BROADBAND INFRACO (SOC) LTD

Date : 25 May 2020
Enquiries: Zanele Sibiya
Tel : 011 235-1616
E-Mail : Zanele.Sibya@infraco.co.za

Dear Sir/Madam,

REQUEST FOR PROPOSALS: INF/TEN: 0259

CLOSING DATE: 24 JUNE 2020 AT 12h00 NOON (SOUTH AFRICAN TIME).

INVITATION TO SUBMIT PROPOSALS FOR THE APPOINTMENT OF A SERVICE PROVIDER FOR SUPPLY, DELIVERY AND INSTALLION OF DC POWER SYSTEMS, BATTERIES AND ASSOCIATED COMPONENTS FOR A PERIOD OF TWENTY-FOUR (24) MONTHS ON AN ''AS AND WHEN REQUIRED'' BASIS TO BROADBAND INFRACO SOC LIMITED.

BIDS WILL BE ACCEPTED IN THE FOLLOWING ORDER OF PREFERENCE;

1) **ALL 100% BLACK OWNED COMPANIES WITH 51% BLACK WOMAN OWNERSHIP AND 30% BLACK YOUTH OWNERSHIP.**

2) **ALL 100% BLACK OWNED COMPANIES WITH 51% BLACK WOMAN OWNERSHIP OR 30% BLACK YOUTH OWNERSHIP.**

3) **ALL 100% BLACK OWNED COMPANIES WITH 100% YOUTH OWNERSHIP.**

4) **TO ALL 100% BLACK OWNED COMPANIES WITH 100% BLACK WOMAN OWNERSHIP.**

Please take note that this is a confidential request and you are requested to treat all information, including this Request for Proposals as confidential and you must not discuss or divulge this information to any 3rd party without our written permission.

1. BACKGROUND ON BROADBAND INFRACO

Broadband Infraco SOC is a licensed state-owned company in the telecommunications sector. It is intended to improve market efficiency in the long-distance connectivity segment by increasing available long-distance network infrastructure. It will also avail capacity to stimulate private sector innovation in telecommunications services and content offerings. Broadband Infraco provides long distance national and international connectivity to licensed private sector partners, license-exempt project of national importance and to previously underserviced areas.

Broadband Infraco has various sites located across the country for the backhaul transmission network. This network is made of shelter sites and the normal building of brick and mortar which house the transmission equipment and other ancillary equipment. The ancillary equipment at site include the DC Power System, which is made up of the Rectifier system equipped with the banks of batteries. These batteries are used to carry the DC site load during the Mains Supply (Eskom) fail, they give them enough standby time for the Technician to respond to the failure with a mobile standby generator.

2. OBJECTIVE

The objective of this Request for Proposal (RFP) is to invite suitably qualified service providers is to for the services of supply, deliver, install and commissioning of DC power system, rectifiers, batteries and the related accessories for 24 months on ad-hoc basis.

3. LODGING OF TENDER AND CLOSING DATE

Your response under sealed cover and endorsed;

CONFIDENTIAL

INVITATION TO SUBMIT PROPOSALS FOR THE APPOINTMENT OF A SERVICE PROVIDER FOR SUPPLY, DELIVERY AND INSTALLION OF DC POWER SYSTEMS, BATTERIES AND ASSOCIATED COMPONENTS FOR A PERIOD OF TWENTY-FOUR (24) MONTHS ON AN ''AS AND WHEN REQUIRED'' BASIS TO BROADBAND INFRACO SOC LIMITED.

REQUEST FOR PROPOSALS INF/TEN:0259

ATTENTION: ZANELE SIBIYA

Must be delivered to **Broadband Infraco** at Country Club Estate, Building 9, 21 Woodlands Drive, Woodmead, Sandton before **12h00 (RSA Time) on 24 June 2020.**

One original and one copy of the original tender and **must also** be provided on a USB.

NB* All information as per the hard copy proposal must be saved in the USB.

Incomplete information will be rejected and Broadband Infraco will NOT accept late responses.

3.1 Broadband Infraco's Representative's details for this RFP is:

Name	:	Zanele Sibiya
Address	:	Woodmead Country Club Estate, Building 9,
		21 Woodlands Drive, Woodmead, Sandton
Tel No.	:	+ 27 11 235 1616
E-Mail	:	Zanele.Sibiya@infraco.za

3.2 Please take note that all questions or queries on this RFP must be communicated in writing to Infraco's *Representative* at the above-stated electronic mail address.

In terms of Broadband Infraco's Corporate Policy, all questions and queries received will be answered in writing. In the interests of fairness, the question together with Broadband Infraco's clarification and/or response thereto will only be made available to those *bidders* who have submitted a ***Receipt of Invitation Form*** indicating an intention to tender. The name of the *bidder* who requested clarification and/or posed a question will not be reflected in the clarification and/or response.

3.3 The tender documents are:

3.3.1 This RFP and the documents attached to this RFP as set out in the Document List and.

3.3.2 Such addendum, responses to *bidders'* queries and clarifications as may be issued by Broadband Infraco from time to time.

3.4 The provisions of this RFP and Broadband Infraco's Standard Conditions of Tender **(Annexure B)** are taken to be mutually explanatory of one another but in the event of ambiguity, discrepancy, divergence, inconsistency or omission from or in or between this RFP and Broadband Infraco's Standard Conditions of Tender, the provisions of this RFP shall take precedence over the provisions of Broadband Infraco's Standard Conditions of Tender.

3.5 A *bidder* is a Person, Original, Partnership, Agent, Joint Venture, Firm or Company eligible to submit a tender in response to this RFP.

3.6 Broadband Infraco deems that a submission of a proposal by a *bidder* in response to this RFP constitutes the *bidder's* acceptance of the Standard Conditions of Tender and the additional terms contained in this RFP.

3.7 Broadband Infraco's reservations of rights in respect of the tender:

3.7.1 *Bidders*' attention is specifically drawn to the fact that a contract in respect of the Employer's Requirements will not necessarily result from the tender responses Broadband Infraco receives in response to this RFP. Broadband Infraco reserves the right to conduct a further procurement process with or without a request for tender or to enter into negotiations with any one or more of the *bidders*, should it decide to proceed with contract award.

3.7.2 Broadband Infraco reserves the right to subject *bidders* and their facilities to assessment as part of the evaluation process or as a condition of the contract award.

3.7.3 Broadband Infraco reserves the right not to evaluate and/or consider any proposal by a *bidder* that do not comply strictly with the requirements as set out in this RFP and/or who do not meet one or more of the prerequisite tender requirements set out in the Specification **(Annexure J)**.

3.7.4 Broadband Infraco reserves the right to decide on the contract award based solely on the information received in the responses to this RFP. Broadband Infraco also reserves the right to use relevant information not contained in any tender but which is within the knowledge of any employee or Board member of Broadband Infraco or its advisors, agents or representatives for the purposes of making its decision.

3.8 Disclaimer of liability for representations, warranties or statements

Broadband Infraco believes all information contained in this RFP (and all its schedules and annexes) and all guidelines or in any other written material furnished or information orally transmitted to a potential *bidder* (including, but not limited to any opinion, information or advice that may be provided to a potential *bidder* by or on behalf of Broadband Infraco) to be correct but Broadband Infraco does not (save to the extent otherwise expressly provided for in a future written agreement with a successful *bidder*) make any representations or warranties, express or implied as to the accuracy or completeness of such information and expressly disclaims any and all liability for such representations, warranties or statements.

3.9 Black Economic Empowerment

Broadband Infraco requires all interested parties to provide their valid Broad Based Black Economic Empowerment status from a verified agency, sworn affidavits from QSEs and EMEs to be eligible to claim BBBEE points.

The *Employer* is committed to Broad Based Black Economic Empowerment principles and as such complies to the BEE Codes of Good Practice published by the Department of Trade Industry (DTI). The bidder is expected to be evaluated on these principles and must present a valid BBBEE status certificate and BBBEE Scorecard based on the DTI Interpretative Guide to the Codes of Good Practice.

http://www.thedti.gov.za/bee/InterpretiveGuide28june07doc.pdf)

4 KEY TENDER DATES

4.1 The following key tender dates are applicable to this tender:

Activity	Key Tender Dates
Tender publication date:	25 May 2020
Issuing of RFP document	25 May 2020
Briefing session	N/A
Closing date for written questions	05 June 2020
Deadline for responding to questions	12 June 2020
RFP closing date	24 June 2020 @12h00 noon

Any questions which may arise with regard to the interpretation of the RFP, or additional information required to clarify the RFP are to be submitted to:

Attention: Zanele Sibiya

Broadband Infraco (SOC) Limited

Telephone no. : +27 11 235 1616

Email: Zanele.Sibiya@infraco.co.za

The bidder is requested to refer to the clause and sub-clause number(s) to which its questions relate.

4.2 The validity period of the tender is one hundred and twenty (120) days from the tender closing date with the possibility of extension should it be necessary to allow the evaluation process.

4.2.1 *BIDDERS* OBLIGATIONS

4.2.2 Number of copies required.

A hard copy of each tender must be submitted as an original along with one (1) additional hard copy and one electronic copy of the complete tender on.

4.3 Required information for evaluation.

Make available all information in the response indicating compliance and/or non-compliance of each item required by the bid.

Acknowledging that non-submission of information required to evaluate of administrative and functionality will disqualify or prejudice the bidder in claiming and getting points where points are allocated.

4.4 Compliance and deviations

Indicate clearly which item of the bid is not quoted for or any deviations to the scope and specification of this bid.

5 CONDITIONS OF CONTRACT

Broadband Infraco will only accept proposals from interested parties that are prepared to accept and comply with the contract conditions as per the NEC3 Professional Services Contracts (PSC3), as

published by Thomas Telford Publishing on behalf of the Institution of Civil Engineers, United Kingdom. Copies available from Thomas Telford Ltd, 1 Heron Quay, London. (ISBN 0 7277 2634 X).

In South Africa, the published NEC can be purchased from Thomas Telford Publications, telephone number (011) 803 3008, and fax number (011) 803 3009.

6 SCOPE OF WORK

The service provider will be required to perform the necessary audit work, as required by Broadband Infraco (Please refer to Annexure J: Terms of Reference, **Doc No: FN-PR-SP-0001**

7 EVALUATION CRITERIA

Bidder/s proposal/s will be evaluated on a five (5) step evaluation by considering information requested in this RFP as follows.

Step 1. Pre-qualification requirements

Broadband Infraco has identified this bid for application of pre-qualification criteria as envisaged in the Preferential Procurement regulations 2017.

For the purpose of this bid, Pre-qualification will be done on the basis of B-BBEE Status level contributor.

(suppliers are advised to fill in the table below)

Step 2. Compliance to Mandatory administrative requirements

Mandatory administrative (gatekeepers) of the bid *(see annexures C, for detailed mandatory administrative of the bid).*

Step 3. Compliance to Mandatory functionality requirements (65% minimum threshold) *(see annexures J, for detailed mandatory technical requirements of the bid).*

Mandatory technical requirements (gatekeepers) of the bid *(see annexures C, for detailed mandatory technical requirements of the bid).*

Step 4. Compliance to technical requirements (65% minimum threshold) *(see annexures C, for detailed mandatory technical requirements of the bid).*

Compliance to the technical specification requirements of the bid in terms of accreditations, compliance and submission of all required information.

Step 5. 80/20 Price and BBBEE evaluation

a. Price Evaluation (80 points)

Adjudication Criteria	Points
Price Evaluation $Ps = 80\left(1 - \frac{Pt - Pmin}{Pmin}\right)$	80

Where:

Ps	=	Points scored for price of tender under consideration
Pt	=	Rand value of tender under consideration
Pmin	=	Rand value of lowest acceptable tender

b. B-BBEE Evaluation (20 points)

Bidders are required to submit original and valid B-BBEE Status Level Verification Certificates or certified copies thereof together with their tenders to substantiate the B-BBEE claims.
Bidders who do not submit B-BBEE Status Level Verification Certificates or non-compliant contributors to B-BBEE will not qualify for preference points for B-BBEE however will not be disqualified from the tender process. Such a tenderer will score points out of 80 for price and 0 points out of 20 for B-BBEE.

9. Insurance

Provide details of local as well as international professional indemnity insurance (Not applicable).

10. Joint Ventures/Distributors/Agents

In the event that a proposal is submitted by a consortium/joint venture, each party, consultant and or sub-contractor of such consortium/joint venture must complete or provide each of the documents mentioned below: -

- Company Registration Document and certified ID copies of directors/partners/members
- Fully completed SBD Forms
- Valid Tax Certificate
- Tax Pin Compliance Status Letter obtainable from SARS
- CSD Report
- Company profile
- JV Agreement
- Valid consolidated B-BBEE certificate/Affidavit

11. COMPANY INFORMATION REQUIRED

a. General Data

Registered Company Name	
Postal Address	
Contact Person	
Position in the Company	
Telephone number	
E-Mail address	

b. SARS Certificate (for South African registered companies only)

Bidder is required to provide Broadband Infraco with the Tax compliance status verification PIN (Third party authorization) to be used by Broadband Infraco to verify the bidder's tax compliance status.

Bidder is required to provide Broadband Infraco with the Central Supplier Database Master Registration Number (MAAA number) to verify the bidder's tax compliance status.

c. Shareholding and Directors

The firm must indicate the nature of the shareholding of the firm and provide the names of directors of the firm. *Item 9.3 must indicate percentage owned by Black Women, Black youth and disabled people.*

d. National Treasury List of Restricted Service Providers

No bid will be awarded to a person or company who has been listed in the National treasury lists of restricted service provider/suppliers as updated by National treasury.

e. National Treasury's Central Supplier Database (NT - CSD)

With effect from 1 April 2016, accounting officers and accounting authorities may not award any bid to a supplier/service provider not registered as a prospective supplier on the National Treasury's Central Supplier Database.

Bidder is required to provide Broadband Infraco with the Central Supplier Database Master Registration Number (MAAA number) or bidder's CSD report.

12. DISCUSSIONS

Broadband Infraco reserves the right to call upon any bidder to discuss or present its proposals as and when deemed necessary at the bidder's cost.

Under no circumstances will a presentation by or negotiation with any bidder constitute an award or promise / undertaking to award the contract.

13. YOUR PROPOSAL

To submit a valid and acceptable proposal to Broadband Infraco, your proposal /offer must include the following:

- Comply with all administrative and functionality evaluation requirements;
- A cover letter on your firm's official letterhead including acceptance of the requirements of the bid and the conditions in the bid document;
- Confirmation that all the mandatory compliance and requirements of the bid have been met with all the required documents submitted;
- Provide your Central Supplier Database report **(Compulsory);**
- Provide a Valid Tax Clearance certificate **(Compulsory)**.

14. SPECIAL CONDITIONS OF THIS BID

These special conditions must be read in conjunction with the general conditions and NEC3 conditions that are applicable to this bid.

- The Broadband Infraco reserves the rights to suggest partnerships or joint venture to be formed between bidders, or that the assignment must be awarded to an exclusive BEE firm.
- The Broadband Infraco reserve the rights to amend any conditions, validity period, etc. in the event of material changes to the procedures, all parties will be duly notified and be dealt with transparently and equitably.
- Other conditions additional to the ones mentioned above will be discussed and agreed between Broadband Infraco and the successful bidder/s prior contracting.

15. SIGNED CONFIDENTIALITY AGREEMENT

The attached confidentiality agreement included in Annexure E must be signed by the person who is authorized to sign on behalf of the firm and **returned** with the response to this RFP.

16 BID APPROVAL

Bid document for **INF/TEN:0259 –TO SUBMIT PROPOSALS FOR THE APPOINTMENT OF A SERVICE PROVIDER FOR SUPPLY, DELIVERY AND INSTALLION OF DC POWER SYSTEMS, BATTERIES AND ASSOCIATED COMPONENTS FOR A PERIOD OF TWENTY-FOUR (24) MONTHS ON AN ''AS AND WHEN REQUIRED'' BASIS TO BROADBAND INFRACO SOC LIMITED.**

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Mr. Mbulelo Hlobo
Acting General Manager – Supply Chain Management

Date: 21 May 2020

RECEIPT OF INVITATION FORM

TO:	**Broadband Infraco (SOC) Ltd**	FROM	
	Country Club Estate, Building 9	Name of firm	
	21 Woodlands Drive, Woodmead, Sandton	Sender	
		Email	
Attention	**Zanele Sibiya**		
Tel No.	**011 235-1616**	Tel No.	

REQUEST FOR PROPOSALS: INF/TEN: 0259

CLOSING DATE: 24 JUNE 2020 @ 12h00 NOON

INF/TEN:0259 – INVITATION TO SUBMIT PROPOSALS FOR THE APPOINTMENT OF A SERVICE PROVIDER FOR SUPPLY, DELIVERY AND INSTALLION OF DC POWER SYSTEMS, BATTERIES AND ASSOCIATED COMPONENTS FOR A PERIOD OF TWENTY-FOUR (24) MONTHS ON AN ''AS AND WHEN REQUIRED'' BASIS TO BROADBAND INFRACO SOC LIMITED

1 We have noted the *deadline for the RFP submission* and will be submitting our quotation before then and as instructed. We propose to submit a quotation in the name of the firm stated above.

2 We do not intend to submit a response for this service and return all of the attached documentation herewith. Our reason for not wishing to submit a quotation is as follows:

Nota Bene (NB)*

- This form must be sent back to Broadband Infraco's contact on the deadline of question responses – **05 June 2020** to allow Broadband to send responses and for individual bidders to prepare the responses so as the closing date cannot be affected by late questions and responses.

- Submission of this form will help Broadband Infraco compile a list of interested bidders who will be directly contactable when there are scope changes, addendums and/or for any formal communication for tender **INF/TEN: 0259**

Yours faithfully

for the *bidder*

ANNEXURE A

Document List

1. **RFP Document**
2. **Annexure A : Document list.**
3. **Annexure B : Broadband Infraco Standard Conditions of Tender.**
4. **Annexure C : Mandatory Administrative and technical evaluation requirements**
5. **Annexure D : Tender Returnable.**
6. **Annexure E : Confidentiality Agreement.**
7. **SBD 1 : Invitation to Bid**
8. **Annexure F : Declaration of Interest (SBD) 4**
9. **Annexure G : Preferential Procurement claim form SBD 6.1 2017**
10. **Annexure H : Declaration of bidder's past Supply Chain Management Practices SBD 8.**
11. **Annexure I : Independent bid determination SBD 9.**
12. **Annexure J : Specification Document**

ANNEXURE B

BROADBAND INFRACO SOC LIMITED

STANDARD CONDITIONS OF TENDER

January 2008

1 1 GENERAL

Actions

1 Broadband Infraco (SOC) Ltd (Infraco), Broadband Infraco's *Representative* and each *bidder* submitting a tender shall act timeously as stated in these Conditions of Tender and in a manner, which is fair, equitable, transparent, competitive and cost-effective.

Interpretation

2 Terms shown in *italics* vary for each tender. The details of each term for this tender are identified in the Tender Data. Terms shown in capital initials are defined terms in the appropriate conditions of contract.

3 Any additional or amended requirements in the Tender Data and additional requirements given in the Schedules in the *tender returnables* are deemed to be part of these Conditions of Tender.

4 The Conditions of Tender and the Tender Data shall not form part of any contract arising from this invitation to tender.

Communication

5 Each communication between Broadband Infraco and a *bidder* shall be to or from Broadband Infraco*'s Representative* only, and in a form that can be read, copied and recorded. Communication shall be in the English language. Infraco takes no responsibility for non-receipt of communications from or by a *bidder.*

Broadband Infraco's rights to accept or reject any tender

6 Broadband Infraco may accept or reject any variation, deviation, tender, or alternative tender, and may cancel the tender process and reject all tenders at any time prior to the formation of a contract. Broadband Infraco or Broadband Infraco*'s Representative* will not accept or incur any liability to a *bidder* for such cancellation and rejection but will give written reasons for the action upon written request to do so. Broadband Infraco reserves the right to accept the whole of any part of any tender.

After the cancellation of the tender process or the rejection of all tenders Broadband Infraco may abandon the proposed work and services, have it performed in any other manner, or re-issue a similar invitation to tender at any time.

2 2 BIDDERS OBLIGATIONS

The *bidder* shall comply with the following obligations when submitting a tender and shall:

Eligibility	1	Submit a tender only if the *bidder* complies with the *criteria* stated in the Tender Data and the *bidder,* or any of his principals, is not under any restriction to do business with Broadband Infraco.
Cost of tendering	2	Accept that Broadband Infraco will not compensate the *bidder* for any costs incurred in the preparation and submission of a tender, including the costs of any testing necessary to demonstrate that aspects of the tender satisfy the evaluation criteria.
Check documents	3	Check the *tender documents* on receipt, including pages within them, and notify Broadband Infraco*'s Representative* of any discrepancy or omissions using the enclosed fax-back form.
Confidentiality and copyright of documents	4	Treat as confidential all matters arising in connection with the tender. Use and copy the documents provided by Broadband Infraco only for the purpose of preparing and submitting a tender in response to this invitation.
Standardised specifications and other publications	5	Obtain, as necessary for submitting a tender, copies of the latest revision of standardised specifications and other publications, which are not attached but which are incorporated into the *tender documents* by reference.
Acknowledge receipt	6	Complete the Receipt of invitation and submit the tender fax-back form, which is attached to the Letter of Invitation, and return it within five days of receipt of the invitation.
	7	Acknowledge receipt of Addenda to the *tender documents,* which Broadband Infraco*'s Representative* may issue, and if necessary, apply for an extension to the *deadline for tender submission*, in order to take the Addenda into account.
Site visit and / or clarification meeting	8	Attend a site visit and/or clarification meeting at which *bidder*s may familiarize themselves with the proposed work, services or supply, location, etc. and raise questions. Details of the meeting(s) are stated in the Tender Data.
Seek clarification	9	Request clarification of the *tender documents,* if necessary, by notifying Broadband Infraco*'s Representative* earlier than the *closing time for clarification of queries*.
Insurance	10	Be informed that the extent (if any) of insurance provided by Broadband Infraco may not be for the full cover required in terms of the relevant category listed in Section 8 of the *conditions of contract*, the *bidder* is advised to seek qualified advice regarding insurance.

Pricing the tender

11 Include in the rates, prices, and the tendered total of the prices (if any) all duties, taxes (except VAT), and other levies payable by the successful *bidder.* Such duties, taxes and levies are those applicable 14 days prior to the *deadline for tender submission*.

12 Show Value Added Tax (VAT) payable by Broadband Infraco separately as an addition to the tendered total of the prices.

13 Provide rates and prices that are fixed for the duration of the contract and not subject to adjustment except as provided for in the *conditions of contract.*

14 State the rates and Prices in South African Rand unless instructed otherwise as an additional condition in the Tender Data. The selected *conditions of contract* may provide for part payment in other currencies.

Alterations to documents

15 Not make any alterations or additions to the *tender documents*, except to comply with instructions issued by Broadband Infraco*'s Representative* or if necessary, to correct errors made by the *bidder.* All such alterations shall be initialed by all signatories to the tender. Corrections may not be made using correction fluid, correction tape or the like.

Alternative tenders

16 Submit alternative tenders only if a main tender, strictly in accordance with all the requirements of the *tender documents* is also submitted. The alternative tender is submitted with the main tender together with a schedule that compares the requirements of the *tender documents* with the alternative requirements the *bidder* proposes.

17 Accept that an alternative tender may be based only on the criteria stated in the Tender Data and as acceptable to Broadband Infraco.

Submitting a tender

18 Submit a tender for providing the whole of the works, services or supply identified in the Contract Data unless stated otherwise as an additional condition in the Tender Data.

19 Return the *tender returnables* to Broadband Infraco*,* completing without exception all the forms, data and schedules included therein.

20 Submit the tender as an original plus the number of copies stated in the Tender Data and provide an English translation for documentation submitted in a language other than English. Tenders may not be written in pencil but must be completed in ink.

21 Sign the original and all copies of the tender where indicated. Broadband Infraco will hold the signatory duly authorised and liable on behalf of the *bidder*.

22 Seal the original and each copy of the tender as separate packages marking the packages as "ORIGINAL" and "COPY". Each package shall state on the

outside Broadband Infraco's address and invitation to tender number stated in the Tender Data, as well as the *bidders* name and contact address.

23 Seal original and copies together in an outer package that states on the outside only Broadband Infraco's address and invitation to tender number as stated in the Tender Data. The outer package must be marked "CONFIDENTIAL"

24 Accept that Broadband Infraco will not assume any responsibility for the misplacement or premature opening of the tender if the outer package is not sealed and marked as stated

Note:

Broadband Infraco prefers not to receive tenders by post and takes no responsibility for delays in the postal system or in transit within or between Broadband Infraco offices.

Where tenders are sent per fax, Broadband Infraco takes no responsibility for difficulties in transmission caused by line or equipment faults.

Where tenders are sent via courier, Broadband Infraco takes no responsibility for tenders delivered to any other site than the tender office.

Broadband Infraco employees are not permitted to deposit a tender into the Broadband Infraco tender box on behalf of a bidder, except those lodged by post or courier.

Closing time

26 Ensure that Broadband Infraco has received the tender at the address and in the tender box or fax specified in the Tender Data no later than the *deadline for tender submission*. Proof of posting will not be taken by Broadband Infraco as proof of delivery. Broadband Infraco will not accept a tender submitted telephonically, e-mail or by telegraph unless stated otherwise in the Tender Data.

27 Accept that, if Broadband Infraco extends the *deadline for tender submission* for any reason, the requirements of these Conditions of Tender apply equally to the extended deadline.

Tender validity

28 Hold the tender(s) valid for acceptance by Broadband Infraco at any time within the *validity period* after the *deadline for tender submission*.

29 Extend the *validity period* for a specified additional period if Broadband Infraco requests the *bidder* to extend it. A *bidder* agreeing to the request will not be required or permitted to modify a tender, except to the extent Broadband Infraco may allow for the effects of inflation over the additional period.

Clarification of tender after submission

30 Provide, on request from Broadband Infraco's *Representative* during the evaluation of tenders, any other material that has a bearing on the tender, the bidders commercial position (including notarised joint venture agreements), preferencing arrangements or samples of materials, considered necessary by Broadband Infraco for the purpose of a full and fair risk assessment. This may include providing a breakdown of rates or Prices. No change in the total of the Prices or substance of the tender is sought, offered, or permitted except as required by Broadband Infraco*'s Representative* to confirm the correction of arithmetical errors discovered in the evaluation of tenders. The total of the

Prices stated by the *bidder* as corrected by Infraco*'s Representative* with the concurrence of the *bidder*, shall be binding upon the *bidder*

Submit bonds, policies etc.

31 If instructed by Broadband Infraco*'s Representative* (before the formation of a contract), submit for Infraco*'s* acceptance, the bonds, guarantees, policies and certificates of insurance required to be provided by the successful *bidder* in terms of the *conditions of contract*.

32 Undertake to check the final draft of the contract provided by Broadband Infraco's *Representative and* sign the Form of Agreement all within the time required by these Conditions of Tender.

33 Where an agent on behalf of a principal submits a tender, an authenticated copy of the authority to act as an agent must be submitted with the tender.

Fulfil BEE requirements

34 Comply with Broadband Infraco's requirements regarding BEE and Black Women-owned Suppliers.

3 3 BROADBAND INFRACO'S UNDERTAKINGS

Broadband Infraco, and Broadband Infraco's *Representative*, shall:

Respond to clarification

1 Respond to a request for clarification received earlier than the *closing time for clarification of queries.* The response is notified to all *bidder*s.

Issue Addenda

2 If necessary, issue Addenda that may amend, amplify, or add to the *tender documents,* to each *bidder.* If a *bidder* applies for an extension to the *deadline for tender submission*, in order to take Addenda into account in preparing a tender, Broadband Infraco may grant such an extension and Broadband Infraco's *Representative* shall notify the extension to all *bidder*s.

Return late tenders

3 Return tenders received after the *deadline for tender submission* unopened to the *bidder* submitting a late tender. Tenders will be deemed late if they are not on the designated fax or in the designated tender box at the date and time stipulated as the deadline for tender submission.

Non-disclosure

4 Not disclose to *bidder*s, or to any other person not officially concerned with such processes, information relating to the evaluation and comparison of tenders and recommendations for the award of a contract, until after the award of the contract to the successful bidder.

Grounds for rejection

5 Consider rejecting a tender if there is any effort by a *bidder* to influence the processing of tenders or contract award.

Disqualification

6 Instantly disqualify a *bidder* (and his tender) if it is established that the *bidder* offered an inducement to any person with a view to influencing the placing of a contract arising from this invitation to tender.

Test for responsiveness

7 Determine before detailed evaluation, whether each tender properly received

- meets the requirements of these Conditions of Tender,
- has been properly signed, and
- is responsive to the requirements of the *tender documents*.

8 Judge a *responsive tender* as one which conforms to all the terms, conditions, and specifications of the *tender documents* without material deviation or qualification. A material deviation or qualification is one which, in Broadband Infraco*'s* opinion would

- detrimentally affect the scope, quality, or performance of the works, services or supply identified in the Contract Data*,*
- change Broadband Infraco*'s* or the *bidders* risks and responsibilities under the contract, or
- affect the competitive position of other *bidder*s presenting responsive tenders, if it were to be rectified.

Non-responsive tenders

9 Reject a non-responsive tender, and not allow it to be subsequently made responsive by correction or withdrawal of the non-conforming deviation or reservation.

Arithmetical errors

10 Check responsive tenders for arithmetical errors, correcting them as follows:

- Where there is a discrepancy between the amounts in figures and in words, the amount in words shall govern.
- If a bill of quantities applies and there is a discrepancy between the rate and the line item total, resulting from multiplying the rate by the quantity, the rate as quoted shall govern. Where there is an obviously gross misplacement of the decimal point in the rate, the line item total as quoted shall govern, and the rate will be corrected.
- Where there is an error in the total of the Prices, either as a result of other corrections required by this checking process or in the *bidder's* addition of prices, the total of the Prices, if any, will be corrected.
- The corrected price will be communicated to the bidder. The bidder may withdraw the tender but may not change the tendered price.

11 Reject a tender if the *bidder* does not accept the corrected total of the Prices (if any).

Evaluating the tender

12 Evaluate responsive tenders in accordance with the *procedure and criteria* stated in the Tender Data. The evaluated tender price will be disclosed only to the relevant Infraco tender committee and will not be disclosed to *bidder*s or any other person.

Clarification of a tender	13	Obtain from a *bidder* clarification of any matter in the tender which may not be clear or could give rise to ambiguity in a contract arising from this tender if the matter were not to be clarified.
Acceptance of tender	14	Notify Broadband Infraco's acceptance to the successful *bidder* before the expiry of the *validity period* or agreed additional period. Providing the notice of acceptance does not contain any qualifying statements, it will constitute the formation of a contract between Broadband Infraco and the successful *bidder*.
Notice to unsuccessful bidders	15	After the successful *bidder* has acknowledged Broadband Infraco*'s* notice of acceptance*,* notify other *bidder*s that their tenders have not been accepted, following Infraco's current procedures.
Prepare contract documents	16	Revise the contract documents issued by Broadband Infraco as part of the *tender documents* to take account of • Addenda issued during the tender period, • inclusion of some of the *tender returnable*, and • other revisions agreed between Broadband Infraco and the successful *bidder,* before the issue of Broadband Infraco's notice of acceptance (of the tender). • The schedule of deviations attached to the form of offer and acceptance, if any.
Issue final contract	17	Issue the final contract documents to the successful *bidder* for acceptance within one week of the date of Broadband Infraco's notice of acceptance.
Sign Form of Agreement	18	Arrange for authorized signatories of both parties to complete and sign the original and one copy of the Form of Agreement within two weeks of the date of Broadband Infraco's notice of acceptance of the tender. If either party requires the signatories to initial every page of the contract documents, the signatories for the other party comply with the request.
Complete Adjudicator's Contract	19	Unless alternative arrangements have been agreed, arrange for both parties to complete and sign the Form of Agreement and Contract Data for the NEC Adjudicator's Contract with the selected adjudicator.
Provide copies of the contracts	20	Provide to the successful *bidder* the number of copies stated in the Tender Data of the signed copy of the contracts within three weeks of the date of Broadband Infraco's acceptance of the tender.

ANNEXURE C

MANDATORY ADMINISTRATIVE AND TECHNICAL/FUNCTIONALITY EVALUATION REQUIREMENTS OF THE PROPOSAL.

1. BID EVALUATION METHODOLOGY

Points will be allocated for the evaluation criteria as discussed in this RFP; bidders will be ranked in terms of overall score attained in terms of the PPPFA Act.

1.1 The Evaluation will be done in five (5) phases, as follows:

1.1.1 Phase 1 Pre-Qualification criteria

Broadband Infraco has identified this bid for application of pre-qualification criteria as envisaged in the Preferential Procurement regulations 2017.

1.1.2 Phase 2 – Mandatory Administrative Requirements (Gatekeepers)

All bidders will need to provide all the mandatory administrative documents listed in this RFP document. ***Bidders who fail to provide any of the required mandatory documents will be disqualified and eliminated from the evaluation process.***

1.1.2 Phase 3 - Mandatory Technical Requirements (Gatekeepers)

All bidders will need to provide all the mandatory technical documents listed in this RFP document. ***Bidders who fail to provide any of the required mandatory documents will be disqualified and eliminated from the evaluation process.***

1.1.3 Phase 4 – Technical/Functionality Evaluation Criteria

All bidders will be evaluated in accordance with the technical/functional evaluation criteria listed in the RFP document.

Refer to Annexure C - for detailed **technical/functional evaluation** ***scoring criteria.***

1.1.4 Phase 5 - Price & Preference Evaluation (80/20 points system) will apply

All bidders will be evaluated in accordance to the Price & Preference criteria listed in the RFP document in accordance to the PPPF Act, Jan 2017.

1.1.5 Broadband Infraco in accordance to National Treasury Preferential Procurement Regulation, 2017, where it states in Section 11. (1)

"A contract may be awarded to a tender that did not score the highest points only in accordance with the section 2(1)(f) of the Act."

1. PHASE 1 – PRE-QUALIFICATION CRITERIA

Broadband Infraco has identified this bid for application of pre-qualification criteria as envisaged in the Preferential Procurement regulations 2017.

For the purpose of this bid, Pre-qualification will be done on the basis of B-BBEE Status level contributor.

(suppliers are advised to fill in the table below)

BIDS WILL BE ACCEPTED IN THE FOLLOWING ORDER OF PREFERENCE;

1.) All 100% black owned companies with 51% black woman ownership and 30% black youth ownership.

2.) All 100% black owned companies with 51% black woman ownership and/or 30% black youth ownership.

3.) All 100% black owned companies with 100% youth ownership.

4.) All 100% black owned companies with 100% black woman ownership.
woman ownership.

BBBEE LEVEL	% Black Ownership	% Black Woman Ownership	%Youth Ownership	Qualify Y/N

NOTE: Bidders who are not or who failed to produce proof to demonstrate compliance to the above-mentioned statement will be disqualified and eliminated from further evaluation.

2. PHASE 2 MANDATORY ADMINISTRATIVE REQUIREMENTS (GATEKEEPERS

Below is a list of mandatory requirements bidder/s must include in their response/s:

2.1 Completion and submission of SBD 1 -	**Comply**	**Not comply**
Bidders must provide completed SBD 1 – "Invitation to Bid".		
Substantiate/Comment		
2.2 Completion and submission of SBD 4 - Annexure F	**Comply**	**Not comply**
Bidders must provide completed SBD 4 – "Declaration of interest".		
Substantiate/Comment		
2.3 Completion and submission of SBD 6.1 - Annexure G	**Comply**	**Not comply**
Bidders must provide completed SBD 6.1 – "Preference Points Claim Form in terms of the preferential procurement regulations 2017"		
Substantiate/Comment		
2.4 Completion and submission of SBD 8 - Annexure H	**Comply**	**Not comply**
Bidders must provide completed SBD 8 – "Declaration of Bidders Past Supply Chain Management Practices".		
Substantiate/Comment		
2.5. Completion and submission of SBD 9 - Annexure I	**Comply**	**Not comply**
Bidders must provide completed SBD 9 – "Certificate of Independent Bid Determination".		
Substantiate/Comment		
2.6 National Treasury Central Supplier Database (CSD)	**Comply**	**Not comply**
With effect from 1 April 2016, Accounting Officers and Accounting Authorities may not award any bid to a supplier/service provider not registered as a prospective supplier on the National Treasury's Central Supplier Database. Please attach the full report of the Central Supplier Database (CSD) from National Treasury to the bid response. Please provide proof of registration with National Treasury.		
Substantiate/Comment		

2.7 South African Revenue Services Certificate	**Comply**	**Not comply**
Bidder is required to submit a Valid SARS Tax clearance certificate accompanied by a third-party authorisation PIN as provided by the tax authority as verification information to be used by Broadband Infraco to validate SARS matters on website.		
Substantiate/Comment		
2.8 BEE Certificate	**Comply**	**Not comply**
Bidder is required to submit a Valid SARS Tax clearance certificate accompanied by a third-party authorisation PIN as provided by the tax authority as verification information to be used by Broadband Infraco to validate SARS matters on website.		
Substantiate/Comment		

Table 4: Mandatory requirements

3. PHASE 3 – FUNCTIONALITY EVALUATION

Functionality evaluation will be in accordance with the criteria below.

1. FUNCTIONALITY EVALUATION

Functionality evaluation will be in accordance with the criteria below.

Item	Criterion	Score
Resource experience	Experience of the resource to be deployed The bidder must provide the experience of the resource allocated for this project. The delegates must have sufficient experience in doing power installations in the Telecommunication sector (attach proof, cv and qualification) and issue CoCs according to latest SANS 10142-1 in the past (for 3 phase installations) 1. Installers – Minimum of 2 delegates and a qualified Electrician (<2 Years) = **0 points**. 2. Installers – Minimum of 2 delegates and a qualified Electrician (combined experience of 2-5 years) = **5 points**. 3. Installers – Minimum of 2 delegates and a qualified Electrician (combined experience of 5-10 years) with proof of a CoC issued according to latest SANS 10142-1 for a 3phase installation = **10 points**. 4. Installers – Minimum of 2 delegates and a qualified Electrician (combined experience of +10 years) with proof of at least 3 x CoC issued according to latest SANS 10142-1 for 3phase installations = **20 points**	**20**

Repair Centre	The supplier must have the capability to repair the faulty equipment. The supplier must have a LAB/repair centre OR provide a letter of agreement with a third party that has a LAB/ repair centre. Proof of LAB or agreement must be submitted. 1. No repair centre or proof of agreement with a third party that has = **0 points** 2. Has the repair centre OR has proof of agreement with a repair centre = **15 points**	**15**
Spares availability	The supplier must have spares locally available on rectifier modules, controllers and offered batteries in case of warrantee claims and or Dead on Arrival stock. The supplier must keep spares or have an arrangement with the main supplier for a certain number of spares to be kept locally for supply for use in case of emergency. The supplier must keep in stock a *minimum of 32 batteries, for emergency procurement at all times*. The supplier must be able to supply complete system (DC Power system and batteries) The stock should be delivered to Johannesburg warehouse or be sent to the relevant regions and available in maximum 24hours. 1. No stock locally available and OR lead time of 6 days or more = **0 points**. **2.** Has stock locally available and can deliver on site in 2-5 days = **5 points** **3.** Has stock locally available and can deliver on site in 0-1 days = **15 points**	**15**

Technical Training	Facilitate training or third-party training for the end users on how to use and operate the equipment. The users of the equipment are based in different Broadband Infraco regional centres located across Republic of South Africa. The training must be interactive and practical at the supplier's training facilities (in South Africa) The supplier must provide a letter confirming the number of persons that will be trained. 1. No free training or training is outside of South Africa = **0 points** 2. Free training for ten (10) people at the bidder's premises (in South Africa) = **10 points** 3. Free training for twenty (20) people at the bidder's premises (in South Africa) = **20 points**	**20**
Warranty	The supplier must offer a warranty of 3 years for all rectifier modules, controllers and batteries against all software and hardware related failures. Provide a warranty schedule indicating items covered by the warranty. 1. Less than 2 years warranty = **0 points** 2. Two (2) years warranty for rectifiers, controllers, and batteries = **20 points** 3. Three (3) years warranty for rectifiers, controllers, and batteries = **30 points**	**30**

Minimum score of 65 must be obtained to be considered for further evaluation

4. PHASE 4 – TECHNICAL EVALUATION

NB: IT IS NOTED THAT BROADBAND INFRACO WILL CONDUCT SITE VISITS WITH COMPANIES SHORTLISTED AT THIS STAGE WHERE BIDDERS WILL HAVE TO DEMONSTRATE AND CONDUCT LIVE TESTINGS OF THE PRODUCT ON OFFER.

A minimum score of 65 must be obtained to be considered for further evaluation on price and preference

4.1 Technical Evaluation Criteria

Section	Category	Criteria as per NE-NT-SP0009
Power System		Technical Requirement Specification, Section 6.1
General Requirements	General	Technical Requirement Specification, Section 6.2
	Documentation	Technical Requirement Specification, Section 6.2.1
	System Failure Rate	Technical Requirement Specification, Section 6.2.2
	Materials and Components	Technical Requirement Specification, Section 6.2.3
Power System	General	Technical Requirement Specification, Section 6.3.1
	Total Power Rating	Technical Requirement Specification, Section 6.3.2
	Cabinet	Technical Requirement Specification, Section 6.3.3
	AC Distribution	Technical Requirement Specification, Section 6.3.4
	Front Access	Technical Requirement Specification, Section 6.3.5
	Load Entry	Technical Requirement Specification, Section 6.3.6
	Rack Earth	Technical Requirement Specification, Section 6.3.7
	DC Distribution	Technical Requirement Specification, Section 6.3.8
	Low Voltage Disconnect	Technical Requirement Specification, Section 6.3.9
Power rating and rectifier module	Rectifier module	Technical Requirement Specification, Section 6.4.1
	Required amount of rectifier modules	Technical Requirement Specification, Section 6.4.2
	Output Power limiting	Technical Requirement Specification, Section 6.4.3
	AC input voltage	Technical Requirement Specification, Section 6.4.4

Section	Category	Criteria as per NE-NT-SP0009
	AC input Frequency	Technical Requirement Specification, Section 6.4.5
	Harmonic distortion	Technical Requirement Specification, Section 6.4.6
	Soft Start facility	Technical Requirement Specification, Section 6.4.7
	Rectifier module conversion efficiency	Technical Requirement Specification, Section 6.4.8
	Power factor requirements	Technical Requirement Specification, Section 6.4.9
	Current sharing	Technical Requirement Specification, Section 6.4.10
	Stand alone	Technical Requirement Specification, Section 6.4.11
Rectifier module	Protection	Technical Requirement Specification, Section 6.4.12
	Battery temperature compensation	Technical Requirement Specification, Section 6.4.13
	Rectifier modules protection	Technical Requirement Specification, Section 6.4.14
	Rectifier modules alarm	Technical Requirement Specification, Section 6.4.15
	Power density	Technical Requirement Specification, Section 6.4.16
	Rectifier modules connection	Technical Requirement Specification, Section 6.4.17
	Rectifier module setup and parameter adjustment	Technical Requirement Specification, Section 6.4.18
	Power System Operating Temperature	Technical Requirement Specification, Section 6.4.19
	EMC	Technical Requirement Specification, Section 6.4.20
	Noise level	Technical Requirement Specification, Section 6.4.21
	Safety	Technical Requirement Specification, Section 6.4.22
	Rectifier warrantee	Technical Requirement Specification, Section 6.4.23
LVD	Width	Technical Requirement Specification, Section 6.5.1
	Output Voltage setting and control	Technical Requirement Specification, Section 6.5.2

Section	Category	Criteria as per NE-NT-SP0009
	LVD control	Technical Requirement Specification, Section 6.5.3
Controller	Sleep mode function on rectifier modules	Technical Requirement Specification, Section 6.5.4
	Battery Temperature Compensation	Technical Requirement Specification, Section 6.5.5
	Alarms Outputs	Technical Requirement Specification, Section 6.5.6
	Battery Current limitation	Technical Requirement Specification, Section 6.5.7
	AC Input Monitoring	Technical Requirement Specification, Section 6.5.8
	Logging function	Technical Requirement Specification, Section 6.5.9
	Password and Username protection	Technical Requirement Specification, Section 6.5.10
	Controller Powering Requirements	Technical Requirement Specification, Section 6.5.11
	Controller display and interface	Technical Requirement Specification, Section 6.5.12
	Construction	Technical Requirement Specification, Section 6.5.13
	Controller Monitoring and control	Technical Requirement Specification, Section 6.5.14
	Communication	Technical Requirement Specification, Section 6.5.15
	Software	Technical Requirement Specification, Section 6.5.16
	Controller warrantee	Technical Requirement Specification, Section 6.5.17
Battery management		Technical Requirement Specification, Section 6.6
Batteries	Battery Type	Technical Requirement Specification, Section 6.7.1
	Battery sizing	Technical Requirement Specification, Section 6.7.2
	Battery performance	Technical Requirement Specification, Section 6.7.3
	Battery quality testing	Technical Requirement Specification, Section 6.7.4
	Battery warrantee	Technical Requirement Specification, Section 6.7.5
Drawings and brochures		Technical Requirement Specification, Section 6.8

Section	Category	Criteria as per NE-NT-SP0009
Quality Assurance		Technical Requirement Specification, Section 6.9
Installation and recovery of old rectifiers and batteries		Technical Requirement Specification, Section 6.10
Recovery and removal and disposal of redundant batteries		Technical Requirement Specification, Section 6.11
Maintenance process		Appendix 7.1
Support Services		Appendix 7.2
Surge Protection		Appendix 7.3
Battery requirements as per IEC 896-21/22		Appendix 7.4
Lead times	Production capabilities	*Provide details on:* • Manufacturing capacity (How many systems can be manufactured per week) • What is lead times on all various systems with forecasting supplied • What is lead times on all various systems without forecasting supplied
Sample prototype and factory visit*	Sample inspection and factory evaluation	• Inspect prototypes and general workmanship of systems and individual items

4.2 Weighting of Technical Evaluation Criteria

Category	Sub-Weight [%]
Power System	30
General Requirements	
Power System	
Power rating and rectifier modules	
Controller	10
Battery Management	
Batteries	15
Drawings and brochures	5
Quality Assurance	5
Installation and recovery of old rectifier and batteries	5
Recovery, removal and disposal of redundant batteries	
Maintenance processes	10
Support processes	
Surge protection requirements	5
Battery requirements as per IEC 896-21/22	15
Total	100

5. PHASE 5 - COMMERCIAL EVALUATION

5.1 BROAD BASED BLACK ECONOMIC EMPOWERMENT (BBBEE)

Point Scoring System.

- Only bidders who have submitted a valid and acceptable B-BBBEE certificate, letters from registered accounting officers/auditors, sworn affidavits for QSEs and EMEs or valid consolidated JV B-BBBEE certificates will qualify for points as per table of points below:

Preference points table

B-BBEE STATUS LEVEL OF CONTRIBUTOR	**NUMBER OF POINTS (80/20 SYSTEM)**
1	20
2	18
3	14
4	12
5	8
6	6
7	4
8	2
Non-compliant	0

Table 6: Commercial Evaluation

Bidders who qualify as EMEs in terms of the B-BBEE Act must submit a certificate issued by an Accounting Officer as contemplated in the CCA or a Verification Agency accredited by SANAS or a Registered Auditor. Registered auditors do not need to meet the prerequisite for IRBA's approval for the purpose of conducting verification and issuing EMEs with B-BBEE Status Level Certificates. EMEs can also submit certified sworn affidavit as prescribed by DTI.

- Bidders other than EMEs must submit their original and valid B-BBEE status level verification certificate or a certified copy thereof, substantiating their B-BBEE rating issued by a Registered Auditor approved by IRBA or a Verification Agency accredited by SANAS.
- A trust, consortium or joint venture, will qualify for points for their B-BBEE status level as a legal entity, provided that the entity submits their ***consolidated*** B-BBEE status level certificate.
- A trust, consortium or joint venture will qualify for points for their B-BBEE status level as an unincorporated entity, provided that the entity submits their consolidated B-BBEE scorecard as if they were a group structure and that such a consolidated B-BBEE scorecard is prepared for every separate bid.
- Tertiary institutions and public entities will be required to submit their B-BBEE status level certificates in terms of the specialised scorecard contained in the B-BBEE Codes of Good Practice.

A person 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 EME that has the capability and ability to execute the sub-contract**.**

5.2 Pricing schedule

Pricing structure

Assumptions:

Rate of exchange

1 USD =	R 18.35	
1 EURO =	R 19.96	
1 POUND =	R 22.36	
LME Lead price =	$2 601.45	USD per tonne

Calculating of installation, re-imbursement cost and travelling cost. (This cost to be included for all 5 types)

Installation cost	For each site replace old rectifier and batteries with new rectifier and batteries. Commission new rectifier and batteries and connect all AC and DC cables to new rectifier.
Reimbursement rate of scrapped batteries	Scrap old batteries. Current installed batteries on each site is 16 x 12V batteries with a weight of each battery 60kg
Travelling and accommodation	1 route consisting out of 5 sites Each site current rectifier systems comprises of 1 x 2200mm x 600mm x 600mm cabinets with weight of 100kg each For each site recover old rectifier and batteries. Scrapped old batteries and deliver old rectifiers to Johannesburg Round trip including all 5 sites from Johannesburg back to Johannesburg is 3000km (Assume average speed of 80km/hour)

Power System Type 1				
	Comments / product code or name	Quantity	Unit price	Total Price
Chassis				
Rectifier module				
Controller				
Battery management (if separate from controller)				
Battery and intercell connectors				
AC circuit breakers and surge protection				
DC load and battery circuit breakers				
Cabinet 1 price				
Cabinet 2 price (if applicable)				
Labour and Installation cost				
Other costs (Please specify)				
			Total cost	
Reimbursement of scrapped batteries				
			Total	

Power System Type 2				
	Comments / product code or name	Quantity	Unit price	Total Price
Chassis				
Rectifier module				
Controller				
Battery management (if separate from controller)				
Battery and intercell connectors				
AC circuit breakers and surge protection				
DC load and battery circuit breakers				
Cabinet 1 price				
Labour and Installation cost				
Other costs (Please specify)				
			Total cost	
Reimbursement of scrapped batteries				
			Total	

Power System Type 3				
	Comments / product code or name	Quantity	Unit price	Total Price
Chassis				
Rectifier module				
Controller				
Battery management (if separate from controller)				
Battery and intercell connectors				
AC circuit breakers and surge protection				
DC load and battery circuit breakers				
Cabinet 1 price				
Cabinet 2 price (if applicable)				
Labour and Installation cost				
Other costs (Please specify)				
			Total cost	
Reimbursement of scrapped batteries				
			Total	

Power System Type 4				
	Comments / product code or name	Quantity	Unit price	Total Price
Chassis				
Rectifier module				
Controller				
Battery management (if separate from controller)				
Battery and intercell connectors				
AC circuit breakers and surge protection				
DC load and battery circuit breakers				
Cabinets price				
Cabinet 1 price				
Cabinet 2 price (if applicable)				
Cabinet 3 price (if applicable)				
Labour and Installation cost				
Other costs (Please specify)				
			Total cost	
Reimbursement of scrapped batteries				
			Total	

Power System Type 5 - rectifier 1				
	Comments / product code or name	Quantity	Unit price	Total Price
Chassis				
Rectifier module				
Controller				
Battery management (if separate from controller)				
Battery and intercell connectors				
AC circuit breakers and surge protection				
DC load and battery circuit breakers				
Cabinets price				
Labour and Installation cost				
Other costs (Please specify)				
			Total cost	
Reimbursement of scrapped batteries				
			Total	

Power System Type 5 - rectifier 2				
	Comments / product code or name	Quantity	Unit price	Total Price
Chassis				
Rectifier module				
Controller				
Battery management (if separate from controller)				
Battery and intercell connectors				
AC circuit breakers and surge protection				
DC load and battery circuit breakers				
Cabinets price				
Labour and Installation cost				
Other costs (Please specify)				
			Total cost	
Reimbursement of scrapped batteries				
			Total	

Other costs

	Comments / product code or name	Quantity	Unit price	Total Price
Travelling				
Accomodation				

ANNEXURE D

(TENDER RETURNABLES CHECKLIST)

Supplier: …… Bid Number: **INF/TEN:0259**

Item Number	DESCRIPTION	YES	NO
Administrative requirements			
1.	Full copy of submission on USB		
2.	1 tender hard copy, (1 original, 1 copy)		
3.	Pricing schedule (Annexure K)		
	General data		
4.	Company profile covering all the administrative, technical and functionality requirements of the bid		
5.	Completion and submission of All SBD Documents		
6.	Valid SARS Tax clearance certificate accompanied by a third-party authorization PIN as provided by the tax authority to each bidder.		
7.	Shareholding and Directors percentage ownership		
8.	Signed confidentiality agreement		
9.	Acceptance of validity of tender – 120 days from closing of bid		
10.	No bid will be awarded to a person or company who has been listed in the National treasury lists of restricted service provider/suppliers as updated by National treasury.		
11.	With effect from 1 April 2016, Accounting Officers and Accounting Authorities may not award any bid to a supplier/service provider not registered as a prospective supplier in the National Treasury's Central Supplier Database. Please attach full Central Supplier Database (CSD) report from National Treasury as part of the bid response.		
12.	Mandatory section – Table 4		
	B-BBEE		
13.	Valid B-BBEE status certificate from accredited verification agencies, Accounting officers or accredited auditors, Sworn affidavits for QSEs and EMEs.		
Technical requirements			
14.	Relevant industry certification documents		
15.	List of contactable references, as per table x		

Table 6: Tender returnable

ANNEXURE E

CONFIDENTIALITY AND NON-DISCLOSURE AGREEMENT

CONFIDENTIALITY AND NON-DISCLOSURE AGREEMENT

"Agreement"

Between

BROADBAND INFRACO SOC LIMITED

And

[NAME OF OTHER PARTY]

THE PARTIES TO THIS AGREEMENT ARE: -

I. **BROADBAND INFRACO SOC LIMITED** a company incorporated under the laws of the Republic of South Africa, having its registered office at Country Club Estate, building 9, 21 Woodlands Drive, Woodmead, Sandton, Republic of South Africa, with registration number *1989/001763/07* [hereinafter referred to as the "Disclosing Party").

II. **NAME OF OTHER PARTY** a company incorporated under the laws of [insert name of country], having its registered office at [registered address], Republic of South Africa, with registration number [insert registration number] [hereinafter referred to as the "Receiving Party").

Hereinafter individually referred to as a "Party" and jointly as the "Parties".

NOW THEREFORE, IT IS HEREBY AGREED AS FOLLOWS:

1.1 The Disclosing Party intends providing the Receiving Party with certain information relating to the Disclosing Party for tendering for – **Appointment of a service provider for supply, delivery and installation of dc power systems, batteries and associated components for a period of twenty-four (24) months on an ''as and when required'' basis to broadband Infraco soc limited.**

1.2 The parties wish to record the terms and conditions upon which the Disclosing Party shall disclose Confidential Information to the Receiving Party, which terms and conditions shall constitute a binding and enforceable Agreement between the parties and their agents.

1.3 Notwithstanding the date of signature hereof, this agreement shall be binding upon the parties with effect from the date upon which the Disclosing Party shall have disclosed any Confidential Information to the Receiving Party, whichever date is the earliest.

1.4 Neither this Agreement nor the exchange of information contemplated hereby shall commit either party to continue discussions or to negotiate, or to be legally bound to any potential business relationship. The parties shall only be bound to a business relationship by way of a further definitive written Agreement signed by the Parties.

1.5 The party disclosing the Confidential Information shall be known as the "**Disclosing Party**" and the party receiving Confidential Information shall be known as the "**Receiving Party**".

2. THE CONFIDENTIAL INFORMATION

"**Confidential Information**" shall for the purpose of this Agreement include, without limitation, any technical, commercial or financial information, know-how, trade secrets, processes, machinery, designs, drawings, technical specifications and data relating to the Project (including, but not limited to, the information set out in 1.1 above) in whatever form, relating to the disclosing Party's business practices or the promotion of the disclosing Party's business plans, policies or practices, which information is communicated to the receiving Party, or otherwise acquired by the Receiving Party from the Disclosing Party, during the course of the Parties' commercial interactions, discussions and negotiations with one another, whether such information is formally designated as confidential or not.

3. DISCLOSURE OF CONFIDENTIAL INFORMATION

3.1 The Disclosing Party shall only disclose the Confidential Information to the Receiving Party to the extent deemed necessary or desirable by the Disclosing Party in its discretion.

3.2 The Parties acknowledge that the Confidential Information is a valuable, special and unique asset proprietary to the Disclosing Party.

3.3 The Receiving Party agrees that it will not, during or after the course of its relationship with the disclosing party under this agreement and/or the term of this Agreement, disclose the Confidential Information to any third party for any reason or purpose whatsoever without the prior written consent of the Disclosing Party and to the extent of such authorization, save in accordance with the provisions of this Agreement. In this Agreement "**third party**" means any party other than the Receiving and Disclosing Parties or their Representatives.

3.4 Notwithstanding anything to the contrary contained in this Agreement the Parties agree that the Confidential Information may be disclosed by the Receiving Party to its respective employees, agents, officers, directors, subsidiaries, associated companies, shareholders and advisers (including but not limited to professional financial advisers, legal advisers and auditors) ("Representatives") on a need-to-know basis and for the purposes of the Project; provided that the Receiving Party takes whatever steps are necessary to procure that such Representatives agree to abide by the terms of this Agreement to prevent the unauthorized disclosure of the Confidential Information to third parties. For purposes of this clause, the Receiving Party's Representatives shall be deemed to be acting, in the event of a breach, as the Receiving Party's duly authorized agents.

3.5 Except as otherwise contemplated in this Agreement, the Parties agree in favor of one another not to utilize, exploit or in any other manner whatsoever use the Confidential Information disclosed pursuant to the provisions of this Agreement for any purpose whatsoever other than the Project without the prior written consent of the Disclosing Party.

3.6 Accordingly, the Receiving Party agrees to indemnify, defend and hold the Disclosing Party harmless from and against any and all suits, liabilities, causes of action, claims, losses, damages, costs (including, but not limited to, cost of cover, reasonable attorneys' fees and expenses), or expenses of any kind (collectively, "Losses") incurred or suffered by the Disclosing Party and/or its Representatives arising from or in connection with the Receiving Party's unauthorized use or disclosure of the Disclosing Party's Confidential Information in violation of the Agreement.

4. TITLE

All Confidential Information disclosed by the Disclosing Party to the Receiving Party is acknowledged by the Receiving Party to be proprietary and the exclusive property of the Disclosing Party. This Agreement shall not confer any rights of ownership or license on the Receiving Party of whatever nature in the Confidential Information.

5. RESTRICTING ON DISCLOSURE AND USE OF THE CONFIDENTIAL INFORMATION

5.1 The Receiving Party undertakes not to use the Confidential Information for any purpose other than:

5.1.1 the Project; and

5.1.2 in accordance with the provisions of this Agreement.

6. STANDARD OF CARE

The Receiving Party agrees that it shall protect the Confidential Information disclosed pursuant to the provisions of this Agreement using the same standard of care that it applies to safeguard its own proprietary, secret or Confidential Information but no less than a reasonable standard of care, and that the Confidential Information shall be stored and handled in such a way as to prevent any unauthorized disclosure thereof.

7. RETURN OF MATERIAL CONTAINING OR PERTAINING TO THE CONFIDENTIAL INFORMATION

7.1 The Disclosing Party may, at any time, and in its sole discretion request the Receiving Party to return any material and/or data in whatever form containing, pertaining to or relating to Confidential Information disclosed pursuant to the terms of this Agreement and may, in addition request the Receiving Party to furnish a written statement to the effect that, upon such return, the Receiving Party has not retained in its possession, or under its control, either directly or indirectly, any such material and/or data.

7.2 If it is not practically able to do so, the Receiving Party shall destroy or ensure the destruction of all material and/or data in whatever form relating to the Confidential Information disclosed pursuant to the terms of this Agreement and delete, remove or erase or use best efforts to ensure the deletion, erasure or removal from any computer or database or document retrieval system under its or the Representatives' possession or control, all Confidential Information and all documents or files containing or reflecting any Confidential Information, in a manner that makes the deleted, removed or erased data permanently irrecoverable. The Receiving Party shall furnish the Disclosing Party with a written statement signed by one of its directors or duly authorized senior officers to the effect that all such material has been destroyed.

7.3 The Receiving Party shall comply with any request by the Disclosing Party in terms of this clause, within 7 (seven) business days of receipt of any such request.

8. EXCLUDED CONFIDENTIAL INFORMATION

The obligations of the Receiving Party pursuant to the provisions of this Agreement shall not apply to any Confidential Information that:

8.1 is known to, or in the possession of the Receiving Party prior to disclosure thereof by the Disclosing Party;

8.2 is or becomes publicly known, otherwise than as a result of a breach of this Agreement by the Receiving Party;

8.3 is developed independently of the Disclosing Party by the Receiving Party in circumstances that do not amount to a breach of the provisions of this Agreement;

8.4 is disclosed by the Receiving Party to satisfy an order of a court of competent jurisdiction or to comply with the provisions of any law or regulation in force from time to time; provided that in these circumstances, the Receiving Party shall advise the Disclosing Party to take whatever steps it deems necessary to protect its interests in this regard and provided further that the Receiving Party will disclose only that portion of the Confidential Information which it is legally required to disclose and the Receiving Party will use its reasonable endeavors to protect the confidentiality of such Confidential Information to the greatest extent possible in the circumstances;

8.5 is disclosed to a third party pursuant to the prior written authorization and limited to the extent of such approval of the Disclosing Party;

8.6 is received from a third party in circumstances that do not result in a breach of the provisions of this Agreement.

9. TERM

This Agreement shall commence upon the date referred to in paragraph 1.3 and shall endure for a period of 2 (two) years after the date of termination of the relationship between the parties referred to herein.

10. ADDITIONAL ACTION

10.1 Each Party to this Agreement shall execute and deliver such other documents and do such other acts and things as may be reasonably necessary or desirable to give effect to the provisions of this Agreement.

10.2 Nothing contained in the Agreement shall be construed as creating an obligation on the part of either Party to refrain from entering into a business relationship with any third party. Nothing contained in the Agreement shall be construed as creating a joint venture, partnership or employment relationship between the Parties. Except as specified herein, neither Party shall have the right, power or implied authority to create any obligation or duty (express, implied or otherwise) on behalf of the other Party. For the avoidance of doubt, nothing in this Agreement shall oblige either of the Parties to enter into any agreements or transactions whatsoever.

11. BREACH

In the event that the Receiving Party should breach any of the provisions of this Agreement and fail to remedy such breach within seven (7) business days from date of a written notice to do so, then the Disclosing Party shall be entitled to invoke all remedies available to it in law including, but not limited to, the institution of urgent proceedings as well as any other way of relief appropriate under the circumstances, in any court of competent jurisdiction, in the event of breach or threatened breach of the Agreement and/or an action for damages.

12. AMENDMENTS

No amendment, interpretation or waiver of any of the provisions of this Agreement shall be effective unless reduced in writing and signed by the duly authorized representatives of both Parties.

13. ENFORCEMENT

The failure or delay by the Disclosing Party to enforce or to require the performance at any time of any of the provisions of this Agreement shall not be construed to be a waiver of such provision, and shall not affect either the validity of this Agreement or any part hereof or the right of the Disclosing Party to enforce the provisions of this Agreement.

14. HEADINGS

The headings of the clauses of this Agreement are used for convenience only and shall not affect the meaning or construction of the contents of this Agreement.

15. REPRESENTATIONS & WARRANTIES

15.1 Each Party represents that it has authority to enter into this Agreement and to do all things necessary to procure the fulfilment of its obligations in terms of this Agreement.

15.2 The Disclosing Party warrants that disclosure of the Confidential Information to the Receiving Party:

15.2.1 will not result in a breach of any other Agreement to which it is a party; and

15.2.2 will not, to the best of its knowledge and belief, infringe the rights of any third party; and the Disclosing Party hereby indemnifies and holds the Receiving Party harmless against any liability for third party claims on such a basis.

16. ENTIRE AGREEMENT

This Agreement contains the entire agreement of the Parties with respect to the subject matter of this Agreement and supersedes all prior agreements between the Parties, whether written or oral, with respect to the subject matter of this Agreement.

17. GOVERNING LAW

This Agreement and the relationship of the Parties in connection with the subject matter of this Agreement and each other shall be governed and determined in accordance with the laws of the Republic of South Africa.

18. DOMICILIA AND NOTICES

18.1 The Parties hereby choose *domicilium citandi et executandi* ("domicilium") for all purposes under the Agreement the addresses set out below:

PARTY	PHYSICAL ADDRESS	POSTAL ADDRESS	TELEPHONE NO.	CONTACT PERSON
BROADBAND INFRACO STATE OWNED COMPANY LIMITED	COUNTRY CLUB ESTATE, BUILDING 9, 21 WOODLANDS DRIVE, WOODMEAD, SANDTON	Postnet Suite 321, Private Bag X26, Sunninghill, 2157	011 235-1616 011 235 -1602	ZANELE SIBIYA
INSERT PARTICULARS OF OTHER PARTY				

18.2 Any notice given by one party to the other is deemed to have been received by the addressee:

18.2.1 on the date on which the same was delivered to the addressee's address if delivered by hand; or

18.2.2 on the seventh calendar day after the date of posting if sent by pre-paid registered post to the addressee's address; or

18.2.3 on dispatch, if sent to the addressee's then telefax number.

18.3 A party may change that party's address for this purpose, by notice in writing to the other party, such a change of address being effective seven days after the deemed receipt by the addressee of such written notice, provided that the changed address must be a physical address. A notice will also be necessary in respect of new or changed telefax number.

19. SEVERABILITY

In the event of any one or more of the provisions of this Agreement being held for any reason to be invalid, illegal or unenforceable in any respect, such invalidity, illegality or unenforceability shall not affect any other provision of this Agreement, and this Agreement shall be construed as if such invalid, illegal or unenforceable provisions was not a part of this Agreement, and this Agreement shall be carried out as nearly as possible in accordance with its original terms and intent.

20. ASSIGNMENT

20.1 Neither Party may assign or otherwise transfer any of its rights or obligations under this Agreement to any third party without the prior written consent of the other Party.

20.2 This Agreement shall be binding on and shall inure for the benefit of the successors and permitted assigns and personal representatives (as the case may be of the parties).

21. PUBLICITY

Neither party will make or issue any formal or informal announcement or statement to the press or any third party in connection with this Agreement without the prior written consent of the other Party.

SIGNED by the Parties and witnessed on the following dates and at the following places respectively:

SIGNED at _____ on _____

AS WITNESS:

For: **BROADBAND INFRACO SOC LIMITED**

_____ _____

DULY AUTHORISED

_____ _____

(NAME OF WITNESS IN PRINT) [SPECIFY FULL NAME OF SIGNATORY]

SIGNED at _____ on _____

AS WITNESS:

For: **[NAME OF OTHER PARTY]**

_____ _____

DULY AUTHORISED

_____ _____

(NAME OF WITNESS IN PRINT) [SPECIFY FULL NAME OF SIGNATORY]

STANDARD BIDDING DOCUMENT 1 (SBD 1) - PART A: INVITATION TO BID

YOU ARE HEREBY INVITED TO BID FOR REQUIREMENTS OF BROADBAND INFRACO (SOC) LTD					
BID NUMBER:	**INF/TEN: 0259**	CLOSING DATE:	**24 JUNE 2020**	CLOSING TIME:	**12H00 NOON**
DESCRIPTION	**SUPPLY, DELIVERY AND INSTALLION OF DC POWER SYSTEMS, BATTERIES AND ASSOCIATED COMPONENTS FOR A PERIOD OF TWENTY-FOUR (24) MONTHS ON AN ''AS AND WHEN REQUIRED'' BASIS TO BROADBAND INFRACO SOC LIMITED**				

BID RESPONSE MUST BE HAND DELIVERED

SUPPLIER INFORMATION						
NAME OF BIDDER						
POSTAL ADDRESS						
STREET ADDRESS						
TELEPHONE NUMBER	CODE		NUMBER			
CELLPHONE NUMBER						
FACSIMILE NUMBER	CODE		NUMBER			
E-MAIL ADDRESS						
VAT REGISTRATION NUMBER						
TAX CLEARANCE NUMBER						
	TCS PIN:		**OR**	CSD No:		
B-BBEE STATUS LEVEL VERIFICATION CERTIFICATE [TICK APPLICABLE BOX]	☐ Yes ☐ No		B-BBEE STATUS LEVEL SWORN AFFIDAVIT	☐ Yes ☐ No		
IF YES, WHO WAS THE CERTIFICATE ISSUED BY?						
AN ACCOUNTING OFFICER AS CONTEMPLATED IN THE CLOSE CORPORATION ACT (CCA) AND NAME THE APPLICABLE IN THE TICK BOX	☐	AN ACCOUNTING OFFICER AS CONTEMPLATED IN THE CLOSE CORPORATION ACT (CCA)				
	☐	A VERIFICATION AGENCY ACCREDITED BY THE SOUTH AFRICAN ACCREDITATION SYSTEM (SANAS)				
	☐	A REGISTERED AUDITOR				
		NAME:				
[A B-BBEE STATUS LEVEL VERIFICATION CERTIFICATE/SWORN AFFIDAVIT (FOR EMEs& QSEs) SHALL 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 PART B:3 BELOW]
SIGNATURE OF BIDDER	……	*DATE*	
CAPACITY UNDER WHICH THIS BID IS SIGNED (Attach proof of authority to sign this bid; e.g. resolution of directors, etc.)			

PART B: TERMS AND CONDITIONS FOR BIDDING

1. BID SUBMISSION:

1.1. BIDS SHALL BE DELIVERED BY THE STIPULATED TIME TO THE CORRECT ADDRESS. LATE BIDS WILL NOT BE ACCEPTED FOR CONSIDERATION.

1.2. ALL BIDS SHALL BE SUBMITTED ON THE OFFICIAL FORMS PROVIDED– (NOT TO BE RE-TYPED) OR ONLINE

1.3. BIDDERS SHALL REGISTER ON THE CENTRAL SUPPLIER DATABASE (CSD) TO UPLOAD MANDATORY INFORMATION NAMELY: (BUSINESS REGISTRATION/ DIRECTORSHIP/ MEMBERSHIP/IDENTITY NUMBERS; TAX COMPLIANCE STATUS; AND BANKING INFORMATION FOR VERIFICATION PURPOSES). B-BBEE CERTIFICATE OR SWORN AFFIDAVIT FOR B-BBEE SHALL BE SUBMITTED TO BIDDING INSTITUTION.

1.4. WHERE A BIDDER IS NOT REGISTERED ON THE CSD, MANDATORY INFORMATION NAMELY: (BUSINESS REGISTRATION/ DIRECTORSHIP/ MEMBERSHIP/IDENTITY NUMBERS; TAX COMPLIANCE STATUS MAY NOT BE SUBMITTED WITH THE BID DOCUMENTATION. B-BBEE CERTIFICATE OR SWORN AFFIDAVIT FOR B-BBEE SHALL BE SUBMITTED TO BIDDING INSTITUTION.

1.5. THIS BID IS SUBJECT TO THE PREFERENTIAL PROCUREMENT POLICY FRAMEWORK ACT 2000 AND THE PREFERENTIAL PROCUREMENT REGULATIONS, 2017, THE GENERAL CONDITIONS OF CONTRACT (GCC) AND, IF APPLICABLE, ANY OTHER LEGISLATION OR SPECIAL CONDITIONS OF CONTRACT.

2. TAX COMPLIANCE REQUIREMENTS

2.1 BIDDERS SHALL ENSURE COMPLIANCE WITH THEIR TAX OBLIGATIONS.

2.2BIDDERS ARE REQUIRED TO SUBMIT THEIR UNIQUE PERSONAL IDENTIFICATION NUMBER (PIN) ISSUED BY SARS TO ENABLE THE ORGAN OF STATE TO VIEW THE TAXPAYER'S PROFILE AND TAX STATUS.

2.3APPLICATION FOR TAX COMPLIANCE STATUS (TCS) OR PIN MAY ALSO BE MADE VIA E-FILING. IN

ORDER TO USE THIS PROVISION, TAXPAYERS WILL NEED TO REGISTER WITH SARS AS E-FILERS THROUGH THE WEBSITE WWW.SARS.GOV.ZA.

2.4 BIDDERS MAY ALSO SUBMIT A PRINTED TCS TOGETHER WITH THE BID.

2.5 IN BIDS WHERE CONSORTIA / JOINT VENTURES / SUB-CONTRACTORS ARE INVOLVED; EACH PARTY SHALL SUBMIT A SEPARATE PROOF OF TCS / PIN / CSD NUMBER.

2.6 WHERE NO TCS IS AVAILABLE BUT THE BIDDER IS REGISTERED ON THE CENTRAL SUPPLIER DATABASE (CSD), A CSD NUMBER AND PROOF SHALL BE PROVIDED.

3. QUESTIONNAIRE TO BIDDING FOREIGN SUPPLIERS

3.1. IS THE BIDDER A RESIDENT OF THE REPUBLIC OF SOUTH AFRICA (RSA)? ☐
YES ☐ NO

3.2. DOES THE BIDDER HAVE A BRANCH IN THE RSA? ☐ YES ☐
NO

3.3. DOES THE BIDDER HAVE A PERMANENT ESTABLISHMENT IN THE RSA?
☐ YES ☐ NO

3.4. DOES THE BIDDER HAVE ANY SOURCE OF INCOME IN THE RSA?
☐ YES ☐ NO

IF THE ANSWER IS "NO" TO ALL OF THE ABOVE, THEN, IT IS NOT A REQUIREMENT TO OBTAIN A TAX COMPLIANCE STATUS / TAX COMPLIANCE SYSTEM PIN CODE FROM THE SOUTH AFRICAN REVENUE SERVICE (SARS) AND IF NOT REGISTER AS PER 2.3 ABOVE.

NB: FAILURE TO PROVIDE ANY OF THE ABOVE PARTICULARS MAY RENDER THE BID INVALID.

ANNEXURE F

STANDARD BIDDING DOCUMENT (SBD) 4 - DECLARATION OF INTEREST -

1. Any legal person, including persons employed by the state[1], or persons having a kinship with persons employed by the state, including a blood relationship, may make an offer or offers in terms of this invitation to bid (includes an advertised competitive bid, a limited bid, a proposal or written price quotation). In view of possible allegations of favoritism, should the resulting bid, or part thereof, be awarded to persons employed by the state, or to persons connected with or related to them, it is required that the bidder or his/her authorized representative declare his/her position in relation to the evaluating/adjudicating authority where-

- the bidder is employed by the state; and/or

- the legal person on whose behalf the bidding document is signed, has a relationship with persons/a person who are/is involved in the evaluation and or adjudication of the bid(s), or where it is known that such a relationship exists between the person or persons for or on whose behalf the declarant acts and persons who are involved with the evaluation and or adjudication of the bid.

2. In order to give effect to the above, the following questionnaire Shall be completed and submitted with the bid.

2.1 Full Name of bidder or his or her representative: …….

2.2 Identity Number: ……

2.3 Position occupied in the Company (director, trustee, shareholder[2], member):

……..

2.4 Registration number of company, enterprise, close corporation, partnership agreement or trust:

……..…….……

2.5 Tax Reference Number: ……..……

2.6 VAT Registration Number: …..……

2.6.1 The names of all directors / trustees / shareholders / members, their individual identity numbers, tax reference numbers and, if applicable, employee / PERSAL numbers Shall be indicated in paragraph 3 below.

[1]"State" means –

(a) any national or provincial department, national or provincial public entity or constitutional institution within the meaning of the Public Finance Management Act, 1999 (Act No. 1 of 1999);

(b) any municipality or municipal entity;

(c) provincial legislature;

(d) national Assembly or the national Council of provinces; or

(e) Parliament.

[2]" Shareholder" means a person who owns shares in the company and is actively involved in the management of the enterprise or business and exercises control over the enterprise.

2.7 Are you or any person connected with the bidder presently employed by the state? **YES / NO**

2.7.1 If so, furnish the following particulars:

……

Name of person / director / trustee / shareholder/ member:

…….……..……

Name of state institution at which you or the person connected to the bidder is employed:

……..

Position occupied in the state institution:

Any other particulars:

……

……

……

2.7.2 If you are presently employed by the state, did you obtain the appropriate authority to undertake remunerative work outside employment in the public sector? **YES / NO**

2.7.2.1 If yes, did you attach proof of such authority to the bid document? **YES / NO**

(Note: Failure to submit proof of such authority, where applicable, may result in the disqualification of the bid.

2.7.2.2 If no, furnish reasons for non-submission of such proof:

…….

…….

…….

2.8 Did you or your spouse, or any of the company's directors / trustees / shareholders / members or their spouses conduct business with the state in the previous twelve months? **YES / NO**

2.8.1 If so, furnish particulars:

……..

……..

……...

2.9 Do you, or any person connected with the bidder, have any relationship (family, friend, other) with a person employed by the state and who may be involved with the evaluation and or adjudication of this bid? **YES / NO**

2.9.1 If so, furnish particulars.

……...

……..….

……

2.10 Are you, or any person connected with the bidder, **YES/NO**

aware of any relationship (family, friend, other) between

any other bidder and any person employed by the state

who may be involved with the evaluation and or adjudication

of this bid?

2.10.1 If so, furnish particulars**.**

……

……

……

2.11 Do you or any of the directors / trustees / shareholders / members **YES/NO**

of the company have any interest in any other related companies

whether or not they are bidding for this contract?

2.11.1 If so, furnish particulars:

……

……

……

3 Full details of directors / trustees / members / shareholders.

Full Name	Identity Number	Personal Income Tax Reference Number	State Employee Number / Persal Number

NB: Bidders can also attach shareholder certificates instead of completing the above.

4 DECLARATION

I, THE UNDERSIGNED (NAME)……

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

I ACCEPT THAT THE STATE MAY REJECT THE BID OR ACT AGAINST ME SHOULD THIS DECLARATION PROVE TO BE FALSE.

…….. ……

Signature Date

…… ……

Position Name of bidder

ANNEXURE G

SBD 6.1

PREFERENCE POINTS CLAIM FORM IN TERMS OF THE PREFERENTIAL PROCUREMENT REGULATIONS 2017

This preference form must form part of all bids invited. It contains general information and serves as a claim form for preference points for Broad-Based Black Economic Empowerment (B-BBEE) Status Level of Contribution

1.1 NB: BEFORE COMPLETING THIS FORM, BIDDERS MUST STUDY THE GENERAL CONDITIONS, DEFINITIONS AND DIRECTIVES APPLICABLE IN RESPECT OF B- BBEE, AS PRESCRIBED IN THE PREFERENTIAL PROCUREMENT REGULATIONS, 2017.

---

1. **GENERAL CONDITIONS**

1.1 The following preference point systems are applicable to all bids:

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

1.2

a) The value of this bid is estimated to not exceed R50 000 000 (all applicable taxes included) and therefore the ……80/20…… preference point system shall be applicable;

1.3 Points for this bid shall be awarded for:

(a) Price; and

(b) B-BBEE Status Level of Contributor.

1.4 The maximum points for this bid are allocated as follows:

	POINTS
PRICE	**80**
B-BBEE STATUS LEVEL OF CONTRIBUTOR	**20**
Total points for Price and B-BBEE must not exceed	**100**

1.5 Failure on the part of a bidder to submit proof of B-BBEE Status level of contributor together with the bid, will be interpreted to mean that preference points for B-BBEE status level of contribution are not claimed.

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

2. DEFINITIONS

(a) **"B-BBEE"** means broad-based black economic empowerment as defined in section 1 of the Broad-Based Black Economic Empowerment Act;

(b) "**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;

(c) **"bid"** means a written offer in a prescribed or stipulated form in response to an invitation by an organ of state for the provision of goods or services, through price quotations, advertised competitive bidding processes or proposals;

(d) **"Broad-Based Black Economic Empowerment Act"** means the Broad-Based Black Economic Empowerment Act, 2003 (Act No. 53 of 2003);

(e) **"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;

(f) **"functionality"** means the ability of a tenderer to provide goods or services in accordance with specifications as set out in the tender documents.

(g) **"prices"** includes all applicable taxes less all unconditional discounts;

(h) "proof of B-BBEE status level of contributor" **means:**

1) B-BBEE Status level certificate issued by an authorized body or person;

2) A sworn affidavit as prescribed by the B-BBEE Codes of Good Practice;

3) Any other requirement prescribed in terms of the B-BBEE Act;

(i) **"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;

(j) **"rand value"** means the total estimated value of a contract in Rand, calculated at the time of bid invitation, and includes all applicable taxes;

3. POINTS AWARDED FOR PRICE

3.1 THE 80/20 PREFERENCE POINT SYSTEMS

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

80/20

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

Where

Ps = Points scored for price of bid under consideration

Pt = Price of bid under consideration

Pmin = Price of lowest acceptable bid

4. POINTS AWARDED FOR B-BBEE STATUS LEVEL OF CONTRIBUTOR

4.1 In terms of Regulation 6 (2) and 7 (2) of the Preferential Procurement Regulations, preference points must be awarded to a bidder for attaining the B-BBEE status level of contribution in accordance with the table below:

B-BBEE Status Level of Contributor	Number of points (80/20 system)
1	20
2	18
3	14
4	12
5	8
6	6
7	4
8	2
Non-compliant contributor	0

5. SUB-CONTRACTING

5.1 Will any portion of the contract be sub-contracted? (***Tick applicable box***)

YES		NO	

5.2 If yes, indicate:

- What percentage of the contract will be sub-contracted?

……%

- The name of the sub-contractor……..
- The B-BBEE……status level of the…Sub-contractor.....
- Whether the sub-contractor is an EME or QSE

(Tick applicable box)

YES		NO	

- Specify, by ticking the appropriate box, if subcontracting with an enterprise in terms of Preferential Procurement Regulations,2017:

Designated Group: An EME or QSE which is at last 51% owned by:	EME √	QSE √
Black people		

Black people who are youth		
Black people who are women		
Black people with disabilities		
Black people living in rural or underdeveloped areas or townships		
Cooperative owned by black people		
Black people who are military veterans		
OR		
Any EME		
Any QSE		

6. DECLARATION WITH REGARD TO COMPANY/FIRM

6.1 Name of company/firm:……

6.2 VAT registration number:……

6.3 Company registration number:……

6.4 TYPE OF COMPANY/ FIRM.

⌋ Partnership/Joint Venture / Consortium
⌋ One person business/sole propriety
⌋ Close corporation
⌋ Company
⌋ (Pty) Limited

[TICK APPLICABLE BOX]

6.5 DESCRIBE PRINCIPAL BUSINESS ACTIVITIES

……
……
……
……

6.6 COMPANY CLASSIFICATION

⌋ Manufacturer
⌋ Supplier
⌋ Professional service provider
⌋ Other service providers, e.g. transporter, etc.

[*TICK APPLICABLE BOX*]

6.7 Total number of years the company/firm has been in business:……

6.8 I/we, the undersigned, who is / are duly authorised to do so on behalf of the company/firm, certify that the points claimed, based on the B-BBE status level of contributor indicated in paragraphs 1.4 and 6.1 of the foregoing certificate, qualifies the company/ firm for the preference(s) shown and I / we 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 6.1, the contractor may be required to furnish documentary proof to the satisfaction of the purchaser that the claims are correct;

iv) If the B-BBEE status level of contributor has been claimed or obtained on a fraudulent basis or any of the conditions of contract have not been fulfilled, the purchaser may, in addition to any other remedy it may have –

(a) disqualify the person from the bidding 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 bidder or contractor, its shareholders and directors, or only the shareholders and directors who acted on a fraudulent basis, be restricted by the National Treasury 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.

WITNESSES

1. ……..

2. …….

ANNEXURE H

STANDARD BIDDING DOCUMENT (SBD) 8 - DECLARATION OF BIDDER'S PAST SUPPLY CHAIN MANAGEMENT PRACTICES

1 This Standard Bidding Document Shall form part of all bids invited.

2 It serves as a declaration to be used by institutions in ensuring that when goods and services are being procured, all reasonable steps are taken to combat the abuse of the supply chain management system.

3 The bid of any bidder may be disregarded if that bidder, or any of its directors have-

- abused the institution's supply chain management system;
- committed fraud or any other improper conduct in relation to such system; or
- failed to perform on any previous contract.

4 In order to give effect to the above, the following questionnaire Shall be completed and submitted with the bid.

Item	Question	Yes	No
4.1	Is the bidder or any of its directors listed on the National Treasury's Database of Restricted Suppliers as companies or persons prohibited from doing business with the public sector? **(Companies or persons who are listed on this Database were informed in writing of this restriction by the Accounting Officer/Authority of the institution that imposed the restriction after the *audi alteram partem* rule was applied).** The Database of Restricted Suppliers now resides on the National Treasury's website (**www.treasury.gov.za**) and can be accessed by clicking on its link at the bottom of the home page.	Yes ☐	No ☐
4.1.1	If so, furnish particulars:		

4.2	Is the bidder or any of its directors listed on the Register for Tender Defaulters in terms of section 29 of the Prevention and Combating of Corrupt Activities Act (No 12 of 2004)? **The Register for Tender Defaulters can be accessed on the National Treasury's website (www.treasury.gov.za) by clicking on its link at the bottom of the home page.**	Yes ☐	No ☐
4.2.1	If so, furnish particulars:		
4.3	Was the bidder or any of its directors convicted by a court of law (including a court outside of the Republic of South Africa) for fraud or corruption during the past five years?	Yes ☐	No ☐
4.3.1	If so, furnish particulars:		
4.4	Was any contract between the bidder and any organ of state terminated during the past five years on account of failure to perform on or comply with the contract?	Yes ☐	No ☐
4.4.1	If so, furnish particulars:		

CERTIFICATION

I, THE UNDERSIGNED (FULL NAME) ……

CERTIFY THAT THE INFORMATION FURNISHED ON THIS DECLARATION FORM IS TRUE AND CORRECT.

I ACCEPT THAT, IN ADDITION TO CANCELLATION OF A CONTRACT, ACTION MAY BE TAKEN AGAINST ME SHOULD THIS DECLARATION PROVE TO BE FALSE.

……... **……..**

Signature **Date**

…… **……..**

Position **Name of Bidder**

ANNEXURE I

STANDARD BIDDING DOCUMENT (SBD) 9 - CERTIFICATE OF INDEPENDENT BID DETERMINATION

1 This Standard Bidding Document (SBD 9) Shall form part of all bids[1] invited.

2 Section 4 (1) (b) (iii) of the Competition Act No. 89 of 1998, as amended, prohibits an agreement between, or concerted practice by, firms, or a decision by an association of firms, if it is between parties in a horizontal relationship and if it involves collusive bidding (or bid rigging).[2] Collusive bidding is a *pe se* prohibition meaning that it cannot be justified under any grounds.

3 Treasury Regulation 16A9 prescribes that accounting officers and accounting authorities Shall take all reasonable steps to prevent abuse of the supply chain management system and authorizes accounting officers and accounting authorities to:

a. disregards the bid of any bidder if that bidder, or any of its directors have abused the institution's supply chain management system and or committed fraud or any other improper conduct in relation to such system.

b. cancels a contract awarded to a supplier of goods and services if the supplier committed any corrupt or fraudulent act during the bidding process or the execution of that contract.

4 This SBD serves as a certificate of declaration that would be used by institutions to ensure that, when bids are considered, reasonable steps are taken to prevent any form of bid-rigging.

5 In order to give effect to the above, the attached Certificate of Bid Determination (SBD 9) Shall be completed and submitted with the bid:

[1] Includes price quotations, advertised competitive bids, limited bids and proposals.

[2] Bid rigging (or collusive bidding) occurs when businesses, that would otherwise be expected to compete, secretly conspire to raise prices or lower the quality of goods and / or services for purchasers who wish to acquire goods and / or services through a bidding process. Bid rigging is, therefore, an agreement between competitors not to compete. Once detected by Broadband Infraco, such act of criminality will be reported to relevant authorities including National Treasury for Blacklisting.

CERTIFICATE OF INDEPENDENT BID DETERMINATION

I, the undersigned, in submitting the accompanying bid:

_____

(Bid Number and Description)

in response to the invitation for the bid made by:

_____

(Name of Institution)

do hereby make the following statements that I certify to be true and complete in every respect:

I certify, on behalf of: _____that:

(Name of Bidder)

1. I have read and I understand the contents of this Certificate;
2. I understand that the accompanying bid will be disqualified if this Certificate is found not to be true and complete in every respect;
3. I am authorized by the bidder to sign this Certificate, and to submit the accompanying bid, on behalf of the bidder;
4. Each person whose signature appears on the accompanying bid has been authorized by the bidder to determine the terms of, and to sign the bid, on behalf of the bidder;
5. For the purposes of this Certificate and the accompanying bid, I understand that the word "competitor" shall include any individual or organization, other than the bidder, whether or not affiliated with the bidder, who:
   (a) has been requested to submit a bid in response to this bid invitation;
   (b) could potentially submit a bid in response to this bid invitation, based on their qualifications, abilities or experience; and
   (c) provides the same goods and services as the bidder and/or is in the same line of business as the bidder
6. 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 consortium[3] will not be construed as collusive bidding.
7. In particular, without limiting the generality of paragraphs 6 above, there has been no consultation, communication, agreement or arrangement with any competitor regarding:
   (a) prices;
   (b) geographical area where product or service will be rendered (market allocation)
   (c) methods, factors or formulas used to calculate prices;
   (d) the intention or decision to submit or not to submit, a bid;

(e) the submission of a bid which does not meet the specifications and conditions of the bid; or

(f) bidding with the intention not to win the bid.

8. In addition, there have been no consultations, communications, agreements or arrangements with any competitor regarding the quality, quantity, specifications and conditions or delivery particulars of the products or services to which this bid invitation relates.

9. 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.

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.

10. 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.

……	……
Signature	Date
……	……
Position	Name of Bidder

ANNEXURE J

TERMS OF REFERENCE

Broadband Infraco

Technical Requirement Specification:
Rectifiers and Batteries

Document Number: NE-NT-SP-0009

Compiled by:	: Willem Grobbelaar
Version:	: 2.0
Domain:	: Network Engineering
Revision date:	: November 2012

RECOMMENDED BY:

Name:	Andre Hoffmann		
Title/Position:	Chief Engineer (Transmission)		2012/02/01
Section:	Network Engineering	Signature	Date

AUTHORISED BY:

Name:	Kiruben Pillay		
Title/Position:	Chief Technical Officer	Signature	02/02/12 Date

CHANGES SINCE LAST VERSION

The applicable changes to the document		
Change requested by:	**Network Engineering**	
Service Org SPOC:		
Contact number:		

SUMMARY OF CHANGES		
Paragraph	**Description**	**Date**
		2010/07/14
All	Updated with new requirements	November 2011

Previous Document Authorisation date:	Previous Author/Compiler: Rian Breed
Previous Section:	Previous Domain:

TABLE OF CONTENTS

LIST OF TABLES

1. SCOPE

The scope of this specification is limited to the direct current (-48V DC) rectifier and battery systems that Broadband Infraco (Pty) Ltd (Broadband Infraco) will deploy in network equipment rooms or containers where DC power supply is required.

2. OBJECTIVE

This specification details the technical requirements of Broadband Infraco for the manufacture, supply, delivery and installation of DC rectifier and battery systems. The DC rectifier and battery systems are for use in Broadband Infraco's network equipment rooms for the continuous supply of 48V DC power to telecommunication network equipment.

This specification comprises technical requirements for DC rectifier and battery systems in the following areas:

- General Requirements
- Power System cabinet
- Rectifier modules
- Controller
- Battery management
- Batteries
- Drawings
- Quality Assurance
- Installation
- Recovery of old redundant batteries
- Warrentee

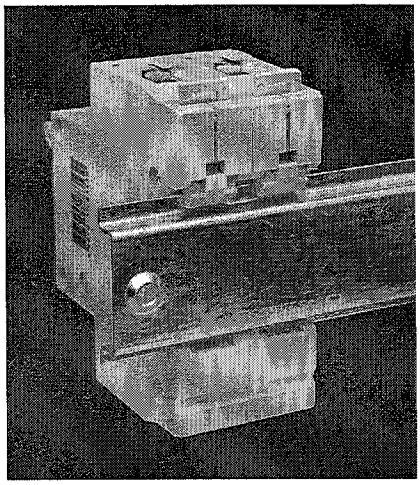
In addition, the specification also requests information regarding the maintenance and support processes of suppliers.

3. REFERENCE DOCUMENTATION

a) SANS 1042-1 – Wiring of premises
b) SANS IEC 60896-21– Stationary lead acid batteries part 21- Valve regulated batteries – Methods of tests
c) SANS IEC 60896-22– Stationary lead acid batteries part 21- Valve regulated batteries – Requirements
d) SABS IEC 60950- Safety of information technology equipment, including electrical business equipment (Alternative UL950)
e) SANS 1973-3 Low-voltage switchgear and controlgear assemblies Part 3: Safety of ASSEMBLIES with rated prospective short-circuit currents of up to and including 10 kA
f) SANS 1973-8 Low-voltage switchgear and controlgear assemblies: Part 8: Safety of minimally tested assemblies (MTA) with a rated short circuit current above and including 10kA and a rated bus-bar up to 1600A (AC and DC).
g) SANS 529 Degrees of protection provided by enclosures.
h) SABS 1574-3 - Electric flexible cores, cords and cables with solid extruded dielectric insulation – Part 3: PVC-insulated cores and cables
i) SABS 1507- Electric cables with extruded solid dielectric insulation for fixed installations (300/500 V to 1 900/3 300 V)
j) SABS IEC 61643 Surge protective devices connected to low-voltage power distribution systems

4. DEFINITIONS, ABBREVIATIONS AND ACRONYMS

4.1 Definitions

Word	Meaning
C2, C4, C10 rate	Capacity of the battery at the various discharge rates i.e. 2 hours, 4 hours or 10 hour respectively
DIN	A DIN rail or top-hat rail is a standardized 35 mm wide metal rail with hat-shaped cross section widely used for mounting circuit breakers and industrial control equipment inside equipment racks 
Dual feed (Type 1-4)	A Single source (rectifier and batteries) with duplicate cabling and circuit breakers to supply power to the intended load.
Dual supply (Type 5)	A Dual source (rectifiers and batteries) with cabling and circuit breaker i.e. two separate rectifiers with its own batteries able to supply power to the intended load independently.

4.2 Abbreviations

Abbreviation	Description
A	Ampere
AC	Alternating Current
Ah	Ampere-hour
DC	Direct Current
e.g.	exempli gratiã, meaning "for example"
EMC	Electromagnetic compatibility
mm	millimetre
RMS	Root Mean square
V	Volt
W	Watts

4.3 Acronyms

Acronym	Description
ETS	European Telecommunication Standard
IEC	International Electro-technical Commission
ISO	International Organisation of Standards
ILAC	International Laboratory Accreditation Cooperation
LVD	Low Voltage Disconnect
MTBF	Mean time between failure
OHSACT	Occupational Health and Safety Act
PDF	Portable Document Format
PSCC	Prospective short circuit current
PDU	Power Distribution Unit
RSA	Republic of South Africa
SPD	Surge Protection device
QA	Quality Assurance
SABS	South African Bureau Standard
SANS	South African National Standard
SNMP	Simple Network Management Protocol
VRLA	Valve Regulated Lead Acid

To find Acronym expansions go to http://www.acronymfinder.com/

5. GENERAL INFORMATION

5.1 DC Rectifier and Battery System Configurations

Broadband Infraco requires different DC rectifier and battery system configurations, with different load and standby requirements as detailed in Tables 5.1. [G]

Name	AC Supply	DC Power [W]	Max DC Current [A at 48V]	Standby Time [h]	Minimum Standby Capacity [Ah]	Anticipated amount of batteries strings **	Broadband Infraco Application
Type 1	1-Phase	1296	27	10	338 (at C10 rate)	2	Single phase 3m x 3m container
Type 2*	3-Phase	2640	55	10	688 (at C10 rate)	4	3m x 3m hosting containers
2 x Type 2*		2640 x 2 = 5280	55 x 2 =110	4 (for 1 x Type 2) 10 (for 2 x Type 2)	550 (at C4 rate) per 1x Type 2 688 (at C10 rate) per 1x Type 2	4 per 1 x Type 2	3m x 6m hosting containers

Type 3	3-Phase	2640	55	10	688 (at C10 rate)	4	3m x 3m container
Type 4	3-Phase	3840	80	10	1000 (at C10 rate)	6	3m x 6m container
Type 5 (previously Type 7)	3-Phase	4800	100	2	250 (at C2 rate) per rectifier	2	PoP sites

Table 5.1: DC Rectifier and Battery System Configurations and Requirements

* Refer to paragraph 6.4.2 [G]

** The amount of batteries may vary depending on the battery capacity being offered. [G]

Throughout this specification, DC rectifier and battery systems are referred to by "Name" to distinguish between different configurations. [G]

Note: Infraco will not in all cases deploy the full complement as per above table, but the system should be provisioned to accommodate the above minimum requirement.

5.2 Key Indications

Each requirement of the technical specification carries a letter appended at the end, with the following meanings:

[G] General Information

[M] Mandatory requirement

[I] Information

[D] Description

6. SPECIFICATION

6.1 Power System

Each Power System offered should consist of at least the following minimum components: [M]

a) Incoming mains breaker and surge protection.
b) Rectifier modules.
c) Controller.
d) A low volt disconnect unit (LVD),
e) DC distribution and battery circuit breakers.
f) Alarms and potential free contacts (relays)
g) Battery compartments/cabinets for the intended batteries
h) Batteries.

The technical requirements of the total power system solution are included in the following paragraphs.

6.2 General Requirements

a) The Power Systems shall in all aspects comply with SANS 10142-1. [M]

b) The offered system should be in compliance with either SANS 1973-3 and/or SANS 1973-8 depending on the exposed PSCC value of the installation. In the scenario of the offered system need not be tested against SANS 1973, an official document from SABS or professional responsible engineer will be required indicating it as such. It is preferred that the testing against SANS 1973 /official letter from SANS or professional engineer to be available and submitted with the tender responds but will also be acceptable to finalise this aspect on reward with the successful vendor. [M]

System Type	PSCC of system (based on anticipated system installed as per paragraph 5.1 and 6.2.2)
Type 1	≤10kA
Type 2	14kA
Type 3	14kA
Type 4	20kA
Type 5	≤10kA

Table 6.1 PSCC of the various systems

6.2.1 Documentation

The following documentation will be required to be supplied:

a) Operating manual (Operation, installation and maintenance procedures) – 1 per system and 1 for head office. [M]

b) Fault finding procedures and wiring diagrams – 1 per system and 1 for head office. [M]

c) All relevant compliance certifications and test reports (including but not limited to rectifier testing, SANS compliance and battery capacity testing) [M]

6.2.2 System Failure Rate

a) The rectifier system design MTBF in operating hours should be stated. It shall be stated to which international standard the calculation was based on and shall submit the relevant calculations. [M]

b) References of other users/operators utilizing the same system/building blocks and field reports (of minimum 3 years) indicating the amount of modules supplied, amount of batteries and the achieved failure rate shall be provided with the tender submission. [M]

6.2.3 Materials and Components

a) All materials and components shall be new and shall not have been in prior service except as required during factory testing and commissioning. [M]

b) All bus bars should be copper tin-plated. [M]

6.3 Power System

6.3.1 General

a) Types 1 to 4 must be configured as single rectifier, dual feeds (A and B feeds), with the specified load spread across the A and B feeds. [M]

b) Types 5 must be configured as dual supply system (A and B feeds), with the A and B feed capable of carrying the specified load independently. [M]

c) The overall footprint of the rectifier and battery systems must be minimised as much as possible, as these systems will mostly be deployed in equipment containers where physical space is limited, or in data centre environments where space lease costs have to be considered. [M]

d) The total footprint of each rectifier and battery system must be clearly stated. [M]

e) The weight of system Types 1, 3 and 4 must be spread as not to exceed a weight loading of 1500 kg/m^2. Type 2 maximum weight loading must not exceed 3500 kg/m^2 .The total weight (kg) of each cabinet, battery rack and all its components (including all sub-racks, rectifier modules and batteries that forms part of the respective system solutions must be clearly stated individually and as well as a total maximum system weight per cabinet. All cabinets shall be level at the bottom to ensure that the weight is spread equally across the whole cabinet's base with no point loading applicable. [M]

6.3.2 Total Power Rating

a) The systems shall have a power rating to cater for the telecommunication load, battery charging and for redundancy. [M]

b) Typical configuration is as follows assuming the following building blocks (as example ONLY and different building blocks can be offered) [I]

- Battery capacity: 170Ah
- Rectifier module rating: 1800W
- Float Voltage: 54V at 25 degrees Celsius

System Type	Maximum load current (at 48V)	Battery charge current (at float voltage)*	Total DC current at 48V*	Redundant module (at 48V)*	Minimum current required at 48V*
Type 1 (single phase)	27A	34A	61A	37.5A	99A
Type 2	110A	68A	187A	37.5A	225A
Type 3	55A	68A	132A	37.5A	170A
Type 4	80A	102A	195A	37.5A	233A
Type 5 (per rectifier)	100A	34A	139A	37.5A	177A

Table 6.2: Typical power configuration – System Types 1 to 5

*Note: These values will need to be adjusted according to the actual proposed equipment offered.

It shall be indicated clearly in the statement of compliance how many batteries, rectifier modules are proposed, and how many rectifier slots are available in these systems.

6.3.3 Cabinet

6.3.3.1 Cabinet foot print and configuration

The Power System cabinets should not exceed 2200mm (H) x 600mm (W) x 600mm (D). The maximum amount of cabinets for the various systems are as follows [M]

a) Type 1: 2 cabinets
b) Type 2: 1 cabinet
c) Type 3: 2 cabinets
d) Type 4: 3 cabinets
e) Type 5: 1 cabinet per rectifier

6.3.3.2 Cabinet Frame

a) The cabinet shall be fitted with a standard 19" frame with all equipment to be installed in the 19 frame. The battery compartment/s needs not to be fitted with a 19" frame. [M]

6.3.3.3 Door or Cover

a) The rectifier cabinets (type 5) should be fitted with a lockable door/cover (not made of glass) covering the whole front side of the cabinet, which is lockable. [M]

b) The door shall be perforated to enhanced ventilation throughout the cabinet especially for the batteries and rectifier modules. [M]

6.3.4 AC Distribution

a) AC distribution should consist out an incoming AC main circuit breaker and the appropriate surge protection. [M]

b) This incoming circuit breaker shall be sized for full load system current with low AC input voltage of 230V/400V -10% i.e. (207 Volt – single phase or 360V for 3phase). [M]

c) The input termination should be capable of accepting single phase (230V nominal) for the Type 1 rectifier and three-phase (400V nominal) for Type 2 - 5. Input termination should be able to accommodate a cable size of at least 16mm^2. [M]

d) To be consistent with existing distribution boards and other installations, the offered circuit breakers shall be standard DIN rail mountable breakers and 18mm wide. [M]

e) The same circuit breaker shall be used in all cases and shall be SANS approved with a minimum Ic rating of at least 10kA for AC (230V) to ensure that the breaker can safely break the possible faults that may occur during any of the various systems. Please refer to the paragraph "Load circuit breakers" as well in par 6.3.8.2. Documented proof from a SANS accredited facility indicating compliance to SANS 60947-2/IEC 60947-2 with the applicable Ic values (for AC and DC) of the proposed breakers shall be submitted with the tender/quote responds. [M]

6.3.4.1 Surge protection

a) The surge protection shall be pre-installed and shall comply with specification as per appendix A [M]

6.3.5 Front access

a) The system with all its parameters and facilities necessary for maintenance shall be accessible from the front. [M]

6.3.6 Load Entry

a) Provision should be made for connection of the load cable to enter from the top and the bottom of the cabinet. It should be clearly labelled and indicated where to connect the load positive and [M]

negative.

b) The top lid of the cabinet should be removable for easy installation and shall be equipped with various perforated cut outs (with cable protection in form of grommets etc) or brush combs for all cabling and shall be able to accommodate all DC cables and AC cables [M]

6.3.7 Rack Earth

a) The power system shall have an earth bar or point inside the system cabinet. Surge protection, AC earth, DC output positive terminals, etc. shall be connected to this earth bar. Provision shall be made to couple earth connections at the top or bottom of the cabinet. It shall be clearly indicated where connections must be made. [M]

6.3.8 DC Distribution

6.3.8.1 Single Point of disconnect

a) All power systems shall have single point of disconnection on the DC load output as per SANS 10142-1 (excluding battery current). [M]

b) This switch disconnector/circuit breaker rating should be as follows

i. Type 1: ≥125A [M]
ii. Type 2: ≥125A
iii. Type 3: ≥125A
iv. Type 4: ≥125A
v. Type 5: ≥125A

6.3.8.2 Load circuit breaker

a) Rectifier system Types 1 to 5 must be populated with load circuit breakers as listed in Table 6.3. [M]

b) The offered circuit breakers shall be SANS approved and have a minimum Ic rating of 15kA (in some cases 20kA) for DC to ensure that the breaker can safely break the possible faults that may occur. [M]

c) All circuit breakers (AC and DC) for all the systems shall be from the same manufacturer and from the same range. [M]

d) All circuit breaker should be capable of accepting 35mm² of cables. [M]

Name	Feed A		Feed B		Ic at 48V DC*
Type 1	2 x 63 A	1 x 18mm CB blank	2 x 63 A	1 x 18mm CB blank	15kA
Type 2	2 x 63 A	1 x 18mm CB blank	2 x 63 A	1 x 18mm CB blank	15kA
Type 3	2 x 63 A	1 x 18mm CB blank	2 x 63 A	1 x 18mm CB blank	15kA
Type 4	2 x 63 A	1 x 18mm CB blank	2 x 63 A	1 x 18mm CB blank	20kA
Type 5	2 x 63 A	6 x 18mm CB blank	2 x 63 A	6 x 18mm CB blank	15kA
	4 x 40 A		4 x 40 A		
	1 x 25 A		1 x 25 A		

Table 6.3: Load Circuit Breaker Ratings – System Types 1 to 5

Note: All the switches, breakers and switch disconnectors shall be protected from accidental switching by means of a transparent removable cover. [M]

*Note: All circuit breakers shall have a minimum interrupting current (Ic) as per above table based on a maximum short circuit current of each battery of 4000A as per this specification. The PSCC value is based on the anticipated amount of batteries (each battery short circuit current of 4000A and 1.5 metre 16mm ² cable per battery) as per table 5.1. [I]

6.3.8.3 Battery Circuit Breakers

a) There shall be battery circuit breakers for each individual installed battery. These circuit breakers shall be rated for a nominal current of 63-Ampere and be of the same model and range as the DC load circuit breaker indicated in paragraph 6.3.8.2. [M]

b) The battery cables between the battery breaker and the battery itself shall be pre-installed and shall be minimum 16mm² (based on 63A circuit breaker) to ensure that the cable is protected by the battery circuit breaker [M]

6.3.9 Low Volt Disconnect (LVD)

a) Operation

This module shall disconnect the battery from the negative conductor when the voltage of the battery falls to the default value 1.8VPC Volt (43.2V), and reconnect when the system returns to normal operation (battery voltage ≥48V). The LVD shall be of a failsafe type and it shall be possible to remove, replace or reset the controller without the LVD disconnecting. [M]

i. The LVD should be able to withstand the prospective fault current rating of the installed batteries [M]

b) Control

Disconnect - and reconnect voltages shall be software controllable and settable. [M]

6.4 Power rating and rectifier module

6.4.1 Rectifier module

a) The rectifier modules shall be modular and be able to work in parallel with other modules of the same type and rating [M]

b) All modular rectifier modules shall be of the exact same type and shall have the exact same rating and physical size and shall be installed in a 19" frame. [M]

c) The same module shall be used in all the offered systems. [M]

d) Based on the load configuration and limited AC supply to these installations, Rectifier module should have a power rating of ≤ 2000Watts (42A at 48V). Refer to paragraph 6.4.2 as well. [M]

6.4.2 Required amount of rectifier modules

a) Rectifier system Types 1 to 5 must be able to provide the DC load power and DC load currents as specified in Table 5:1 .Total Power requirements. Please note that System 2 will be used in some cases as dual supply system (2 x Type 2) and thus each system (1 x Type 2) shall be rated and capable of supplying 2 x 55A=110A. [M]

b) In all cases all rectifier shall be equipped with a minimum of three rectifier modules. (Two modules for the required load and battery charging and one additional module for redundancy). [M]

c) Each system (Type 2 to 5) shall be equipped with multiple of 3 rectifier modules to ensure that the AC current is equally shared over the three phases. [M]

d) AC supply to various installations are limited and the maximum allowed AC current per rectifier (based on system fully populated with all rectifier modules drawing the maximum amount of current) on Type 2 – 5 should not exceed the following value (based on the installed AC supplied circuit breaker) . [M]

i. 25A per phase at 207V (230V-10%) for all three phases.

6.4.3 Output Power Limiting

a) The rectifier modules should be designed with a constant power and current limiting feature. [M]

6.4.4 AC Input Voltage Variation

a) The rectifier modules shall be able to deliver the rated output voltage and current with the following input voltage variations exist: Single phase: 230 Volt ± 10% (207V – 253V) as per SANS 10142-1. [M]

6.4.5 AC Input Frequency Variation

a) The rectifier modules shall be able to deliver the rated output voltage and current if the following input frequency variations exist: 50Hz ± 5% (47,5Hz – 52,5Hz). [M]

6.4.6 Harmonic Distortion

a) The THD (Total harmonic distortion) of the rectifier modules shall not be more than 5% [M]

6.4.7 Soft Starting Facility

a) The rectifier modules shall be designed with soft start functionality. The inrush current shall be less or equal to the normal peak current at full load. [M]

6.4.8 Rectifier modules Conversion Efficiency

a) The rectifier modules shall not have a conversion efficiency of less than 92% for loads between 50-100% of the rated output power. However preference may be for higher efficient modules of 94% for load between 30-100% [M]

6.4.9 Power Factor Requirements

a) The rectifier modules should have a power factor of not less than 0.99 for loads between 50-100% of the rated output power. [M]

6.4.10 Current Sharing

a) The rectifier modules when operating in parallel shall share the current efficiently (better than 10% variance) to ensure the AC is shared between the various phases. [M]

6.4.11 Stand Alone/Parallel Operation upon controller Failure/Removal

a) In case of the rectifier modules operating without a controller or when the controller fails, the rectifier modules shall operate in a "default mode". By "default mode" is meant that the rectifier modules [M]

shall have a set of hardware default values for standalone or parallel operation.

6.4.12 Protection

a) The rectifier modules shall have a minimum IP rating of 20 according to SABS 529. [M]

6.4.13 Battery Temperature Compensation

a) Battery float voltage shall be adjusted accordingly to the temperature under which the batteries are installed. Thus appropriate temperature sensors for measuring the ambient and the battery temperature shall be supplied default with each system to enable battery temperature compensation function. Temperature compensation should be adjustable from the controller. [M]

6.4.14 Rectifier modules Protection

a) The power system and rectifier modules and shall in all aspects be able to withstand the circumstances, without any damages, where a phase conductor or the neutral conductor experience loss (or a low- or high voltages) or where a short circuit or fault occur on the DC side, or falls outside the systems normal operating condition for a duration of time. The system shall return to normal after the fault has cleared. [M]

b) The rectifier modules should be equipped with fuses, circuit breaker or electronic protection circuit to protect the input and output of the rectifier modules. [M]

c) The protection device on the input should only operate when an internal rectifier modules fault occurs. [M]

d) On the DC output side, a protection device should protect the output of the rectifier modules against destructive voltages and current originating from the load. Internal over voltage protection in the rectifier modules shall not shut down any rectifier modules when system is in equalise/boost charge cycle. In the case a rectifier modules experience over voltage condition it shall restart automatically when the over voltage has cleared [M]

e) Rectifier modules should be internally protected against abnormal high ambient temperature or operation in an environment where air flow is restricted which results in an increased in temperature. Automatic current limitation or shutdown should be provided in these cases. The rectifier modules should be automatically recovered when the over temperature has cleared [M]

6.4.15 Rectifier modules Alarms

a) The manufacturer should provide indicative rectifier modules conditions, simplifying fault diagnostics as far as possible, where the rectifier modules behaves in a manner less than ideal. There should be at least the following two indications on the rectifier module self. [M]

1. AC present
2. Module failure/malfunctioning

6.4.16 Power Density

a) The bidder should state the power density, in W/cm³ (or W/inch³), of the rectifier modules. Preference is for a power density of more than 1.22W/cm^3 (or 20W/inch³) for the rectifier modules [M]

6.4.17 Rectifier modules Connection

a) All rectifier modules shall be back "hot" pluggable. The rectifier module and control function shall be designed in such a way that upon live connection, no arcing shall take place and shall fall in normal operating conditions. [M]

6.4.18 Rectifier modules set-up and Parameter Adjustment

a) All rectifier modules parameters should be software adjustable from the controller. Upon set-up, initialisation and commissioning the controller should download all parameters to the rectifier modules and then store it locally on the rectifier modules. These values should be valid when the [M]

controller is removed or fails.

6.4.19 Power System Operating Temperature

a) The power system should be designed to operate in temperature range up to 70°C. [M]

b) In the temperature of above 45°C it will be acceptable for output performance to be slightly derated. [M]

6.4.20 EMC

a) The rectifier modules shall comply with the EMC requirements stated in EN 300 386-2 and or carry the equivalent's CE mark. A compliance certificate and or proof shall be provided. [M]

6.4.21 Noise levels

a) The following maximum noise levels will be allowed. [M]

b) Ripple: ≤ 10mV RMS unweighted

c) Voice band: ≤ 2mV RMS psophometric

d) Wide band: ≤ 10mV RMS unweighted

e) Peak to Peak value ≤ 200mV peak to peak unweighted

6.4.22 Safety

a) The rectifier modules shall in all aspects comply with SABS IEC 60950 or equivalent international version of it. The vendor shall provide proof of compliance to this specification and shall submit it with the bid. [M]

6.5 Controller

a) The same controller shall be used on all systems. [M]

6.5.1 Width

a) Controller together with the proposed rectifier modules should fit in a standard 19" rack [M]

6.5.2 Output Voltage settings and control

6.5.2.1 Float voltage

a) The nominal DC output voltage of the power system shall be -48 Volts and the default (factory pre-set) float voltage shall be set at the battery manufacturers recommended voltage. It shall be possible to adjust the output float voltage between –53 and –55 Volt by the controller. [M]

6.5.2.2 Boost/Equalise charge

a) The rectifier modules should be able to equalise/boost charge the batteries based on time interval or in the event of a significant discharge on the batteries by increasing the output voltage automatically for a specific time and then return back to normal float condition. It shall be possible to adjust the output equalise/boost voltage between –53 and –57 Volt. This function shall be default deactivated and shall be able to be activated/disabled at any point of time. [M]

6.5.3 LVD control

a) The LVD module operation and status shall be software controllable. [M]

6.5.4 Sleep mode function on rectifier modules

a) The controller should be able to put modules in a hot standby mode (sleep mode) during the operation of the system if the load on the power system is low to increase the reliability (and in some cases the efficiency) of the systems. [M]

b) The settings and or control should be user selectable to activate/ deactivate the sleep mode function and the conditions when modules to be switch on or off. [M]

6.5.5 Battery Temperature Compensation

a) The battery temperature compensation slope should have a set-able range in mV/°C/cell. The default value should be the recommended float voltage of the battery 54V at 25°C with a slope range set at -3 mV/°C/cell (or as per battery manufacturer recommendation) between a temperature range of 10-40°C. [M]

b) It should be possible to disable this function. [M]

c) If the temperature probe fails then the controller should report an alarm and return the rectifier modules to the nominal setting at 25 degrees Celsius. [M]

6.5.6 Alarm outputs

a) The manufacturer should provide comprehensive and indicative alarms simplifying fault diagnostics on the system (rectifier modules, AC input, etc.) as far as possible where the system behaves in a manner less than ideal. These alarms should be software adjustable (on the controller). [M]

b) It should be possible to change or swap the alarms as Broadband Infraco see fit. [M]

c) A complete list of alarm names, their setting range and parameters should be provided [M]

d) The following minimum alarms should be provided and extended via separate relay (potential free) contacts: [M]

Table 6.4: Alarm configuration

Name	Condition	Indication	Potential free contact (relay)
1. Output voltage high	Output voltage > -55 Volt	Alarm indication	Extended to relay
2. Output voltage low	Output voltage < -47 Volt	Alarm indication	Extended to relay
3. LVD active	Output voltage < -43.2 Volt	Alarm indication	Extended to relay
4. AC supply fail	Loss of mains voltage on one or more phases	Alarm indication	Extended to relay
5. Rectifier modules fail	Rectifier modules output voltage out of limits	Alarm indication	Multiple module failure – Extended to relay
6. Controller System fail	Controller or system failure	Alarm indication	Extended to relay
7. Battery	Battery integrity compromised	Alarm indication	Extended to relay
8. MOV failure	Surge suppression failed on any of the phases	Alarm indication	Extended to relay

6.5.7 Battery Current Limitation

a) The following feature should be standard with the controller: Battery current limitation. [M]

b) This facility limits the charging current to the battery (ies). The amount of charging current should be software definable. [M]

c) The default value should be set at 10% of the total installed capacity of the battery. [M]

6.5.8 AC Input Monitoring

a) The input voltage should be monitored and should be displayed on the software and controller. [M]

b) The input current monitoring is optional but it is preferred [I]

6.5.9 Logging function

a) The controller shall log and store events (including clearing of events) and all data logs (i.e. including but not limited to alarms, general operating conditions (AC and DC voltage and currents (load and battery conditions) in a software file on a non-volatile memory. All logs should include the time, date and condition of event and data. Recording of data logs (settings and logging interval) should be user definable. [M]

b) The controller should be able to store at least 1000 events and 5000 data logs before the memory is full. [M]

c) The controller should automatically delete the oldest data from the log file in the case of more than the maximum amount of events are logged on the controller. [M]

6.5.10 Password and Username Protection

a) All set-able parameters on the power system should be password and username protected:

i. All parameters viewable but not adjustable. – No password [M]

ii. Main system parameters - All parameters viewable and adjustable - Password protected. [M]

6.5.11 Controller Powering Requirements

a) The controller should be powered from the rectifier modules and Battery DC bus. Power to the controller should not be lost or interrupted when the LVD has opened. [M]

6.5.12 Controller display and interface

a) Backlit LCD readouts should be provided on controller. [M]

b) Comprehensive system settings and current conditions including the following: [M]

AC conditions, rectifier modules, LVDs, battery, temperature and alarm information, settings and information should be available on controller. It should be possible to manually scroll through menu's to view parameter settings.

c) All information including the DC voltages and currents to the load and batteries shall be measured and available on the controller. The voltage meter should have a resolution of at least 0,1 Volt and the ammeter a resolution of at least 1 ampere. [M]

[M]

d) The voltage meters should have an accuracy of 0,5% or better with the current measurement better than 1%

6.5.13 Construction

a) It shall be possible to remove the controller from the front of the rack. [M]

b) The controller should be constructed of replaceable sub-assemblies and should be interchangeable. The controller shall be back "hot" pluggable and it shall be possible to plug a controller into a live system without creating DC output disturbance outside the operating condition as per this specification. [M]

6.5.14 Communication

a) Rectifier system Types 1 to 5 must have the following communication interfaces to facilitate system interrogation: [M]

i. USB or RS-232 for local system configuration and management [M]

ii. 10BaseT Ethernet for remote system configuration and alarm management [M]

iii. RS232 as back-up for remote system configuration and monitoring [M]

b) The supervisory modules of rectifier system Types 1 to 5 must be able to support Simple Network Management Protocol (SNMP). [M]

6.5.15 Software

a) Rectifier and battery systems Type 1 to 5 must have client PC software that can be used to configure system settings through a local communication interface as specified in 6.5.14. [M]

b) Rectifier and battery systems Type 1 to 5 must have software that can be used for configuration and monitoring of systems from Broadband Infraco's Network Operations Centre (NOC) through one or a combination of remote communication interfaces as specified in 6.5.14. [M]

6.6 Battery Management

a) The Power System should have battery monitoring system and included in all systems supplied with preference that the battery management system be housed within the controller enclosure. [M]

b) The battery monitoring should be an effective system which will determine if a battery string (or certain blocks) is "out of step" like capacity loss or shorted cells by comparing voltages and/or current of individual battery blocks or multiple blocks in one string with other batteries (in same string and/or other strings) under float charge conditions and/or under discharge condition. [M]

c) It should be possible to monitor up to 4 (and for Type 4: 6) different strings (nominal 48 Volt with each string consisting out of 4x12V block). [M]

d) It should be possible to initiate a discharge test by triggering the rectifier modules in the system into a "battery discharge test" mode. In this mode the rectifier modules float voltage is set to a lower value which ensures that the battery (ies) are carrying the load. During the test the rectifier modules will prevent (under all circumstances) the voltage falling below the LVD setting. After the "battery discharge test" is stopped/completed the system should revert to the state it was before the test. The "battery discharge test" should not interrupt service to the load in any way. [M]

e) It should be possible to observe the battery status [M]

f) The manufacturer should provide indicative battery alarms simplifying fault diagnostics where the battery behaves in a manner less than ideal. The alarms and thresholds should be software based. [M]

g) The battery monitor should be capable of continuously monitoring, testing, and recording the parameters of the battery's performance. The following parameters should be available: [M]

i. Battery alarm status. (including high-, low voltage, battery temperature)

ii. Identification of battery string alarmed.

iii. Measured values (voltages, currents and temperatures)

iv. Set points.

v. Estimated remaining backup time during a discharge event

vi. Battery parameters monitored should include string or series connected battery block voltages, battery string currents and ambient and pilot cell temperatures.

h) The battery monitor system should have built in protection against fault conditions introduced at the DC power source. [M]

6.7 Batteries

6.7.1 Battery Types

a) System Types 1 to 5 shall make use of 12V valve regulated lead acid (VRLA), 19"/21" front terminal batteries. [M]

b) The same battery shall be used in all systems. [M]

c) Each battery shall have a maximum short circuit current as per SANS IEC 60896-21/22 of 4000A to ensure that the onsite distribution boards will remain below 10kA value to limit the legal requirements for DB boards. [M]

d) The battery string shall be designed for a float voltage of 53.5 – 54.5 Volts (per nominal 48-Volt string) or 2.23 - 2.27 volts per cell @ 25°C and shall be able to be fully charged under normal float voltage within the recharge period of 72 hours. [M]

e) All batteries will be charged at the temperature compensated mentioned float voltage throughout the batteries' life. Batteries which require at regular intervals boost charge to maintain the capacity of the batteries shall not be accepted. [M]

f) All batteries shall have a minimum design life according to the Eurobat guide or any other equivalent guide or standard as a "Long Life" batteries i.e 12 years or more at 20 degrees Celsius. [M]

g) Battery blocks of an AGM (Absorbent Glass Mat) technology are preferred. [M]

6.7.2 Batteries sizing

a) System Types 1 to 5 should make use of multiple 48V 160-200 Ah batteries strings. [M]

b) In all cases, rectifier systems shall be equipped with at least 2 battery strings per rectifier. [M]

c) Each 12V battery block shall have the following maximum physical dimension to ensure the batteries can also be used in already deployed containers and cabinets [M]

- Height of 320mm (height) x 126mm (width) x 565mm (depth).

d) Batteries of system Types 1 to 5 must provide a standby time and capacity as specified in Table 5.1 (Standby Time and Minimum Standby Capacity). Please note a 25% ageing factor shall be included in the batteries (already included in Minimum Standby Capacity as per Table 5.1). Type 2 batteries shall be rated for 10 hours based on 55A load per system and minimum 4 hours at 110A. [M]

e) All battery capacities shall be rated at the cut off voltage of 1.8VPC (or higher) at a temperature reference of 25 degrees Celsius. [M]

f) Batteries of system Types 1 to 4 must be deployed on appropriate battery racks, bearing in mind the weight loading limitation, with the rectifier system positioned on top of one of the battery racks. [M]

g) Rectifier and batteries of system Types 5 must be deployed in single cabinet configurations for the A and B feeds respectively, with the cabinets capable of enclosing all batteries completely. The [M]

maximum cabinet dimensions should be considered in all cases.

6.7.3 Battery Performance

a) Batteries shall be tested to SANS IEC 60896-21/22 and the relevant test report/certificate shall be submitted with tender responds against Broadband Infraco requirements. Refer to appendix D [M]

b) It is recommended that the following tests as per SANS IEC 60896-21/22 have been verified or being tested by an independent or accredited test house: Valve Operation as par 6.8, Float service with daily discharge as per par 6.13 and impact of stress temperature of 55 or 60 degrees Celsius as per par 6.16. Certification and such proof, where available, shall be submitted with the tender responds. [M]

6.7.4 Battery quality testing

a) Supplier shall conduct a battery capacity test on all batteries before delivery will take place and proof of the results shall be provided, which shall be attached to each string supplied. [M]

b) The initial acceptance of batteries will depend on the following criteria: All batteries capacity should achieve 100% of the manufacturer's stated capacity i.e all blocks individually should give the required capacity to a cut off voltage of 1.8VPC at 25 degrees Celsius. [M]

6.7.5 Battery age

a) The supplier shall guarantee that the date of manufacture, indicated on the cells, will not be more than one 180 days earlier than the date of the order. [M]

6.8 Drawings and brochures

a) Broadband Infraco shall be provided with a full set of brochures of the circuit breakers, rectifiers, rectifier controller, battery management, surge protection and batteries offered and or proposed by the bidder indicating the detail specification of the various products offered. [M]

b) Broadband Infraco shall be provided with a full set of rectifier and battery system/engineering layout drawings for all proposed solutions. [M]

c) Drawings must be supplied in both of the following formats:

i. Hard copy, A4 paper size [M]

ii. Electronic copy, in Portable Document Format (PDF) and / or compatible with Microsoft Visio Viewer. [M]

6.9 Quality Assurance

a) The premises, facilities, procedures and Quality Assurance programmes of local manufacturers may be inspected and approved by Broadband Infraco prior to the commencement of local manufacture. [M]

b) All equipment (and drawings) must be approved by Broadband Infraco before any final manufacturing and or delivery should take place. [M]

c) A sample rectifier and battery system could be called for and inspected by Broadband Infraco during the tender evaluation process. [M]

6.10 Installation of rectifier and batteries on behalf of Broadband Infraco

It shall be expected from the supplier of the rectifier and batteries to supply, deliver and install the equipment in a relevant container and or datacentre on behalf of Broadband Infraco.

6.10.1 Installation of new power system on site where existing power and systems needs to be replaced, the supplier:

a) Shall supply, transport and install the new rectifier and batteries [M]
b) The installer shall replace the old rectifier and batteries with the new rectifier and battery system during a "live" cut-over without disconnecting any circuit or power. [M]
c) Shall recover the old rectifier equipment and dispose of the old batteries as per this specification. [M]
d) Shall issue the relevant certificate of compliance and test report as per SANS 10142-1 [M]

6.10.2 Installation of new power system (a new site), the supplier:

a) Shall supply, transport and install the new rectifier and batteries either to indicated site or factory of the container manufacturer. [M]
b) Shall supply and install the relevant DC cabling (SANS 1574-3) between the rectifier and all DB boards. [M]
c) Shall issue the relevant certificate of compliance and test report as per SANS 10142-1 [M]
d) Shall give relevant instructions/training regarding storage, transport and work on system to container manufacturer to ensure that all certificates, test reports and warrantees on supplied equipment will not be compromised, when container is given to Broadband Infraco at site. [M]

6.11 RECOVERY, REMOVAL AND DISPOSAL OF REDUNDANT BATTERIES

a) The supplier of the rectifiers and batteries shall be responsible for recovery and disposal of the redundant batteries being recovered from various sites after new batteries have been installed. [M]
b) The supplier shall indicate the relevant process which will be implemented for disposing of the redundant batteries, complying with all the applicable legislation and OHSACT requirements. [M]
c) The supplier shall forward a compliance certificate either from an accredited disposal / recycle facility or from their own facility that complies with the legal requirements governing the disposal of redundant batteries/lead. [M]
d) The supplier shall issue Broadband Infraco with a certificate indicating the actual amount of batteries/weight have been disposed of by the relevant disposal/recycle facility. [M]

6.12 Warrantee

a) In the event of any of the following items/components becoming defective, the supplier shall replace such defective item, free of charge, up to three years from the date of installation:
   i. Battery cell or block [M]
   ii. Rectifier module [M]
   iii. Controller [M]

7. APPENDICES

Selected schedule(s) are found in the appendices and forms part of this specification.

7.1 Appendix A: Maintenance Processes

Suppliers are required to respond to all questions in this schedule.

Broadband Infraco will make use of the information provided during its price evaluation process to assess the complete lifecycle cost of the proposed rectifier and battery systems, as well as the potential impact on the total cost of ownership of the equipment.

7.2 Appendix B: Support Processes

Suppliers are required to respond to all questions in this schedule.

Broadband Infraco will make use of the information provided during its technical evaluation process to assess whether a supplier's support processes will be able to effectively support Broadband Infraco's requirements.

7.3 Appendix C: Surge protection requirements

Suppliers are required to comply with this schedule which indicates the minimum requirements of the surge protection. Refer to Appendix E for indicating compliance to this schedule.

7.4 Appendix D: Battery requirements as per SANS IEC 60896 21/22

Suppliers are required to complete the second part of this schedule. This schedule consists out of two parts. The first part is indicating Broadband Infraco battery requirements and the second sheet is the manufacturer responds (actual tested data) to Broadband Infraco requirements and all fields shall be filled in. In cases with no test been done, the wording "Not tested" should be filled in.

7.5 Appendix E: Schedule of Compliance / Non-compliance / Information

Suppliers are required to complete this schedule and must take note of the following:

1. A detailed statement of compliance or non-compliance, accompanied by reasons (if any) for every requirement called for in the specification, must be submitted. The detailed statements must be in the format as provided in Schedule A. Where needed, further notes may also be appended to the schedule.

2. It must be clearly stated whether the equipment offered, for each of the specified requirements, is:
   - **Fully Compliant**, or
   - **Non-compliant**

3. Phrases such as "**noted**" must only be used against paragraphs that are for information only and carry no contractual commitment.

4. Phrases such as "**noting**", "**will comply**" and "**comply, except**", in a paragraph that requires a compliance or non-compliance statement will be read as non-compliance.
5. The letter appended at the end of each paragraph in the specification requires the following type of response:

[G] General Information – note paragraph

[M] Mandatory requirement – a statement of compliance, non-compliance or a degree of compliance

[I] Information – gives actual values, quantities or other specific details called for

[D] Description – gives a description of the function of the feature as requested

END

APPENDIX A: MAINTENANCE PROCESSES

1. What routine maintenance procedures are required for the rectifier and battery components of the proposed system solutions:
    a. How often is routine maintenance required?
    b. Explain what tasks should typically be performed during routine maintenance and what tools and or training will be expected of such personnel?
2. Provide a life cycle costing model/analysis taking into account all factors/relevant assumptions predicting the life expectancy of the supplied solution for the rectifiers and batteries individually operating under normal circumstance. Normal circumstance is regarded as 1 cycle per month with a depth of discharge of 20% at average ambient temperature of 22 degrees Celsius. A predicted total cost to company including all aspects over a 15 year life cycle is to be calculated and supplied.
3. The supplied shall give a technology life cycle positioning of the equipment offered which shall include but not limited to the following:

a. When was the offered equipment first introduced into the commercial market,
b. When was the last upgrade and when is the next planned upgrade.
c. What is the life expectancy of the offered equipment before equipment will become
    i. Obsolescent and
    ii. Obsolete

APPENDIX B: SUPPORT PROCESSES

1. Support services
    a. Do you offer support services beyond the sale of equipment?
    b. If so, how are such support services provided inside and outside the equipment warrantee period?
    c. If support services are offered, are there additional cost implications?
    d. If there are additional cost implications, kindly provide a detailed breakdown of these costs?

2. How will Level 2 and Level 3 support queries be handled? Please describe the process that would be followed for each support level. As part of the process descriptions, kindly make reference to the following aspects:
    - Who will be responsible for handling Level 2 and Level 3 support queries
    - Access to Level 3 support engineers
    - Availability of local subject-matter experts

3. Repair of faulty equipment
    a. How will in-warranty and out-of-warranty repairs be handled? What is the process to be followed for each and what turnaround times can be expected?
    b. Will spares be kept inside the country?
    c. Will repairs be done inside the country?
    d. Will modules / equipment / batteries be readily available for swop-out during failures?

4. Training
    a. What training is offered on purchase, and what is offered on an ongoing basis?
    b. Will training be conducted inside the country or outside of the country?
    c. What training is offered / required in terms of continuous certification of staff and contractors?
    d. Is an online help / training facility available?
    e. Is a "train the trainer" concept supported whereby experts are created locally?

5. If applicable, please describe how firmware / software upgrades are handled, including licensing issues, etc?

APPENDIX C: SURGE PROTECTION SPECIFICATION

7.6 Technical

a. All SPDs shall comply with the requirements of SABS IEC 61643-1 and shall have been tested as class II devices. [M]

b. Class II SPD shall comply with the following levels installed between the phases and Neutral [M]

Class II SPD's		
Nominal Discharge Current	In	≥ 20kA (8/20) (minimum)
Peak Surge Current	Isn	≥ 40kA (8/20) (minimum)
Voltage protection level	Up	≤ 1.5 kV (maximum)

Appendix C 1: Class II SPD specification

c. In conjunction with the above class II SPD the following Class II surge protection device (gap type arrestor) installed between the Neutral and earth [M]

Class II SPD's		
NOMINAL DISCHARGE CURRENT	In	≥ 40kA (8/20)

Appendix C 1: Class II Spark Gap

d. The Maximum operating voltage (Uc) of the SPD unit shall be between 255V and 300V. [M]

e. The SPD shall be equipped with a mechanical disconnection mechanism and shall have a visual indicator showing the end of life of the unit (SANS 10142-1). The gapped type surge arrestor does not require visual indication [M]

i. Indication: Indication shall be of the mechanical type (flagging). [M]

f. The SPD units shall be equipped with remote signalling via a potential free relay contact to indicate that the disconnection mechanism has been activated. [M]

g. The SPD units shall be modular and should be possible to replace faulty surge modules just be pulling it out of service rather than disconnecting installed cables and using tools. [M]

h. The SPD shall be DIN Rail mountable. [M]

APPENDIX D: BATTERY REQUIREMENTS AS PER SANS IEC 60896 21/22

User statement of requirements

1) Application description information	
Application summary	Telecommunication
Load (in A or W) and autonomy time profile (s)	As per paragraph 5.1
Minimum and maximum system float voltage	Max voltage: 57V and min Voltage: 43.2V
Maximum of boost charge system voltage available Y/N If yes what value?	N/A
Expected minimum and maximum operating temperatures and their duration per year	Min temp of 10 degrees with maximum degrees of 45 degrees
Any other relevant information or operational requirements such as duration and frequency of power outages, of diagnostic discharges and of energy cost saving actions	

2) Product specification information						
Product safe operation in service	**Compliance information mandatory**					
6.1 Gas emission (at the float voltage and at 2,40 VPC)	Maximum allowed gassing are as follows: Ge at Float: 0.043ml/cell/h/Ah and Ge at 2.4VPC: 0.43ml/cell/h/Ah					
6.2 High current tolerance	Pass					
6.3 Short circuit and DC internal resistance	Maximum allowed short circuit current: 4000A					
6.4 Internal ignition from external spark sources	Pass					
6.5 Protection against ground short propensity	Pass					
6.6 Content and durability of required markings	Pass					
6.7 Material identification	Pass					
6.8 Valve operation	Pass					
6.9 Flammability rating of materials	VO - rating					
6.10 Intercell connector performance	Maximum allowed temperature is 70°C					
Product performance in service	**Compliance information mandatory**					
6.11 Discharge capacity	Data for	C_{10}	C_8	C_3	C	$C_{0.25}$
6.12 Charge retention during storage	Pass					
6.13 Float service with daily discharges	Minimum requirement: Unreliable mains failure (Preference is for: Very unreliable mains failure)					
6.14 Recharge behaviour	Pass					
Product durability in service	**Compliance information mandatory**					
6.16 Impact of stress temperature of 55 ^{0}C or 60 ^{0}C	Minimum requirement: Long duration exposure time (Preference is for: Very long duration exposure time)					

6.17 Abusive over-discharge	Poor mains supply with E.o.d voltage control
6.18 Thermal runaway sensitivity	Pass
6.20 Dimensional stability at elevated internal pressure and temperature	Pass
6.21 Stability against mechanical abuse of units during installation	Pass

Supplier statement of test results

1) General product type information					
Product manufacturer					
Manufacturing site of tested product					
Product name					
Product model range					
Product comprising the above model range					
Product tested					
2) Product test performance information					
Product performance in service	**SANS IEC 60896-21 test clause result**				
6.1 Gas emission (at the float voltage and at 2,40 Vpc)					
6.2 High current tolerance					
6.3 Short circuit and d.c. internal resistance					
6.4 Internal ignition from external spark sources					
6.5 Protection against ground short propensity					
6.6 Content and durability of required markings					
6.7 Material identification	Case		Cover		
6.8 Valve operation	Before		After		
6.9 Flammability rating of materials	Case		Cover		
6.10 Intercell connector performance					
Product performance in service	**SANS IEC 60896-21 test clause result**				
6.11 Discharge capacity	C_{10}	C_8	C_3	C	$C_{0.25}$
6.12 Charge retention during storage					
6.13 Float service with daily discharges	Cycles		C_{af}		C_{ab}
6.14 Recharge behaviour	24 h		168 h		
Product durability in service	**SANS IEC 60896-21 test clause result**				
6.15 Float service life at 40 ^{0}C	Days with C_3 rate test at 40 ^{0}C				
6.16 Impact of stress temperature of 55 ^{0}C or 60 ^{0}C	Days with C_3 rate test at 55 ^{0}C or 60 ^{0}C Days with $C_{0.25}$ rate test at 55 ^{0}C or 60 ^{0}C				

6.17 Abusive over-discharge		
6.18 Thermal runaway sensitivity		
6.20 Dimensional stability at elevated internal pressure and temperature		
6.21 Stability against mechanical abuse of units during installation		
Company name: Company officer: Address/phone/fax/e-mail: Signature/date/place: Document established as reply of RFI:		

APPENDIX E: SCHEDULE OF COMPLIANCE / NON-COMPLIANCE / INFORMATION

General Requirements			
Specification	**Key**	**Fully Compliant / Non-compliant / Noted**	**Comments (if applicable)**
5.1	G		
5.2	G		

Specification			
Specification	**Key**	**Fully Compliant / Non-compliant / Noted**	**Comments (if applicable)**
6.1.a	M		
6.1.b	M		
6.1.c	M		
6.1.d	M		
6.1.e	M		
6.1.f	M		
6.1.g	M		
6.1.h	M		
6.2. General Requirements			
6.2.a	M		
6.2.b	M		
Table 6.1 PSCC of the various systems	M		
Type 1	M		
Type 2	M		
Type 3	M		
Type 4	M		
Type 5	M		
6.2.1 Documentation	M		
6.2.1.a	M		
6.2.1.b	M		
6.2.1.c	M		
6.2.2. System Failure Rate	M		
6.2.2.a	M		
6.2.2.b	M		
6.2.3 Materials and	M		

Components			
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7.1 Appendix A: Maintenance Processes

7.2 Appendix B: Support Processes

7.3 Appendix C: Surge protection requirements

Technical			
Specification	**Key**	**Fully Compliant / Non-compliant / Noted**	**Comments (if applicable)**
7.6.a.	M		
7.6.b.	M		
Nominal Discharge current (≥ 20kA)	M		
Peak Surge Current (≥ 40kA)	M		
Voltage Protection level (≤1.5kV)	M		
7.6.c.	M		
Nominal discharge current (≥ 40kA)	M		
7.6.d.	M		
7.6.e.	M		
7.6.e.i	M		
7.6.f.	M		
7.6.g.	M		
7.6.h	M		

7.3 Appendix D: Supplier statement of test results

1) General product type information					
Product manufacturer					
Manufacturing site of tested product					
Product name					
Product model range					
Product comprising the above model range					
Product tested					
2) Product test performance information					
Product performance in service	**SANS IEC 60896-21 test clause result**				
6.1 Gas emission (at the float voltage and at 2,40 Vpc)					
6.2 High current tolerance					
6.3 Short circuit and d.c. internal resistance					
6.4 Internal ignition from external spark sources					
6.5 Protection against ground short propensity					
6.6 Content and durability of required markings					
6.7 Material identification	Case			Cover	
6.8 Valve operation	Before			After	
6.9 Flammability rating of materials	Case			Cover	
6.10 Intercell connector performance					
Product performance in service	**SANS IEC 60896-21 test clause result**				
6.11 Discharge capacity	C_{10}	C_8	C_3	C	$C_{0.25}$
6.12 Charge retention during storage					
6.13 Float service with daily discharges	Cycles		C_{af}		C_{ab}
6.14 Recharge behaviour	24 h			168 h	
Product durability in service	**SANS IEC 60896-21 test clause result**				
6.15 Float service life at 40 ^{0}C	Days with C_3 rate test at 40 ^{0}C				
6.16 Impact of stress temperature of 55 ^{0}C or 60 ^{0}C	Days with C_3 rate test at 55 ^{0}C or 60 ^{0}C Days with $C_{0.25}$ rate test at 55 ^{0}C or 60 ^{0}C				
6.17 Abusive over-discharge					
6.18 Thermal runaway sensitivity					
6.20 Dimensional stability at elevated internal pressure and temperature					
6.22 Stability against mechanical abuse of units during installation					
Company name: Company officer:					

Address/phone/fax/e-mail:
Signature/date/place:
Document established as reply of RFI: