

 Eskom	Report	Technology
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Title: **TRANSMISSION ONCE OFF PURCHASE OF CONVERTERS AND INVERTERS TENDER TECHNICAL EVALUATION CRITERIA**

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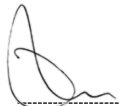
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Content

	Page
1. Introduction	4
2. Supporting clauses	4
2.1 Scope	4
2.1.1 Purpose	4
2.1.2 Applicability	4
2.2 Normative/informative references	4
2.2.1 Normative	4
2.2.2 Informative	4
2.3 Definitions	4
2.3.1 General	4
2.3.2 Disclosure classification	5
2.4 Abbreviations	5
2.5 Roles and responsibilities	5
2.6 Process for monitoring	5
2.7 Related/supporting documents	5
3. Tender Technical Evaluation Criteria	5
3.1 Mandatory Requirements Evaluation	5
3.2 Technical Qualitative Requirements Evaluation	6
3.3 Factory Evaluation	8
3.4 Deemed Offer Risk Evaluation	9
4. OEM Agent Agreement Clarification/Requirements for Contract award only	9
5. Tender Deliverables	9
6. Type Testing	9
7. Drawings, Manuals, and Training	10
8. Life Cycle Costing	10
8.1.1 Total Cost of Ownership	1044
8.1.2 Reliability Costs	11
9. Mandatory/Recommended Conditions of Acceptance of the Tenderer's Offer	14
10. Authorisation	14
11. Revisions	14
Annex A – Technical Tender Returnable (Instructions to tenderers)	15
Annex B – Method of Response to Technical Schedules A&B	16
Annex C – Factory Evaluation Checklist	17
Annex D – Deviations to Referenced Technical Standards	19
Annex E – Type Tests Tables	20

Tables

Table 1: Mandatory Technical Requirements Evaluation	6
Table 2: Technical Qualitative Evaluation Criteria Descriptions and Weighting for high frequency Converters and Inverters	7

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Revision: **1**

Page: **3 of 21**

Table 3: Scoring of Items in Technical Schedules A&B and Factory Evaluation Checklist	8
Table 4: Technical Requirements Evaluation	8
Table 5: Factory Evaluation	8
Table 6: Deemed Risk Evaluation	9
Table 7: Training Detail.....	10
Table 8: Mean Time Between Failure.....	11
Table 9: Equipment (List of major spares, list of contingency spares) Reliability and Repair Cost	12
Table 10: Equipment Field Failure Reports	13
Table C.1: Factory Evaluation Checklist.....	17
Table D.1: Deviations to Referenced Technical Standards.....	19
Table E.1: Converters and Inverters typed tested range of products.....	20

1. Introduction

This report has been developed to set the standard technical evaluation criteria to be used when evaluating tender submissions for Converters and Inverters to be used within Transmission division.

The report defines the 'Mandatory', 'Technical Qualitative', 'Factory Evaluation' and 'Deemed Offer Risk(s)' criteria that will be used to evaluate responses to the enquiry for Converters and Inverters.

The technical evaluation criteria and scoring are set out in detail within this report.

2. Supporting clauses

2.1 Scope

2.1.1 Purpose

The report provides the technical evaluation criteria relating to a commercial enquiry for the design, manufacture at works, testing, quality assurance, delivery to site or Eskom stores, off-loading, erection, commissioning, decommissioning; installation and disposal of Converters and Inverters (AC to DC; DC to AC; DC to DC) to be used within Eskom's Transmission business. This document covers the criteria and scoring in terms of how Eskom intends to evaluate the tenders for Converters and Inverters.

2.1.2 Applicability

This document shall apply throughout Transmission division.

2.2 Normative/informative references

2.2.1 Normative

- [1] ISO 9001 Quality Management Systems.
- [2] 240-53114248: Thyristor and switch mode chargers, AC/DC to DC/AC converters and inverter /uninterruptible power supplies standard.
- [3] Converters Once off Enquiry Schedules A and B 22 November 2022 BJ.

2.2.2 Informative

None

2.3 Definitions

2.3.1 General

Definition	Description
Cosmetics	Requirements related to visual appearance and technical specifications, where non-compliance can be accepted, based on a waiver of low risk of non-performance of the system.
End user	The term "end-user" is used to distinguish the person who will actually work with the goods or services from individuals who are involved in other stages of the development, production and distribution
Eskom evaluation team	The persons appointed by Eskom to perform the evaluation of tender submissions in line with Eskom's requirements.
Normative	Documents that shall be read in conjunction with this report and are binding on tenderers.

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2.3.2 Disclosure classification

Controlled disclosure: controlled disclosure to external parties (either enforced by law, or discretionary).

2.4 Abbreviations

Abbreviation	Description
CV	Curriculum Vitae
OEM	Original Equipment Manufacturers

2.5 Roles and responsibilities

It is proposed that:

- Eskom shall utilise this document as the basis for the technical evaluation process.
- Tenderers shall note the evaluation criteria as laid out in this document and submit tenders in compliance to the stipulated requirements.

2.6 Process for monitoring

Eskom will monitor the compliance to this document.

2.7 Related/supporting documents

Not applicable.

3. Tender Technical Evaluation Criteria

The evaluation exercise is performed by the Eskom evaluation team. The following criteria will be used to assess the tenderer's capability to enter into a contract with Eskom with respect to specific products and to meet Eskom's requirements. The evaluation method has four main stages:

- Mandatory Requirements Evaluation
- Technical Qualitative Requirements Evaluation
- Factory Evaluation
- Deemed Offer Risk(s) Evaluation

Tenderer's offers must achieve at least the threshold for each stage in order to qualify for evaluation under a subsequent stage. Tenderers that do not achieve at least the threshold for a stage will not be evaluated further. The detailed methodologies for scoring in each stage are provided in Sections 3.1 to 3.4 below.

3.1 Mandatory Requirements Evaluation

This part of the evaluation starts when submissions are opened and assessed for the first time. The Eskom evaluation team will go through the details of the returnable submissions that are required and will ensure that all the Mandatory Requirements are met. Submissions that receive a "No" for any of these requirements will not be able to proceed to the 'Technical Qualitative Requirements Evaluation' stage and therefore will fail the technical evaluation.

Table 1: Mandatory Technical Requirements Evaluation

#	Mandatory Technical Criteria Description	Reference to Technical Specification / Tender Returnable	Comply	Comments
1.	Is all information supplied in English?		Yes/No	
2.	Are completed Technical Schedules A&B on the "Converters Once off Enquiry Schedules A and B 22 November 2022 BJ.xls" submitted separately for each offered Product? [Offer could be one (1) or more of required products]. (Clause 4)	Normative Reference [2] and [3]	Yes/No	
3.	Is compliance to the Referenced Technical Standards, including any deviations, submitted with the associated declaration signed by the duly authorised Tenderer's representative?	Annex D	Yes/No	
Threshold. Should the tenderer fail to meet ANY ONE of the above requirements they will be automatically disqualified.				

3.2 Technical Qualitative Requirements Evaluation

This stage shall comprise of scoring indicated in Table 2 for each category of product indicated below.

- a) Category 1: Converters AC – DC Technical Schedules A&B for Eskom standard [2] 240-53114248
- b) Category 1: Converters DC – DC Technical Schedules A&B for Eskom standard [2] 240-53114248
- c) Category 2: Converters DC – AC Technical Schedules A&B for Eskom standard [2] 240-53114248

Only submissions that have passed the 'Technical Qualitative Requirements Evaluation' scoring threshold of **80%** for each subcategory (Table 2) will proceed to the 'Practical Evaluation' stage.

The Technical Schedules A&B use a default weight of 1 for each scored item. Critical items are assigned higher weights which is either be a 2 or 3. Each item is assigned a score (PE Enquiry 2022 schedules A and B.xls) by the Eskom evaluation team (using Table 4 below), based on the tendered response and cross-checked with the supporting documents provided (where applicable). The score for each item will be multiplied by its weight to obtain the total score per item (Weight x (Score from Table 2)).

Tender responses claiming compliance to an item (e.g., 'Comply') but which are found to be partially compliant or non-compliant during verification will be assigned the corresponding score by the Eskom evaluation team. Items for which compliance is not claimed (e.g., 'Do Not Comply') but which are found to be compliant during verification will be scored as 'non-compliant', based on the original response. Items for which no response is provided shall automatically be scored as 'non-compliant'.

Table 2: Technical Qualitative Evaluation Criteria Descriptions and Weighting for high frequency Converters and Inverters

Item	Qualitative Technical Criteria Description		Reference to Technical Specification / Tender Returnable	Pass / Fail Threshold	Pass / Fail
1	Schedule A and Schedule B		A&B Schedules Technical Evaluation Spreadsheet	≥80%	
2	OEM Type Testing Reports (<i>Section 6 below</i>)		A&B Schedules Technical Evaluation Spreadsheet	≥80%	
3	Drawings, Manuals and Training , (<i>Section 7 below</i>)				
	3.1	Equipment manuals (installation, operating and maintenance) and drawings of each category of product offered.	A&B Schedules Technical Evaluation & Tender Evaluation Spreadsheet.	≥80%	
	3.2	Information on local technical support and level of support offered and training.	A&B Schedules Technical Evaluation & Tender Evaluation Spreadsheet.	≥80%	
4	Life Cycle Costing (<i>Section 8 below</i>) (Mean Time Between Failures, Equipment Reliability Cost, Repair Cost of Equipment, Spares)		A&B Schedules Technical Evaluation & Tender Evaluation Spreadsheet.	≥80%	
5	Deemed Technical Risk (<i>Section 3.4</i>)		A&B Schedules Technical Evaluation & Tender Evaluation Spreadsheet.	≥80%	
6	Practical Evaluation (<i>Section 3.3</i>)		A&B Schedules Technical Evaluation & Tender Evaluation Spreadsheet.	≥80%	

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All scores for the Technical Schedules A&B will be tallied and a percentage shall be calculated based on the maximum possible score. This value will be recorded as the "Score %" in Table 4.

Table 3: Scoring of Items in Technical Schedules A&B and Factory Evaluation Checklist

Criteria	Score
Fully compliant	3
Partially compliant (minor deviation)	1
Non-compliant (major deviation)	0

Table 4: Technical Requirements Evaluation

Criteria	Score %	Threshold	Comments
Compliance with Technical Criteria Description 1 - 5 on Table 2 for Eskom standard 240-53114248 [AC to DC]		≥80%	
Compliance with Technical Criteria Description 1 - 5 on Table 2 for Eskom standard 240-53114248 [DC to AC]		≥80%	
Compliance with Technical Criteria Description 1 - 5 on Table 2 for Eskom standard 240-53114248 [DC to DC]		≥80%	
To proceed to the next level of evaluation the tenderer should have a combined threshold for the three categories above or greater or equal to eighty percent (≥80%).		≥80%	

3.3 Factory Evaluation

This evaluation is performed to assess the tenderer's capability to design, manufacture at works, testing, quality assurance, delivery to site or Eskom stores, off-loading, erection, commissioning, decommissioning, installation and disposal of the required products. The evaluation will take the form of both a desktop evaluation as well as a visit to the tenderer's manufacturing premises/factory at which the works are to be undertaken, to confirm the tenderer's capability in terms of facilities, skills and historical performance. The presentation shall entail an overview of the OEM, local agent and the equipment features which gives the offered equipment an edge (advantage) over other equipment in the market. Tenderer visits shall be conducted during the tender evaluation phase.

The factory evaluation will be based on the Factory Evaluation Checklist provided in Table C.1 (Annex C) of this document. During the factory visit, the tenderer will demonstrate the various items listed. The Eskom evaluation team will score each item, listing their reasoning. Scores assigned by the Eskom evaluation team will not be shared with tenderers during the evaluation.

The Factory Evaluation Checklist uses a default weight of 1 for each scored item. Each item will be assigned a score by the Eskom evaluation team using Table 3. The score for each item will be multiplied by its weight to obtain the total score per item (Weight x (Score from Table 3)).

All scores from Table C.1 will be tallied and shall be calculated based on the maximum possible score. This value will be recorded as the equivalent amount out of a score of 100% in Table 5.

Only submissions that pass the 'Factory Evaluation' scoring threshold of ≥80% (Table 5) will proceed to the 'Deemed Offer Risk(s) Evaluation' stage.

Table 5: Factory Evaluation

Criteria	Score %	Comments
Evaluation score from Factory Evaluation Checklist (Annex D)		
Threshold	≥80%	

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3.4 Deemed Offer Risk Evaluation

Eskom's evaluation team shall compile a narrative summarising risk associated with any aspect of the offer:

- a) noted during the Technical Qualitative Requirements Evaluation,
- b) noted as part of Field Failure Report information,
- c) noted during the Factory Evaluation,
- d) based on any pricing anomalies, noted during subsequent financial evaluations that cannot be acceptable clarified.
- e) based on the deviations provided in Table D.1: Deviations to Referenced Technical Standards, and

This narrative shall be used to determine and motivate whether the risk is deemed low / acceptable / high and will serve as input to the recommendation as to whether the offer should be accepted as shown in Table 6 below. Note, the TET shall only have access to financial information post completion of the technical evaluation report. Any changes as a result of d) above will be included in an update to the initial report.

Table 6: Deemed Risk Evaluation

Criteria	Score	Comments
Offer Risk(s)		
Threshold	Acceptable	

4. OEM Agent Agreement Clarification/Requirements for Contract award only

Eskom requires the detail pertaining to the OEM and agent agreement, indicating the OEM required training, and commitment to support. The OEM shall have a local agent in South Africa. The guarantee to the end user shall be honoured by the OEM. The OEM shall confirm on a signed letter head that the local agent is authorized or accredited to perform the following activities: test, commission, maintain, modify, and conduct operating and maintenance training to the end user. The names of the accredited people (of the local agent), their designation and their level of accreditation shall be listed in this letter and their CVs shall be submitted with the tender documentation.

5. Tender Deliverables

Clarification of the submissions by the tenderer can be requested.

It is required that responses given in the A/B Schedules are substantiated by product brochures and documentation. Product brochures and documentation must be submitted in hardcopy of the official tender submission and electronically, searchable Acrobat (*.pdf) files are preferred for all documentation. Non-compliances and deviations to the standard and schedules must be declared. A comprehensive table of contents for all items submitted shall be provided to enable items to be located quickly. Digital links to material from the table contents to applicable files will be required.

6. Type Testing

The compliance to SANS 62040-1, SANS 62040-2, SANS 62040-3, SANS 1652 and IEC 60146 needs to be indicated as part of the type test report submitted. The Type tests submitted should be in line with the latest IEC and equivalent SANS Standard. It is required that all type test reports of the offered equipment shall be submitted as part of the tender submission. If the OEM has no type tested products as per the latest Eskom standard 240-53114248: AC/DC to DC/AC Converters and Inverter power supplies standard, a type test report for a similar product must be submitted as part of the tender submission, with all deviations to the specification or requirements listed. At least one of the largest product ranges must have been type tested by the OEM to the latest IEC 62040/60146 revision in order to prove capability. This will be (required as a tender deliverable.

Eskom requires that the OEM and agents have the capability and facilities to perform FATs (routine tests and operational tests) and type tests at their premises excluding electromagnetic compatibility (EMC) and radio frequency interference (RFI) tests. EMC and RFI testing must be done by a reputable local accredited laboratory. The OEM is also requested to indicate the name of the laboratories used for type test purposes.

7. Drawings, Manuals, and Training.

Comprehensive OEM manuals shall be submitted for the equipment on offer.

The tenderer must offer training in the Republic of South Africa. The training provided will meet the standard of the OEM and will be authorized by Eskom to conduct all operating and maintenance activities, and major overhauls. The operator training will be provided with the unit being commissioned. The training will be available to any of Eskom's personnel. The person responsible for presenting the training is trained, competent and certified by the OEM. An engineering course will be developed and registered with the Engineering Council of South Africa. A detailed breakdown of training programmes for the particular range of products is submitted in the table below.

Specialized training shall be made available to Eskom's maintenance and engineering personnel. This training shall include the knowledge and skills to enable individuals to adjust the internal parameters of the equipment to meet specific field conditions and to load firmware upgrades as and when required. The necessary configuration tools shall be provided to authorize staff to change these internal parameters. Trained and authorized personal will be issued the required passwords to effect the changes.

The training must be available for a period of 10 years following the start of the contract. Following this period all training material must be handed over to Eskom.

Table 7: Training Detail

COURSE DESCRIPTION	DURATION (DAYS)	ACTIVITY COMPETENCY	MINIMUM REQUIREMENTS FOR COURSE ENTRY	COST PER TRAINEE To be provided as part of commercial submission

8. Life Cycle Costing

Life Cycle Costing (LCC) for the product is going to be done by the Employer in accordance with this paragraph.

The tenderer gives a detailed breakdown of all cost components used in the life cycle cost calculations in this paragraph. The failure and repair data may be reviewed with the Contractor prior to contract award to ensure verification, completeness and accuracy. The projected labour and material costs of failures are evaluated.

8.1.1 Total Cost of Ownership

Total Cost of Ownership (A) is given by

$$A = B + C + D$$

where B = adjusted present day capital cost of the product (allowing for financial terms, VAT, errors, and omissions etc. in SA Rand),

where C = lifetime cost of energy cost based on efficiency while operated continuously at 50% rated capacity over a 10-year period. The lifetime cost of energy will be omitted because the acceptable efficiencies are stipulated in the technical requirement.

where D = estimated life cycle reliability cost.

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8.1.2 Reliability Costs

This evaluation is based on the predicted performance of the product. The failure and repair cost data for the products are based on reliability data supplied by tenderer in the required Table 8 below, and on Eskom's and others' experience with the products. The failure data required by the -Eskom to evaluate and monitor the performance of the product must be reflected in the reliability table. A spares discount offered if the reliability is worse than what was indicated by the tenderer over the 5-year period. While maintenance is performed as indicated in the relevant Eskom Task Manuals.

Table 8: Mean Time Between Failure

MTBF in hours	Spares discount %
MTBF	
MTBF (over 43800hours = 5 years)	
MTBF	
MTBF <1%	
1%≤ MTBF <5%	
5%≤ MTBF <10%	
10%≤ MTBF <15%	
15%≤ MTBF <20%	
20%≤ MTBF <25%	
25%≤ MTBF <30%	
MTBF >30%	

Table 9: Equipment (List of major spares, list of contingency spares) Reliability and Repair Cost

EQUIPMENT	ITEM	DESCRIPTION	DESCRIPTION REPAIR ACTIVITY	MTBF in hours	MTTR in hours	QUANTITY recommended	TOTAL COST (% of Capital Cost) Detail cost to be provided as part of commercial submission

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TRANSMISSION ONCE OFF PURCHASE OF CONVERTERS AND INVERTERS TENDER
TECHNICAL EVALUATION CRITERIA

Unique Identifier: 240-170001003

Revision: 1

Page: 13 of 21

Table 10: Equipment Field Failure Reports

ITEM	USERNAME ADDRESS CONTACT NAME PHONE NUMBER	NUMBER OF PRODUCTS IN SERVICE	NUMBER OF PRODUCT YEARS	NUMBER OF FAILURES MAJOR MINOR	EST REPAIR TIME (MH) MAJOR MINOR	FAILED SUB- COMPONENT ITEM (REFERENCED TO SPARES LIST)	ACTION TO PREVENT RE- OCCURRENCE	DATE(S) OF RE OCCURRENCE	ADDITIONAL COMMENTS

Notes:

- 1) Provide additional comments if a failure reporting system have not been in effect over the entire life of the product.
- 2) A major failure is defined as a failure that will results in the interruption of output supply (the stored energy device (battery) must be excluded) A minor failure is any failure other than a major failure.
- 3) Repair time (man-hour) estimates are to be based on actual field data where available or alternatively estimated on the basis that all spares recommended in the contract are available and manpower is available during a five-day 40-hour week.
- 4) The tenderer identifies improvements/replacements if any of components and sub-components after a major or minor failure. Additional comments regarding failure causes are recommended.
- 5) If the table does not provide for enough space, information is provided elsewhere, and the table are used as a summery sheet. Codes or key words can be used to identify the activities described in detail in another document.

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9. Mandatory/Recommended Conditions of Acceptance of the Tenderer's Offer

For tenderer's offers that achieve the threshold for all stages of the technical evaluation, but which are found to have deficiencies regarding certain aspects of the offer (e.g., partial-compliances or non-compliances to requirements):

- a) that are deemed critical to the offer and/or core functioning of the solution on the Eskom network, and that are deemed to be non-negotiable for contract award, or
- b) whose improvement would enhance the offer and/or performance of the solution, but whose resolution is not mandatory for contract award,

Eskom will include 'Mandatory' or 'Recommended' conditions of acceptance, to be negotiated prior to any contract award, in the technical evaluation report.

10. Authorisation

This document has been seen and accepted by:

Name and surname	Designation
Nelson Luthuli	Senior Manager – PTM&C
Andre De La Guerre	Manager - Protection, DC, Metering and Measurements Technologies - TX
Wayne Pringle	Senior Technician – Transmission Telecommunications
Alpheus Majozi	Senior Advisor PTM&C
Phumudzo Bebwele	Senior Engineer Transmission Telecommunications

11. Revisions

Date	Rev	Compiler	Remarks
Nov 2022	1	B. Jonga	New. Registered the document 240-170001003 as a Transmission Document with a new number and a new title for the Transmission division enquiry purposes.

Annex A – Technical Tender Returnable (Instructions to tenderers)

Tenderers shall supply the following information and supporting documentation:

- 1) Details regarding the make and model numbers of all offered equipment, auxiliary components, software, etc. Tenderers are to use the spreadsheet “.xls” for this purpose.
- 2) Back-to-back agreement letter between the tenderer and OEM, detailing the support by the OEM to the tenderer with the equipment and technical support for the duration of the contract period and support during design life of the equipment. **This will be for contract award only.**
- 3) Completed Technical Schedule A&B for Converters AC-DC as per Eskom standard 240-53114248, including any deviations.
- 4) Completed Technical Schedule A&B for Converters DC-AC as per Eskom standard 240-53114248, including any deviations.
- 5) Completed Technical Schedule A&B for Converters AC-DC as per Eskom standard 240-53114248, including any deviations.
- 6) Compliance to Referenced Technical Standards (Annex D), including any deviations, with the associated declaration signed by the duly authorised Tenderer's representative.
- 7) Product manuals and data sheets for all products offered.
- 8) A schedule detailing the guaranteed turnaround time for the repair of faulty equipment.
- 9) CVs for *Key Resources* that will be involved during the development phase. During factory evaluation.
- 10) Details of improvements/firmware upgrades made on all offered equipment in the last 3 years.

Annex B – Method of Response to Technical Schedules A&B

Schedule A & Evidence Required: Purchaser's specific requirements

Schedule B, Evidence in Tender Returnables & Tenderer's Comments: Tenderer's guarantees and technical particulars of equipment offered

Tenderers shall not change the original content of the Technical Schedules A&B.

Tenderers are required to submit responses to all A&B schedule items.

Responses to A&B schedules shall be based on the requirement of Schedule A. "Comply" shall only be acceptable in response to a Schedule A requirement stating "Comply". Tenderers are to indicate 'Comply' in Schedule B where they are fully compliant to the requirement(s). Other items requiring a word, sentence or number response shall be responded to with reference to the actual capability of the equipment offered.

In cases where a product does not fully comply with a Schedule A requirement, the Tenderer shall respond by indicating either "Partially Comply" or "Do Not Comply", as applicable, in Schedule B and shall indicate the product's existing capability and/or reasons for non-compliance/deviations in the "Tenderer's Comments" column.

Note: Where a Schedule A requirement states 'Comply' against the heading of a section from the referenced Eskom standard - this means that compliance is required for all requirements specified under that section heading. In some instances, certain key requirements from or relating to these sections may also be listed separately under the ambit of that heading.

Supporting Documents for Verification

Certain responses to A&B schedule items may require verification by Eskom. Tenderers shall provide evidence for this verification by way of supporting documentation. The Tenderer shall submit a reference, including file name and page number, as well as the file location within the tender pack as to where evidence of the response is to be found. Eskom would prefer that tenderers use Hyperlinks on the A&B schedule excel document for verification of supporting documents.

References shall be made to the file name of the electronic copy of the supporting document, and the page number within that file (not necessarily the same as the page numbers printed on each page of the manual).

Annex C – Factory Evaluation Checklist

The support, facilities and services Checklist defined in this document is intended to assist with ensuring the required levels of support, quality and service can be achieved by the Tenderer through available proper facilities, resources and processes implemented in the routine operations of the Tenderer.

Familiarity with the technical requirements of the referenced documents is assumed, detailed technical requirements are not interrogated here.

Where any activities are contracted out and not handled in-house the contractors are to be evaluated and approved as well by the TET. These contractors will then also be linked to the contract if successful with the tender and as such cannot be changed on an ad hoc basis with prior consultation with Eskom.

The following questions will be evaluated by the Eskom technical evaluation team against the backdrop of this requirement.

Table C.1: Factory Evaluation Checklist

Company Name: Evaluator Name: Date:				
Item	Criteria	Eskom Evaluation	Details if not fully compliant	Score
1	Support, facilities, services and quality (where applicable, would include sub-contractors for metal and/or installation and commissioning)			
1.1	Tenderer to provide the history of the company (presentation and/or brochures).			
1.2	Tenderer to provide company structure and organogram.			
1.3	Tenderer to provide a list of employees who will be working on the contract and their relevant skills and qualifications.			
1.4	Tenderer to provide previous experience with manufacturing or integration of Converters and Inverters. A table that lists all the projects, customers/companies, project quantities, project costs, types of equipment manufactured, completion date and the details of the project leader/company representative (name and contact number) shall be provided.			
1.5	Tenderer to provide the 'layout' diagram of the manufacturing premises (factory layout). The diagram must use an 'A3' page size or larger.			
1.6	The Tenderer to provide examples of Converters and Inverters manufactured or supplied. The examples could either be physical equipment or photographic evidence attributable to the Tenderer.			
1.7	In-house assembly and testing: Assembly and test procedures are documented, with required inspection and test results.			
1.8	Tenderer to provide evidence for a similar product for the documentation including evidence of the order, test results, as-built drawings, quality checklist and proof of delivery.			
2	Mechanical (Tenderer/Steelwork supplier)			
2.1	Does the Tenderer or Steelwork Supplier have the deemed adequate production facilities?			

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**TRANSMISSION ONCE OFF PURCHASE OF CONVERTERS
AND INVERTERS TENDER TECHNICAL EVALUATION
CRITERIA**Unique Identifier: **240-170001003**Revision: **1**Page: **18 of 21**

Item	Criteria	Eskom Evaluation	Details if not fully compliant	Score
3	Storage, Loading and Transportation			
3.1	Does the Tenderer have proper loading and off-loading transport?			
3.2	Goods crating ready to be transported comply with Eskom standards.			
3.3	Storage facilities for incoming goods and material, work in progress and completed stock are acceptable.			
4	Functionality test / demonstration commodity, do for each			
4.1	Password protection			
4.2	Different charge modes (voltage and current range)			
4.3	Current sharing			
4.4	Loss of controller - revert to rectifier settings and continue with uninterrupted operation			
4.5	Calibration of equipment - loss of calibration			
4.6	Remote communications via GSM modem - settings changes & firmware upgrade			
4.7	Blocked fan filter test - check operation (where applicable)			
4.8	Check all alarms			
4.9	Hot Pluggability			
4.10	Events Log			
4.11	Statistics Log			
5	Documentation and Quality Control			
5.1	Works orders for work in progress are available.			
5.2	Approved working drawings and/or instructions for the work in progress are at hand.			
5.3	Works orders can be traced to customer orders.			
5.4	Stock in hand can be traced customer orders.			
5.5	Delivered items can be traced back to process records and test certificates.			
5.6	Incoming goods inspection is documented for all incoming goods.			
5.7	Specifications for items and materials are to be at hand for use by inspectors as required.			
6	Non-Conforming goods			
6.1	Processes are in place to deal with non-conforming goods by rework or disposal.			
6.2	Non-conforming goods are clearly segregated.			
6.3	Records showing the process are available.			

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Annex D – Deviations to Referenced Technical Standards

Tenderers are to indicate any deviations by indicating on the table below Yes or No OR No Tender under the deviations Column to the referenced Eskom standards in the 'Deviation's worksheet' of the applicable product on the "PE Enquiry 2022 Schedule A and B.xls".

Table D.1: Deviations to Referenced Technical Standards

	Document No.	Document Title & Revision	Deviations (Yes/No/ No Tender)
1.	240-53114248 Rev 3	Converters AC-DC Technical Schedules A&B on the "PE Enquiry 2022 schedule A and B.xls" submitted?	
2.	240-53114248 Rev 3	Converters DC-AC Technical Schedules A&B on the "PE Enquiry 2022 schedule A and B.xls" submitted?	
3.	240-53114248 Rev 3	Converters DC-DC Technical Schedules A&B on the "PE Enquiry 2022 schedule A and B.xls" submitted?	

Declaration

The completed Table D.1 Deviations acknowledges that any and all deviations to the referenced Eskom standards have been indicated in the technical schedules and is binding in terms of this proposal.

Signed by _____ Signature _____

Date _____

Annex E – Type Tests Tables**Table E.1: Converters and Inverters typed tested range of products**

Indicate type tested product by providing date and revision of the following standards, SANS 1652; IEC 60146 and SANS62040					
AC to DC Converters					
	220VAC/12VDC	220VAC/24VDC	220VAC/48VDC	220VAC/110VDC	220VAC/220VDC
10A					
20A					
30A					
40A					
50A					

Indicate type tested product by providing date and revision of the following standards, SANS 1652; IEC 60146 and SANS62040					
DC to AC Converters					
	12VDC/220VAC	24VDC/220VAC	48VDC/220VAC	110VDC/220VAC	220VDC/220VAC
10A					
20A					
30A					
40A					
50A					

Indicate type tested product by providing date and revision of the following standards, SANS 1652; IEC 60146 and SANS62040					
DC to DC Converters					
	24VDC/12VDC	48VDC/12VDC	110VDC/12VDC	220VDC/12VDC	
10A					
20A					
30A					
40A					
50A					

Indicate type tested product by providing date and revision of the following standards, SANS 1652; IEC 60146 and SANS62040					
DC to DC Converters					
	110VDC/110VDC	110VDC/24VDC	110VDC/48VDC	220VDC/48VDC	
10A					
20A					
30A					
40A					
50A					

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**TRANSMISSION ONCE OFF PURCHASE OF CONVERTERS
AND INVERTERS TENDER TECHNICAL EVALUATION
CRITERIA**

Unique Identifier: **240-170001003**

Revision: **1**

Page: **21 of 21**

Indicate type tested product by providing date and revision of the following standards, SANS 1652; IEC 60146 and SANS62040				
DC to DC Converters				
	220VDC/110VDC			
10A				
20A				
30A				
40A				
50A				

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