always in a safe and clean order.
- h. The NRF property must be always secured and should not stand open or unenclosed. During after-hours when fence is removed, precautionary measures must be put in place to always secure the NRF property during the removal and installation of the new fence by the contractor. All extra security costs will be for the account of the bidder.
- i. The electrical fence must be installed as per SANS 10222.
- j. The emergency backup system must be installed as per SANS 10142.

ANNEXURES CONTAINING DETAIL STATEMENT OF WORK

The annexures are attached to this document. The specification sections below contain the statement of work at bidding level of detail.

There are no other applicable documents or drawings for this contract. The requirements and expectations for this contract are set out in this document.

DOCUMENT NUMBER	DOCUMENT TITLE
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Annexure A	Site plan
Annexure B	Inverter/charger data sheet
Annexure C	Control/monitoring unit data sheet
Annexure D	Energy storage/ battery data sheet

CONTRACT ORGANISATION

The contract organisation is NRF-RISA.

ENVIRONMENT, HEALTH AND SAFETY MANAGEMENT

The contractor provides the following services:

- Health and Safety Management

Occupational Health and Safety when working on NRF sites:

1. All personnel performing work on NRF site/s as part of this contract are responsible to obtain safety induction.
2. Over and above the obligations provided by the Occupational Health and Safety Act (OHS Act No 85 of 1993 and its Regulations, known as 'the Act'), the appointed bidder meets with all relevant health and safety instructions as given to them by site safety personnel, where relevant. Personal protection equipment including closed safety shoes, hard hats, height safety equipment, and high visibility vests are worn at all times while on the work site. All personnel are to obey the relevant instructions, including signage, related to restricted access and speed limits on all sites.
3. The appointed bidder, once signing the contract (SBD 7.1 and the NRF's Section 37.2 agreement), is responsible for itself, its employees, and those people affected by its operations in terms of the Act the regulations promulgated in terms thereof. The appointed bidder performs all work and uses equipment on site complying with the provisions of the Act.
4. To this end, the appointed bidder shall make available to the NRF on the valid Letter of Good Standing in terms of the COID Act and ensures its validity does not expire while executing this bid, where applicable. The appointed bidder furnishes its registration number with the office of the Compensation Commissioner.
5. The appointed bidder maintains a health and safety plan complying with the requirements of The Act at the work site during the period that contracted work takes place on the site.
6. The NRF manages the appointed bidder in his capacity for the execution of this contract to meet the provisions of the said Act and the regulations promulgated in terms thereof. The appointed bidder accepts liability for any contraventions to the Act. Each member of the appointed bidder's team (including sub-contracted personnel), submit a signed agreement with the sub-contractor.

Compliance with OHS Act, Construction Regulations, 2014 and OHS Specification

The tendered sum shall include full compensation to the contractor for compliance with all the requirements of the OHS Act and Regulations (including the construction Regulation 2014 and OHS Specification) at all times for the full duration of the contract.

Concurrency of roles and responsibilities

The roles and responsibilities of individuals may overlap due to concurrency between the applications on the different contracts and it is up to the Contractor to identify this overlap and to allocate time for the individuals accordingly to ensure an efficient and cost-effective service.

Compliance Certificate of Compliance

Occupational Health and Safety ACT (Act 85 of 1993) Electrical Machinery Regulation 14: Issuing of Certificate of Registration. For the Responsible person issuing the compliance certificate for the electrical fence

STANDARDS

The standards for this contract include but not limited to:

- Construction Regulations of 2014
- Occupational Health and safety Act
- SANS 10400
- SANS 10222
- SANS 10142

MANAGEMENT OF THE DESIGN AND CONSTRUCTION PROCESS

Management of the design and construction will be done by NRF-RISA through the internal appointed project manager.

AVAILABLE FACILITIES

The following facilities are available onsite:

- Parking;
- Water;
- Ablutions
- Storage (parking area) the bidder is liable for the security of the project materials.

SITE INTERDEPENDENCIES IMPACTING THE PROJECT

The following interdependencies are available onsite

- Security: Contractors will be required to comply with onsite security, i.e., access control measures to the building.
- Organizational operations: Business will be operating, and consideration should be made to ensure a conducive and safe working environment is maintained during the refurbishment; and installation of the perimeter fence

SUB-CONTRACTOR MANAGEMENT

SUB-CONTRACTING

Procedures for the appointment of sub-contractors:

To be declared in the submission of the bid. Any replacement thereof should be approved by the NRF-RISA representative prior appointment in writing. Main contractor is responsible for provision of a sub-contractor report at the end of the contract.

A bidder will not be awarded points for B-BBEE status level if it is indicated in the tender documents that such a bidder intends sub-contracting more than 25% of the value of the contract to any other enterprise that does not qualify for at least the points that such a bidder qualifies for, unless the intended sub-contractor is an exempted micro enterprise that has the capability and ability to execute the sub-contract.

A bidder awarded a contract may not sub-contract more than 25% of the value of the contract to any other enterprise that does not have an equal or higher B-BBEE status level than the person concerned, unless the contract is sub-contracted to an exempted micro enterprise that has the capability and ability to execute the sub-contract.

In case of a bidder sub-contracting work to another company, the following must be submitted together with the proposal:

- A valid CIDB Registration of the subcontracted company.
- A valid letter of good standing issued by Department of Labour of the subcontracted company.
- A valid copy of the B-BBEE certificate or sworn affidavit of the subcontracted company

Specific requirements for sub-contractor documentation:

To comply with the construction standard.

Specific procedures to comply with Preferential Procurement Policy Framework Act requirements for sub-contracting within signed contracts:

Any replacement of the subcontractor must comply with the initial preferential procurement requirements.

Responsibility for sub-contractor defects and remediation:

It is a full responsibility of the appointed contractor.

RISKS MANAGEMENT

- The bidder must affect and keep in force Contract Works Insurance for full contract value.
- The bidder must provide proof of Public Liability Insurance of R1 000 000.00
- A retention of 10% of the contract payment value will be held by the NRF for three months after achievement of practical completion, this will serve as a Security for the quality of workmanship and materials.
- Payment: NRF-RISA will not pay for any expenditure prior to the approval of the NRF appointed Project manager.

GENERAL AND SPECIAL CONDITIONS OF CONTRACT

D 1. Applicable legal system

The governing law is the law of South Africa.

D 2. Applicable language

The language of the Contract and for written communications is South African English.

D 3. The NRF's representative with the contractors and the NRF:

The NRF's representative with the contractor and the NRF as set out in this clause with the exception of where the representative make any contract interpretation having price impact or price determination. In these cases, the representative must consult with the NRF prior to consulting with the contractor.

D 4. The Defects Liability Period is:

In terms of Latent Defects Liability, the contractor's liability shall continue beyond the date of achievement of Final Completion for the period of 90 days.

D 5. Commencement Date, meaning the date that this Agreement is made in terms of this contract and its Form of Offer and Acceptance (SBD 7.1).

D 6. The non-working times

Service Provider Obligations:

The service provider must exercise reasonable skill, care and diligence in rendering all services included in this procurement contract.

The service provider must deliver the services during normal working hours (i.e. Monday to Friday, excluding public holidays from 08:30 to 16:00) and/or such additional hours as may be reasonably required by the NRF due to the existence of special circumstances. Services rendered outside of these hours will only be rendered by mutual agreement with the nominated person of the NRF, based on the severity level.

The service provider may not do anything that may prejudice or be adverse to the operations and functions of the NRF

The service provider must submit such information and reports, as specified in the agreed service request, to the person nominated by the NRF, and comply with all legislation applicable in providing these services.

The service provider corresponds and deliver services only to the NRF and end users of the NRF.

GENERAL AND SPECIAL CONDITIONS OF CONTRACT

The non-working days are:

The NRF classifies the following days as non-working days. The NRF's representative written permission is required, subject to such conditions as the NRF's representative may set, to work on these days.

Sunday

The special non-working days are:

The NRF classifies the following days as non-working days. The NRF's representative written permission is required, subject to such conditions as the NRF's representative may set, to work on these days.

Public Holidays:

Religious Holidays

Legislation Holidays

D 7. The contractor delivers the following one or a set of the following security to the NRF:

The value of the Works for calculating the percentages are:

Type of security (inclusive of Value Added Tax)	Contractor's choice. Indicate "Yes" or "No"
7.5% of Contract value as a guarantee OR Retention of 10% to be paid after three months after achievement of practical completion, this will serve as a Security for the quality of workmanship and materials.	

D 8. Payment Management:

The percentage advance on materials not yet built into the Permanent Works is:

No advance payment

The limit of retention money is:

10%

D 9. Contracted Party Due Diligence during the Contract Period:

The NRF has the right to conduct supply chain due diligence including site visits and inspections at any time during the contract period.

D 10. Copyright and Intellectual Property

- Intellectual property** refers to creations of the mind, such as inventions; literary and artistic works; designs; and symbols, names, images used in commerce; and includes copyright (a legal term describing the rights that creators have over their literary and artistic works including books, music, paintings, sculpture and films, to computer programs, databases, advertisements, maps and technical drawings); trademark (a legal term describing a sign capable of distinguishing the goods or services of one enterprise from those of other enterprises); and patents (a legal terms describing an exclusive right granted for an invention providing the patent owner with the right to decide how - or whether - the invention can be used by others).
- Background intellectual property** is defined as the intellectual property pertaining to this contract and created and owned by any of the contracted parties to this contract prior to the effective date of this contract.
- Contract intellectual property** is defined as intellectual property created by the parties to this contract for

GENERAL AND SPECIAL CONDITIONS OF CONTRACT

and in the execution of the contract.

4. All background intellectual property (existing prior to this contract) invests in and remains the sole property of the contracted parties to this contract. Both parties disclose openly such intellectual property ownership to the parties in writing at the commencement of this contract.
5. The contracted party grants the National Research Foundation a fully paid up, irrevocable, and non-exclusive licence to use its background intellectual property for the exploitation of this contract to enable the National Research Foundation to obtain the full benefit of the contracted deliverables for this contract.
6. The parties agree that all right, title, and interest in contract intellectual property created during the execution of this contract invests with the National Research Foundation unless where agreed in writing to a different allocation of the ownership of the contract intellectual property with such allocation being an appendums to this contract.
7. Both parties to this contract shall keep the intellectual property created during this contract confidential and shall fulfil its confidentiality obligations as set out in this document.
8. The contracted party agrees to assist the National Research Foundation in obtaining statutory protection for the contract intellectual property at the expense of the National Research Foundation wherever the National Research Foundation may choose to obtain such statutory protection.
9. The contracted party shall procure where necessary the signatures of its personnel for the assignment of its respective contract intellectual property to the National Research Foundation or as the National Research Foundation may direct, and to support the National Research Foundation or its nominee, in the prosecution and enforcement thereof in any country in the world.
10. The contracted party irrevocably appoints the National Research Foundation to be its true and lawful agent in its own name, to do such acts, deeds, and things and to execute deeds, documents, and forms that the National Research Foundation in its discretion requires in order to give effect to the terms of this clause.

D 11. **Confidentiality**

1. The recipient of confidential information must be careful and diligent as not to cause any unauthorised disclosure or use of the confidential information, in particular, during its involvement with the National Research Foundation and after termination of its involvement with the National Research Foundation, the recipient shall not:
 - 1.1. Disclose the confidential information, directly or indirectly, to any person or entity, without the National Research Foundation's prior written consent.
 - 1.2. Use, exploit or in any other manner whatsoever apply the confidential information for any other purpose whatsoever, other than for the execution of the contract and the delivery of the deliverables or
 - 1.3. Copy, reproduce, or otherwise publish confidentiality information except as strictly required for the execution of the contract.
2. The recipient shall ensure that any employees, agents, directors, contractors, service providers, and associates which may gain access to the confidential information are bound by agreement with the recipient both during the term of their associations with the recipient and after termination of their respective associations with the recipient, not to
 - 2.1. Disclose the confidential information to any third party, or
 - 2.2. Use the confidential information otherwise than as may be strictly necessary for the execution of the contract,
 - 2.3. The recipient shall take all such steps as may be reasonably necessary to prevent the confidential information from falling into the hands of any unauthorised third party.
3. The undertakings set out in this clause shall not apply to confidential information, which the recipient is able to prove:

GENERAL AND SPECIAL CONDITIONS OF CONTRACT

- 3.1. Was independently developed by the recipient prior to its involvement with the National Research Foundation or in the possession of the recipient prior to its involvement with the National Research Foundation;
- 3.2. Is now or hereafter comes into the public domain other than by breach of this contract by the recipient;
- 3.3. Was lawfully received by the recipient from a third party acting in good faith having a right of further disclosure and who do not derive the same directly or indirectly from the National Research Foundation, or
- 3.4. Required by law to be disclosed by the recipient, but only to the extent of such order and the recipient shall inform the National Research Foundation of such requirement prior to any disclosure.
4. The recipient shall within one (1) month of receipt of a written request from the NRF to do so, return to the National Research Foundation all material embodiments, whether in documentary or electronic form, of the confidential information including but not limited to:
 - 4.1. All written disclosures received from the NRF;
 - 4.2. All written transcripts of confidential information disclosed verbally by the National Research Foundation; and
 - 4.3. All material embodiments of the contract intellectual property.
5. The recipient acknowledges that the confidential information made available solely for the execution of the contract and for no other purpose whatsoever and that the confidential information would not have been made available to the recipient, but for the obligations of confidentiality agreed to herein
6. Except as expressly herein provided, this contract shall not be construed as granting or confirming, either expressly or impliedly any rights, licences or relationships by furnishing of confidential information by either party pursuant to this contract.
7. The recipient acknowledges that the unauthorised disclosure of confidential information may cause harm to the NRF. The recipient agrees that, in the event of a breach or threatened breach of confidentiality, the NRF is entitled to seek injunctive relief or specific performance, in order to obtain immediate remedies. Any such remedy must be in addition to and not in lieu of any other remedies available at law, including monetary damages.

D 12. Protection of Private Information

The third party hereby gives the NRF permission, in terms of the Protection of Private Information Act 4 of 2013, to process, collect, receive, record, organise, collate, store, update, modify, retrieve, alter, consult, use, disseminate, distribute, merge, link, erase or destroy personal information received. By submitting a bid, the third party gives its voluntary explicit consent to the terms of this special condition.

D 13. Original bid documents for contract signing

Bidders must submit the specified original bid documents (including the bidder's response to the specification and the bidder's pricing) in electronic copy format to the NRF. This serves as the original master set annexed to the mandatory SBD 7.1 contract signing form creating the legal contract between the appointed bidder and the NRF. The master set remains at the NRF and has precedence over any other copies in the case of any discrepancies within the other sets of documents. The bidders attach the originals or certified copies of any certificates stipulated in this document to these original sets of bid documents. The signed legal contract constitutes the closure of the competitive bid/tender/request for quotation process and sets out each party's obligations for executing the contract.

MANAGEMENT OF SERVICE PERFORMANCE LEVELS

1. Upon appointment, the appointed bidder and the NRF contract manager review the initial service levels as set out in this document supports the contract delivery after signing of the contract.
2. Both parties agree on the final set of service levels including measurable key performance indicators with minimum thresholds in writing which is appended to this contract document.
3. The service levels are reviewed after each quarter against the agreed minimums.
4. Where both parties agree to a variation of these service levels, both parties will meet and agree on the revised service levels in writing which is appended to this contract document.
5. The agreed service level document states the agreed service levels, date effective from, performance penalties, and any matter forming part of such service levels.
6. Management of poor performance:
 - 6.1. Where either party has identified poor performance under this contract, both parties will meet and investigate the matter to determine the root cause.
 - 6.2. Both parties will agree to a correction plan and will implement it.
 - 6.3. Both parties will monitor the corrective actions to ensure service levels are at the agreed minimum.
 - 6.4. Both parties will assess the applicability of penalties to the incurred poor performance and apply these,
7. Penalty management:
 - 7.1. Penalties apply for every day that elapses between the Due Completion Date and the actual Date of Practical Completion, including special non-working days.
 - 7.2. Penalties apply where the NRF's contract manager determines that the performance of work is below that specified in the contract.
 - 7.3. The imposition of such penalty shall not relieve the contractor from his obligations to complete the works, or from any of his obligations and liabilities.
 - 7.4. The penalties under the contract are as follows:
 - Where the work done deviates from the specifications, the rectification of work is to be done at the contractors' own cost.
 - Where the completion of work is delayed by more than 2 weeks from the approved and agreed-upon timelines, the penalty is 2% of the original invoice value for each additional week of delay.
8. **The Performance Levels are listed below.**
 - 8.1. The NRF's contract manager measures the contracted bidder's performance against these in the execution of the contract.
 - 8.2. The contractor recognises that its failure to meet the performance levels has a material adverse impact on the operations of NRF and that the damage from the contractor's failure to meet any performance level is not susceptible to precise determination.

The NRF, through its NRF's contract manager determination, excuses the contractor from failing to comply with the performance levels to the extent that non-performance or delayed performance is solely and directly attributable to an act or omission of the NRF or its staff or circumstances of force majeure as referred to in this Agreement.
 - 8.3. The NRF tasks its Agent specifically where the contractor fails to meet any performance level:
 - to investigate and report on the root causes of the performance level failure.
 - To advise the NRF on what actions are required to promptly correct the failure and begin meeting the set performance levels;

- the NRF's contract manager promptly instructs the contractor to correct the failure and begin meeting the set performance levels;
- The NRF's contract manager monitors the correction to the extent requested by the NRF of the status of remedial efforts being undertaken with respect to such performance level failure.
- The contractor is responsible for monitoring and measuring its performance against the performance levels set in this document. The NRF deems failure to measure performance with respect the contract specifications for any measurement period as a failure to meet the stipulated performance levels.

PRICING

PRICING CONDITIONS OF CONTRACT FOR THIS BID

Actual Prices charged by the bidder for goods delivered and/or services performed for this bid shall not vary from the prices quoted by the bidder in the submitted bid with the exception of any price adjustments as outlined in the following price conditions.

1.	Compliant price calculation for price competition: Price quoted is South African Rands
2.	Date of unit pricing: All unit prices are quoted at the closing date of this bid.
3.	Price Quotation Basis: Unit prices are fully inclusive of all applicable taxes <u>including VAT</u> , less all unconditional discounts, plus all costs to deliver the services and/or goods to the specified delivery point stated in South African Rand currency. Where imported goods/services are to be used, the exchange rate to be quoted in arriving at ZAR if a firm local currency price is not quoted.
4.	Quantity estimation: Bidders must quote according to the quantities stipulated in the pricing schedule
5.	Contract Price: The cumulative value of all purchase orders issued and paid for is the total value of the signed contract at the completion date of the contract, not the competition bid price.
6.	Value Added Tax: Pricing will be adjusted for any variation in the in Value Added Tax rate as gazetted.
7.	Contract Price Management during the contract: Where appropriate, the contract manager will issue written purchase orders authorising the deliverables of this bid as addendums to this contract. The purchase orders stipulate quantity, work description, delivery date, and the unit price in accordance with the contract.
8.	Delivery Points are: National Research Foundation, Meiring Naude Road, Brummeria, 0001
9.	Application of Preference Points: In determining the final price/preference points for the bidder, the preference points are those in the completed Standard Bidding Document 6.1 Preference claim form.

BID PRICE SCHEDULE (SBD 3.1)

Submit pricing in separate emails (stand-alone)

DESCRIPTION	UNIT	QTY	RATE	TOTAL (INCLUDEs VAT of 15%)
Install new perimeter fence of approximately 820m. The supply contractor needs to measure the fence to obtain the exact length.	Per Meter	820		
The new perimeter fence material costs	Per Meter	820		
Delivering of the new perimeter fence materials	Sum	1		
Multi spike strips on top of fence as per the onsite measurement completed by the bidder	Per Strip	570		
25MPA Concrete Footing and base of fence 820m (W) 200mm x (D) 300mm with 100m above ground.	Per Meter	820		
Gate comprising of two swing gates at the RM6 unit in corner of property (Width 2m x Height 3m)	Sum	1		
Pedestrian swing gate at the RM6 unit in corner of property (Width 1m x Height 3m)	Sum	1		
Post and Pillar: I-Beams IPE 140 new	Units	360		
Remove the old existing security fence approximately 820m, at the same time as the installation of the new fence, so that when each section of the old fence is removed, the new section needs to be on place the same day. Including the fence posts (218 units) and concrete footers (820m).	Per Meter	820		
Removing of rubble and old fence equipment	Unit	1		
<u>Electrical Fence</u>				
Electrical Fence Energizer with keypad	Sum	2		
Network Communication Device	Sum	2		
Electrical HT Cable	Per Meter	200		
Fence cable solid aluminium 1.6mm	Per Meter	5200		
Gate contacts	Unit	2		
15W Siren	Unit	1		
Electrical timed light high voltage	Unit	20		
Alarm Strobe light	Unit	2		
Electrical Fence Double lightning protection system as per SANS 10222	Unit	2		

Earthing Spikes copper as per SANS 10222	Unit	40		
Warning signs as per SANS 10222	Unit	140		
Other consumables	Unit	1		
Electrical Fence Certificate of Compliance	Unit	1		
Professional Crimping Tool (12-10AWG)	Unit	2		
Fence Scope Multi Tool with pouch	Unit	2		
Electrical Fence Posts 6 bobbins	Unit	390		
<u>Emergency backup system for guard house</u>				
Solar panel 545 watt with installation bracket (Mounted on the guard House roof)	Unit	2		
Freedom Won Lithium Iron Phosphate Battery data sheet in annexure D or equivalent	Unit	1		
Victron MultiPlus-II GX 5kwh inverter/charger in annexure B or equivalent	Unit	1		
Cerbo GX Control and GX Touch Screen unit data sheet in annexure C or equivalent	Unit	1		
Communication cables	Unit	2		
Interface cables MK3-USB VE Bus to USB	Unit	1		
Interface VE Direct to USB interface cable)	Unit	1		
Battery disconnect Neg and Positive 160A (Including Blade Fuses 125A)	Unit	1		
Electrical certificate of compliance on the backup emergency system	Unit	1		
TOTAL BID PRICE INCLUSIVE OF 15% VAT	R			

ETHICAL CLEARANCES

SBD 4 - BIDDERS DISCLOSURE

BIDDER'S DISCLOSURE

1. PURPOSE OF THE FORM

Any person (natural or juristic) may make an offer or offers in terms of this invitation to bid. In line with the principles of transparency, accountability, impartiality, and ethics as enshrined in the Constitution of the Republic of South Africa and further expressed in various pieces of legislation, it is required for the bidder to make this declaration in respect of the details required hereunder.

Where a person/s are listed in the Register for Tender Defaulters and / or the List of Restricted Suppliers, that person will automatically be disqualified from the bid process.

2. Bidder's declaration

- 2.1 Is the bidder, or any of its directors / trustees / shareholders / members / partners or any person having a controlling interest¹ in the enterprise, employed by the state? **YES/NO**

- 2.1.1 If so, furnish particulars of the names, individual identity numbers, and, if applicable, state employee numbers of sole proprietor/ directors / trustees / shareholders / members/ partners or any person having a controlling interest in the enterprise, in table below.

Full Name	Identity Number	Name of State institution

¹ the power, by one person or a group of persons holding the majority of the equity of an enterprise, alternatively, the person/s having the deciding vote or power to influence or to direct the course and decisions of the enterprise.

SBD 4 - BIDDERS DISCLOSURE

2.2 Do you, or any person connected with the bidder, have a relationship with any person who is employed by the procuring institution? **YES/NO**

2.2.1 If so, furnish particulars:

.....
.....

2.3 Does the bidder or any of its directors / trustees / shareholders / members / partners or any person having a controlling interest in the enterprise have any interest in any other related enterprise whether or not they are bidding for this contract? **YES/NO**

2.3.1 If so, furnish particulars:

.....
.....

3 DECLARATION

I, the undersigned, (name)..... in submitting the accompanying bid, do hereby make the following statements that I certify to be true and complete in every respect:

3.1 I have read and I understand the contents of this disclosure;

3.2 I understand that the accompanying bid will be disqualified if this disclosure is found not to be true and complete in every respect;

3.3 The bidder has arrived at the accompanying bid independently from, and without consultation, communication, agreement or arrangement with any competitor. However, communication between partners in a joint venture or consortium² will not be construed as collusive bidding.

3.4 In addition, there have been no consultations, communications, agreements or arrangements with any competitor regarding the quality, quantity, specifications, prices, including methods, factors or formulas used to calculate prices, market allocation, the intention or decision to submit or not to submit the bid, bidding with the intention not to win the bid and conditions or delivery particulars of the products or services to which this bid invitation relates.

3.5 The terms of the accompanying bid have not been, and will not be, disclosed by the bidder, directly or indirectly, to any competitor, prior to the date and time of the official bid opening or of the awarding of the contract.

² Joint venture or Consortium means an association of persons for the purpose of combining their expertise, property, capital, efforts, skill and knowledge in an activity for the execution of a contract.

SBD 4 - BIDDERS DISCLOSURE

3.6 There have been no consultations, communications, agreements or arrangements made by the bidder with any official of the procuring institution in relation to this procurement process prior to and during the bidding process except to provide clarification on the bid submitted where so required by the institution; and the bidder was not involved in the drafting of the specifications or terms of reference for this bid.

3.7 I am aware that, in addition and without prejudice to any other remedy provided to combat any restrictive practices related to bids and contracts, bids that are suspicious will be reported to the Competition Commission for investigation and possible imposition of administrative penalties in terms of section 59 of the Competition Act No 89 of 1998 and or may be reported to the National Prosecuting Authority (NPA) for criminal investigation and or may be restricted from conducting business with the public sector for a period not exceeding ten (10) years in terms of the Prevention and Combating of Corrupt Activities Act No 12 of 2004 or any other applicable legislation.

I CERTIFY THAT THE INFORMATION FURNISHED IN PARAGRAPHS 1, 2 and 3 ABOVE IS CORRECT.

I ACCEPT THAT THE STATE MAY REJECT THE BID OR ACT AGAINST ME IN TERMS OF PARAGRAPH

6 OF PFMA SCM INSTRUCTION 03 OF 2021/22 ON PREVENTING AND COMBATING ABUSE IN THE

SUPPLY CHAIN MANAGEMENT SYSTEM SHOULD THIS DECLARATION PROVE TO BE FALSE.

.....

Signature

.....

Date

.....

Position

.....

Name of bidder

PREFERENCE POINTS CLAIMED (SBD 6.1)

PREFERENCE POINTS CLAIM FORM IN TERMS OF THE PREFERENTIAL PROCUREMENT REGULATIONS 2022

This preference form must form part of all tenders invited. It contains general information and serves as a claim form for preference points for specific goals.

NB: BEFORE COMPLETING THIS FORM, TENDERERS MUST STUDY THE GENERAL CONDITIONS, DEFINITIONS AND DIRECTIVES APPLICABLE IN RESPECT OF THE TENDER AND PREFERENTIAL PROCUREMENT REGULATIONS, 2022

1. GENERAL CONDITIONS

1.1 The following preference point systems are applicable to invitations to tender:

- the 80/20 system for requirements with a Rand value of up to R50 000 000 (all applicable taxes included); and
- the 90/10 system for requirements with a Rand value above R50 000 000 (all applicable taxes included).
-

PREFERENCE POINTS CLAIMED (SBD 6.1)

1.2 To be completed by the organ of state

- a) The applicable preference point system for this tender is the 80/20 preference point system.
- b) The 80/20 preference point system will be applicable in this tender. The lowest/ highest acceptable tender will be used to determine the accurate system once tenders are received.

1.3 Points for this tender (even in the case of a tender for income-generating contracts) shall be awarded for:

- (a) Price; and
- (b) Specific Goals.

1.4 To be completed by the organ of state:

The maximum points for this tender are allocated as follows:

	POINTS
PRICE	80
SPECIFIC GOALS	20
Total points for Price and SPECIFIC GOALS	100

1.5 Failure on the part of a tenderer to submit proof or documentation required in terms of this tender to claim points for specific goals with the tender, will be interpreted to mean that preference points for specific goals are not claimed.

1.6 The organ of state reserves the right to require of a tenderer, either before a tender is adjudicated or at any time subsequently, to substantiate any claim in regard to preferences, in any manner required by the organ of state.

2. DEFINITIONS

- (a) **“tender”** means a written offer in the form determined by an organ of state in response to an invitation to provide goods or services through price quotations, competitive tendering process or any other method envisaged in legislation;
- (b) **“price”** means an amount of money tendered for goods or services, and includes all applicable taxes less all unconditional discounts;
- (c) **“rand value”** means the total estimated value of a contract in Rand, calculated at the time of bid invitation, and includes all applicable taxes;
- (d) **“tender for income-generating contracts”** means a written offer in the form determined by an organ of state in response to an invitation for the origination of income-generating contracts through any method envisaged in legislation that will result in a legal agreement between the organ of state and a third party that produces revenue for the organ of state, and includes, but is not limited to, leasing and disposal of assets and concession contracts, excluding direct sales and disposal of assets through public auctions; and
- (e) **“the Act”** means the Preferential Procurement Policy Framework Act, 2000 (Act No. 5 of 2000).

3. FORMULAE FOR PROCUREMENT OF GOODS AND SERVICES

PREFERENCE POINTS CLAIMED (SBD 6.1)

3.1. POINTS AWARDED FOR PRICE

3.1.1 THE 80/20 PREFERENCE POINT SYSTEMS

A maximum of 80 points is allocated for price on the following basis:

80/20

$$Ps = 80 \left(1 - \frac{Pt - P_{min}}{P_{min}} \right)$$

Ps = Points scored for price of tender under consideration

Pt = Price of tender under consideration

Pmin = Price of lowest acceptable tender

3.2. FORMULAE FOR DISPOSAL OR LEASING OF STATE ASSETS AND INCOME GENERATING PROCUREMENT

3.2.1. POINTS AWARDED FOR PRICE

A maximum of 80 or 90 points is allocated for price on the following basis:

80/20

or

90/10

$$Ps = 80 \left(1 + \frac{Pt - P_{max}}{P_{max}} \right) \quad \text{or} \quad Ps = 90 \left(1 + \frac{Pt - P_{max}}{P_{max}} \right)$$

Where

Ps = Points scored for price of tender under consideration

Pt = Price of tender under consideration

Pmax = Price of highest acceptable tender

POINTS AWARDED FOR SPECIFIC GOALS

4.1. In terms of Regulation 4(2); 5(2); 6(2) and 7(2) of the Preferential Procurement Regulations, preference points must be awarded for specific goals stated in the tender. For the purposes of this tender the tenderer will be allocated points based on the goals stated in table 1 below as may be supported by proof/ documentation stated in the conditions of this tender:

4.2. In cases where organs of state intend to use Regulation 3(2) of the Regulations, which states that, if it is unclear whether the 80/20 or 90/10 preference point system applies, an organ of state must, in the tender documents, stipulate in the case of—

(a) an invitation for tender for income-generating contracts, that either the 80/20 or 90/10 preference point system will apply and that the highest acceptable tender will be used to determine the applicable preference point system; or

(b) any other invitation for tender, that either the 80/20 or 90/10 preference point system will apply and that the lowest acceptable tender will be used to determine the applicable preference point system,

PREFERENCE POINTS CLAIMED (SBD 6.1)

then the organ of state must indicate the points allocated for specific goals for both the 90/10 and 80/20 preference point system.

Table 1: Specific goals for the tender and points claimed are indicated per the table below.

(Note to organs of state: Where either the 90/10 or 80/20 preference point system is applicable, corresponding points must also be indicated as such.)

Note to tenderers: The tenderer must indicate how they claim points for each preference point system.)

NRF will use the B-BBEE status level scoring table

Preference points are allocated to both procurement and income-generation based on the two different thresholds in terms of the table below:

The specific goals allocated points in terms of this tender: B-BBEE Status Level of Contributor	Number of points allocated (80/20 system)	Number of points claimed (80/20 system) (To be completed by the tenderer)
1	20	
2	18	
3	14	
4	12	
5	8	
6	6	
7	4	
8	2	
Non-compliant	0	

DECLARATION WITH REGARD TO COMPANY/FIRM

4.3. Name of company/firm.....

4.4. Company registration number:

4.5. TYPE OF COMPANY/ FIRM

- ☐ Partnership/Joint Venture / Consortium
- ☐ One-person business/sole propriety
- ☐ Close corporation
- ☐ Public Company
- ☐ Personal Liability Company
- ☐ (Pty) Limited
- ☐ Non-Profit Company
- ☐ State Owned Company

PREFERENCE POINTS CLAIMED (SBD 6.1)

[TICK APPLICABLE BOX]

- 4.6. I, the undersigned, who is duly authorised to do so on behalf of the company/firm, certify that the points claimed, based on the specific goals as advised in the tender, qualifies the company/ firm for the preference(s) shown and I acknowledge that:
- i) The information furnished is true and correct;
 - ii) The preference points claimed are in accordance with the General Conditions as indicated in paragraph 1 of this form;
 - iii) In the event of a contract being awarded as a result of points claimed as shown in paragraphs 1.4 and 4.2, the contractor may be required to furnish documentary proof to the satisfaction of the organ of state that the claims are correct;
 - iv) If the specific goals have been claimed or obtained on a fraudulent basis or any of the conditions of contract have not been fulfilled, the organ of state may, in addition to any other remedy it may have –
 - (a) disqualify the person from the tendering process;
 - (b) recover costs, losses or damages it has incurred or suffered as a result of that person's conduct;
 - (c) cancel the contract and claim any damages which it has suffered as a result of having to make less favourable arrangements due to such cancellation;
 - (d) recommend that the tenderer or contractor, its shareholders and directors, or only the shareholders and directors who acted on a fraudulent basis, be restricted from obtaining business from any organ of state for a period not exceeding 10 years, after the *audi alteram partem* (hear the other side) rule has been applied; and
 - (e) forward the matter for criminal prosecution, if deemed necessary.

.....
SIGNATURE(S) OF TENDERER(S)

SURNAME AND NAME:

DATE:

ADDRESS:

.....
.....
.....

BIDDERS QUALIFICATION TO EXECUTE THE CONTRACT

PROJECT PLANNING AND DELIVERABLES

1 Draft Project Plan

Submission of a Project Management Plan (PMP) specific to this scope of work (no generic plans will be accepted) which addresses the PMP through design, construction, handover and operations.

Detailed PMP for the duration of this contract. The PMP must as a minimum address the following aspects:

- Overview and project strategy
- Project standards and setup
- Project Scope
- Cost and financial management
- Project Schedule (Including Appointment and Commencement of contract, Design Activities, Reviews and Approvals, Construction, Testing and Verification and Handover to Client)
- Risk Management
- Sub-contractor management
- System Engineering
- Information & document management
- Communication and reporting

2 Method Statement based on the scope of work specific to this project.

The method statement must as a minimum address the following aspects:

- Planning
- Detailed Design process and approvals
- Project timelines/programme
- Construction process (including all testing)
- Safety, Health, Environmental & Quality Compliance
- Testing and Verification
- Completion and handover
- Quality Management System

MANAGEMENT CAPABILITY

1 Health and safety (minimum)

Health, Safety, Environmental and Quality (SHEQ) Management Plan for the execution of this Contract and a Quality Management System or Equivalent, based on Quality Management principals, Certification and Compliance Standard specific to this scope of work (no generic plans will be accepted) which address SHEQ through design, construction, handover and operations) and a Quality Management System or Equivalent, (based on the following principals, Customer focus; Leadership; Involvement of people; Process approach; System approach; Continual improvement; Fact-based decision making, and Mutually beneficial supplier relationships)

2 Compensation for Occupational Injuries and Diseases Act

Letters of good conduct in terms of the Compensation for Occupational Injuries and Diseases Act.

EVALUATION OF BIDDER'S ABILITY TO DELIVER

MANDATORY EVIDENCE OF THE BIDDER'S ABILITY TO DELIVER THE CONTRACT

The bidder must provide the following mandatory documentary evidence demonstrating their ability to execute this contract. **A bidder failing to adequately provide any of the mandatory documents is automatically disqualified.**

Bidder's technical qualification: The NRF only considers bidders that have the technical qualifications for the nature of the required services/goods. The onus is on the bidder to provide proof, unless indicated to the contrary, with the minimum listed below: **Mandatory Documents (M) and Technical Eligibility Criteria (T)**

Evidence Description	RFP Section Reference	Reference to RFP	GO/ NO GO	Reference to Bidder's document
Mandatory Documents (M) – Complaint RFP Response				
Attendance Compulsory Briefing Session	M	Cover page	Has the bidder attended the briefing session, signed register and attendance certificate?	Go/ No Go
Construction: Proof of current CIDB grading being CIDB SQ 3 or higher attached.	M	Page 3	Has the bidder provided a valid CIDB grading certificate?	Go/ No Go
Fully completed Procurement Invitation including signed (SBD 1), SBD 4 & SBD 6.1.	M	Pages 1- 44	Has the bidder signed and completed the bid document?	Go/ No Go
CSD Report reflecting legal details, registration numbers, details of directors, and shareholding	M	Pages 4	Is the bidder registered on the Central Supplier Database?	Go/ No Go
Pricing (SBD 3.1) is completed, and the pricing schedules are in a separate PDF.	M	Pages 22- 24	Has the bidder submitted the pricing schedule?	Go/ No Go
Copy of a valid COIDA (Compensation for Occupational Injuries and Diseases) registration certificate e.g Letter of Good Standing	M	Page 13	Has the bidder submitted a valid letter of Good Standing	Go/No Go

Copy of a valid public liability, product liability and professional indemnity insurance of at least R1 million or a letter of intent from the insurance company	M	Page 13	Has the bidder submitted a valid copy of public liability, product liability and professional indemnity insurance of at least R1 million a letter of intent from the insurance company?	Go/No Go		
An applicant failing to have an Overall Score of a “GO” on above mandatory documents is regarded as non-responsive and is automatically disqualified						
Meet Specification Minimum	Meet Specification Minimum		Weight	Bid Section Reference	GO / NO GO	Reference to Bidder's document
<u>Work Plan / Project Schedule</u>	The project plan provided by the bidder verifies that the bidder can complete the project within four months.		Mandatory	Pages 11 -14	Go/ No Go	
	The technical specification data sheets provided by the bidder if not the same as annexure: A, B, C and D meets the specified requirements for products or equipment.				Go/ No Go	
<u>Qualifications</u>	Has the bidder submitted the electrician’s trade certificate.		Mandatory	Pages 13	Go/ No Go	
<u>Warranties</u>	Has the bidder submitted 3-year guarantee workmanship letters for electrical fence installation, perimeter fence and emergency Back-up system		Mandatory	Pages 13	Go/ No Go	
<u>Bidders References</u>	Has the bidder submitted a list of at least two contactable referees with whom they have installed a Clear vu or similar perimeter fence as required in this bid document. The references must indicate the address where the work was completed. The NRF will contact these companies directly to confirm the references.		Mandatory	Pages 13	Go/ No Go	

<u>Relevant Previous Company Experience</u>	Has the bidder submitted two completion certificates for the installation of a Clear vu or similar perimeter fence indicating the value and contactable details of the client whom the services were rendered for.	Mandatory	Page 13	Go/ No Go	
<u>Qualified electrician with IE or MIE Certification</u>	Has the bidder submitted proof of registration licence with the Department of Labour?	Mandatory	Page 13	Go/ No Go	
<u>Electrical trade certificates</u>	Has the bidder submitted a copy of electrician trade certificate	Mandatory	Page 13	Go/ No Go	
BIDDER IS ABLE TO DELIVER THE SPECIFICATION?			YES - PASS TO PRICING	NO - DISQUALIFIED	
NB: ANY BIDDER FAILING TO MEET 'GO' IN ALL MANDATORY REQUIREMENTS STATED ABOVE WILL BE DISQUALIFIED					

CONTACTABLE REFERENCE LIST FORMAT FOR BIDDER

CLIENT NAME	ADDRESS	TELEPHONE & EMAIL	PROJECT DESCRIPTION	DURATION	VALUE	
				_____ Months	R_____	
				_____ Months	R_____	
				_____ Months	R_____	

FORM OF OFFER AND ACCEPTANCE

OFFER

The Employer, identified in this document as the legal entity National Research Foundation and in the Acceptance signature block, has solicited offers to enter into a contract in respect of the works set out in this document.

The bidder, identified in the Supplier Information Section and in the Offer signature block below, has examined the documents listed in this document and addenda thereto, and by submitting this Offer has accepted the conditions of this bid invitation.

By the representative of the bidder, deemed to be duly authorised, signing this part of this Form of Offer and Acceptance, the bidder offers to perform all of the obligations and liabilities of the contractor under this contract including the supply all or any of the goods, works, and services described in this document to the NRF in accordance with all its terms and conditions according to their true intent and meaning for an amount to be determined in accordance with the conditions set out in this document. The bidder confirm that it has satisfied itself to the correctness and validity of its bid/offer in response to this document; that the total price covers all the goods, works and services specified in this document and cover all of its obligations; and the bidder accepts that any mistakes regarding prices, rates, and calculations will be at its own risk. The bidder declares that it has not participated in any collusive practices with any bidder or any other person regarding this or any other bid.

The bidder's offer remains binding upon the bidder and opens for acceptance by the NRF during the validity period indicated and calculated from the closing time of this bid invitation.

The Offered Total of The Prices inclusive of Value Added Tax is:

R 0000 000.00 (in figures)

R (in Words)

The NRF accepts this offer only where its duly authorised Delegated Authority has approved the award of this bid to the Offer or and the duly authorised representative of the NRF signs the Acceptance part of this Form of Offer and Acceptance and returning one copy of this document to the bidder/offer or before the end of the period of validity stated in this document, whereupon the bidder/offer or becomes the party named as the contractor in the conditions of contract set out in this document.

For the Bidder/Tenderer

Name (Print)

Capacity

Signature

Witness 1

Name

Signature	
Witness 2	
Name	
Signature	
Date	
ACCEPTANCE	
By signing this part of this Form of Offer and Acceptance, the NRF, as the employer identified below, accepts the bidder's offer. The NRF's acceptance of the bidder's offer shall form the agreement between the NRF and the bidder upon the terms and conditions contained in this document. In consideration thereof, the NRF shall pay the offer or, identified as the contractor, the amount due in accordance with this document upon delivery verification. The offer or/bidder shall within two weeks after receiving a completed copy of this agreement, contact the NRF's agent (whose details are given in this agreement) to arrange the delivery of any bonds, guarantees, proof of insurance and any other documentation to be provided in terms of this agreement at, or just after, the date this agreement comes into effect. Failure to fulfil any of these obligations in accordance with those terms shall constitute a repudiation of this agreement. Notwithstanding anything contained herein, this agreement comes into effect on the date when the offer or/bidder receives one fully completed original copy of this document. Unless the offer or/bidder (now contractor) within five (5) days of the date of such receipt notifies the NRF in writing of any reason why he cannot accept the contents of this agreement, this agreement shall constitute a binding contract between the parties,	
<u>For the National Research Foundation</u>	
Name (Print)	
Capacity	
Signature	
Witness 1	
Name	
Signature	
Witness 2	
Name	
Signature	
Date	

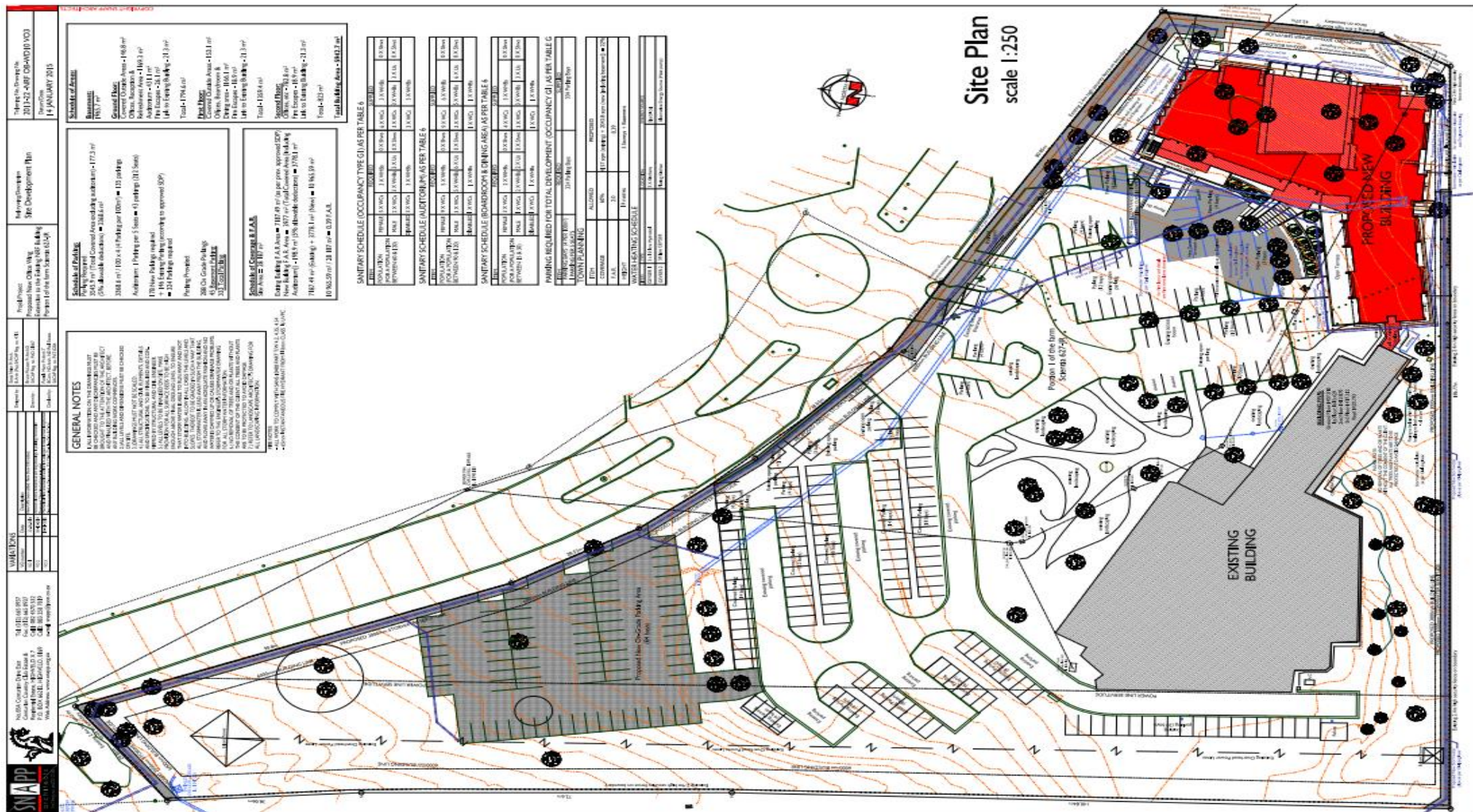
CONFIRMATION OF RECEIPT

The Offer or/Bidder, (now contractor), identified in the offer part of this agreement hereby confirms receipt from the NRF, identified in the acceptance part of this agreement, of one fully completed original copy of this agreement today:

the (day)	
of (month)	
20 (year)	
at (place)	
Name (Print)	
Capacity	
Signature	

Name and address of organisation:

ANNEXURE A: SITE PLAN



ANNEXURE B INVERTER/CHARGER DATA SHEET

	INVERTER/CHARGER		
PowerControl & PowerAssist	Yes		
Transfer switch	32 A	32 A	50 A
Maximum AC input current	32 A	32 A	50 A
Auxiliary output	Yes (32 A)		
	INVERTER		
Input voltage range	19 - 33 V	38 – 66V	
Output 1)	Output voltage: 230 VAC ± 2%		Frequency: 50 Hz ± 0,1% (1)
Cont. output power at 25°C (3)	3000 VA / 2400 W		5000 VA /4000 W
Cont. output power at 40°C / 65°C	2200 W / 1700 W		3700 W / 3000 W
Maximum feed-in power	3000 VA		5000 VA
Peak power	5500 W		9000 W
Maximum efficiency	94%	95%	96%
Zero load power	13 W	11 W	18 W
Zero load power in AES mode	9 W	7 W	12 W
Zero load power in Search mode	3 W	2 W	2 W
	CHARGER		
AC Input	Input voltage range: 187-265 VAC		Input frequency: 45 – 65 Hz
Charge voltage 'absorption'	28.8 V	28.8 V / 57.6 V	
Charge voltage 'float'	27.6 V	27.6 V / 55.2 V	
Storage mode	26.4 V	52.8 V	
Maximum battery charge current (4)	70 A	35 A	70 A
Battery temperature sensor	Yes		
	GENERAL		
Programmable (AUX) relay (5)	Yes		
Auxiliary power supply	12V / 100mA		
Programmable open collector output	70V / 100mA		
Analog-digital aux inputs	Yes, 2x		
Temperaure sensor	Yes		
Voltage sense contacts	Yes		
Protection (2)	a - g		
VE.Bus communication port	For parallel and three phase operation, remote monitoring and system integration		
General purpose com. port	Yes, 2x		
Interfaces	BMS-Can, USB, Ethernet, VE.Direct, Wi-Fi		
External AC current sensor (optional)	50 A		100 A
Remote on-off	Yes		
Operating temperature range	-40 to +65 °C (fan assisted cooling). Maximum Altitude 2000m		
Humidity (non-condensing)	max 95%		
	ENCLOSURE		
Material & Colour	Steel, blue RAL 5012		

	INVERTER/CHARGER		
PowerControl & PowerAssist	Yes		
Transfer switch	32 A	32 A	50 A
Maximum AC input current	32 A	32 A	50 A
Auxiliary output	Yes (32 A)		
	INVERTER		
Input voltage range	19 - 33 V	38 – 66V	
Output 1)	Output voltage: 230 VAC ± 2%		Frequency: 50 Hz ± 0,1% (1)
Cont. output power at 25°C (3)	3000 VA / 2400 W		5000 VA /4000 W
Cont. output power at 40°C / 65°C	2200 W / 1700 W		3700 W / 3000 W
Maximum feed-in power	3000 VA		5000 VA
Peak power	5500 W		9000 W
Maximum efficiency	94%	95%	96%
Zero load power	13 W	11 W	18 W
Zero load power in AES mode	9 W	7 W	12 W
Zero load power in Search mode	3 W	2 W	2 W
Protection category	IP22		
Battery-connection	M8 bolts		
230 V AC-connection	Screw terminals 13 mm2 (6 AWG)		
Weight	19kg		30kg
Dimensions (hwxwd)	3kVA - 506 x 275 x 237 mm		565 x 323 x 148
	STANDARDS		
Safety	EN-IEC 62019-1, EN-IEC 6201-2, EN-IEC 60335-1, EN-IEC 60335-2-29		
Emission / Immunity	EN55014-1, EN 55014-2 EN-IEC 61000-3-2, EN-IEC 61000-3-3 IEC 61000-6-1, IEC 61000-6-2, IEC 61000-6-3		
Uninterruptible power supply	IEC 62040-1		
Anti-islanding	Please consult the certificates on our website.		

1) Can be adjusted to 60 Hz

2) Protection key:

a) output short circuit

b) overload

c) battery voltage too high

d) battery voltage too low

e) temperature too high

f) 230 VAC on inverter output

g) input voltage ripple too high

3) Non-linear load, crest factor 3:1

4) Up to 25°C ambient

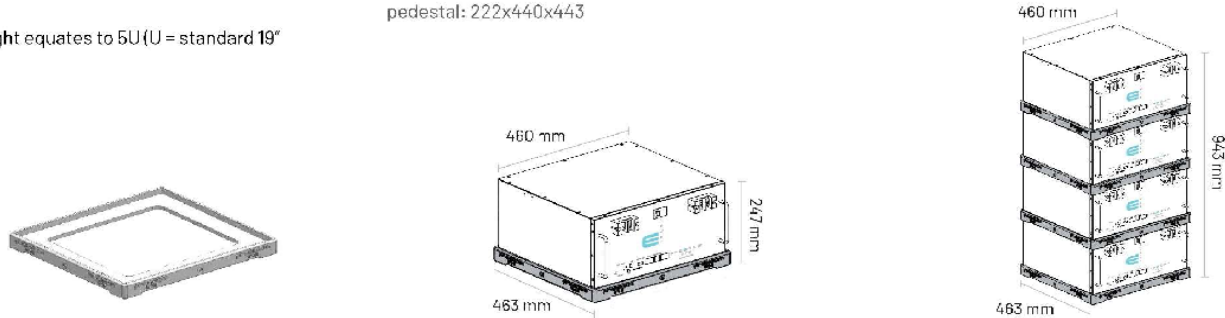
5) Programmable relay which can be set for general alarm, DC under voltage or genset start/stop function.

AC rating: 230V / 4A, DC rating: 4A up to 35VDC and 1A up to 60VDC

ANNEXURE C CONTROL/MONITORING UNIT DATA SHEET

Supply voltage	8 – 70V DC	
Mounting	Wall or DIN rail (35mm) ⁽²⁾	
Communication ports		
VE.Direct ports (always isolated)	3 ⁽³⁾	
VE.Bus (always isolated)	2 paralleled RJ45 sockets	
VE.Can	yes - non isolated	
BMS-Can port	yes	No
IO		
Resistive tank level inputs	4	0
Temperature sense inputs	4	0
Digital Inputs	4	4
Other		
Outer dimensions (h x w x d)	78 x 154 x 48 mm	
Operating temperature range	-20 to +50°C	
Standards		
Safety	IEC 62368-1	
EMC	EN 301489-1, EN 301489-17	
Automotive	ECE R10-6	
GX Touch 50 / GX Touch 70		
Mounting	With included mounting accessories	
Display Resolution	GX Touch 50: 800 x 480 GX Touch 70: 1024 x 600	
Other		
Outer dimensions (h x w x d)	GX Touch 50: 87 x 128 x 12.4 mm GX Touch 70: 113 x 176 x 13.5 mm	
Cable length	2 meter	

ANNEXURE D ENERGY STORAGE/ BATTERY DATA SHEET

	1 x e5000	2 x e5000	3 x e5000	4 x e5000
Total Energy Capacity [kWh]	5	10	15	20
Energy, 80% DoD [kWh] 1	4	8	12	16
Energy, 90% DoD [kWh] 1	4,5	9	13,5	18
Current Capacity [Ah]	100	200	300	400
Max/Cont. Charge Current [A] 2	80/70	144/126	216/189	288/252
Max/Cont. Charge Power [kW] 2	4,2/3,6	7,7/6,6	11,2/9,8	15,0/13,1
Max/ConL. Discharge Current [A] 2	100/90	180/162	270/243	360/324
Max/Cont. Discharge Power [kW] 2	5,2/4,7	9,4/8,4	14,0/12,6	18,7/16,8
Max Recommended Inverter Total Rated Power (cont.) [kVA]	5kVA	8kVA	12kVA	15kVA
Nominal Voltage [V]	52V, to suit 48V Inverters, min 47V, max 56V *do not connect modules in series – (for high voltage batteries, refer to Freedom Won LITE HV ranges)			
Combined weight [kg]	45	90	135	180
Installation method	Stacked horizontally onto each other to form a tower with pedestals included, (one per module) or 19 inch rack mounted with brackets (cabinet excluded). Vertical mounting on floor or wall (shelf/bracket) with terminals facing upwards also acceptable. Generally up to 4 x e5000's per system (for larger capacity requirements, see Freedom Won LITE ranges)			
Dimensions when e5000 placed horizontally: Height x Width x Depth (Front to rear) (mm)	Single unit with pedestal: 247x460x463	2 module tower with pedestals: 479x460x463	3 module tower with pedestals: 711x460x463	4 module tower with pedestals: 943x460x463
Dimensions exclude busbars on front	Single unit without pedestal: 222x440x443			
Module height equates to 5U (U = standard 19" rack unit)				
				
DC Leads to Inverter or DC Bus per positive & negative connection - minimum cable size [mm²]	1 x 35mm	1 x 35mm	2 x 35mm	2 x 35mm
*cables included – see included accessories				

Enclosure	Steel – painted white, rated for indoor use only, out of direct sun and away from other heat sources.
DC Connection – Integrated Terminals on Front	2 x M6 bolts each for positive and for negative terminals for DC leads to inverter and busbars for connection of parallel e5000s in tower or rack configuration.
Tower Interconnecting Busbars – minimum cross section area [mm ²] *busbars included – see included accessories	70 (17mm x 4mm busbar available in accessories) *note that the Freedom Won busbar accessories are designed for the pedestal tower dimensions not for 19" rack mounting, which has different spacing.
Communication and Control Interfaces (See manual for further details)	- CAN Bus (RJ45 Socket x 1) – for interfacing with compatible inverters and system controllers (the eTower is fully compatible with all common CAN bus compatible brands). - RS485 (RJ45 Socket x 1) – for interfacing with the Victronics Axpert range of inverters equipped with a RS485 lithium battery interface and the applicable firmware. - RS232 (RJ45 Socket x 1) – for interfacing with a PC for firmware and setting updates (only by Freedom Won technicians). - RS485 (RJ45 x 2) – for the communication connection of parallel batteries up to four in tower. - Digital Outputs x 2 – for controlling external relays based on pre-set functions.
Protection	Internal electronic protection including overcurrent, cell under and over voltage, temperature out of range, weak cell detection, minimum SOC control, active voltage based charge current limiting. *do not short circuit or connect in reverse polarity!
Human Interface	- State of Charge Display (0 to 100% indicated by six green LED's) - Alarm LED (red) - Run LED (green) - On LED (green) - BMS Reset Button - Main On/Off Switch - Serial RS232 Plug for Programming via PC (by Freedom Won only) - Dip Switch block for selecting module addresses.
Warranty ³	10 years limited warranty
Design Life ⁴	>15 years
Included Accessories	- Plastic pedestal for tower stacking (cleats for 19" rack not included but available from Freedom Won if required). - DC cables standard 1,8m long in 35mm² single core with M6 terminal lugs on one end, red for positive and black for negative. - Interconnecting tower busbars drilled and cut to length for single tier jumps using tower pedestals, with heat shrink covering, red for positive and black for negative. - Interconnecting RS485 parallel battery communication cables for interconnecting the tower modules' communication RJ45 sockets (standard ethernet cables may also be used). - Inverter interface CAN Bus cable at 1,8m length for connecting compatible CAN bus equipped Victron inverters - Inverter interface CAN Bus cable at 1,8m length for connecting compatible CAN bus equipped Type 1 inverters e.g. Sunsynk, Growatt, Solis, Goodwe (see Freedom Won Interfacing Guide for full details). - Inverter interface RS485 cable at 1,8m length for connecting Victron/Axpert Inverters
Packaging	One e5000 per cardboard box complete with above included accessories.
Certificate of Compliance	UN 38.3 / IEC 62619

Notes to Specification Sheet

- DoD = Depth of Discharge, max recommended 90% DoD, recommended 80% DoD for average daily discharge, 70% DoD on average for optimal life.
Max permissible DoD is 100%.
- Max discharge and charge (current and power) duration – 5 minutes per 30-minute cycle.
- Refer to e tower warranty document for further details.
- Assumed moderate cycling and ideal conditions of temperature, charge and discharge rates, and depth of discharge per cycle.