

| | | |
|---|-----------------|--------------------|
|  Eskom | Strategy | Engineering |
|---|-----------------|--------------------|

Title: Poseidon Temporary Emergency 40MVA 220/66kV Transformer – Technical Tender Evaluation Strategy for the Stringing, Earthing and Erection at Poseidon substation

Unique Identifier: **Pos18P15-SE-E83**

Alternative Reference Number: **N/A**

Area of Applicability: **Engineering**



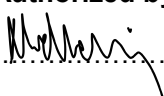
Documentation Type: **Strategy**

Revision: **1**

Total Pages: **17**

Next Review Date: **N/A**

Disclosure Classification: **CONTROLLED DISCLOSURE**

| | | |
|---|--|---|
| Compiled by  N Mazibuko Substation Engineer (Elec.): Substation Engineering | Functional Responsibility  S Zulu Chief Engineer (Elec.): Substation Engineering | Authorized by  S Maharaj Senior Manager: Substation Engineering |
| Date: 31/01/2022 | Date: 02/02/2022 | Date: 7/2/2022 |

1. CONTENTS

| | Page |
|---|-----------|
| 1. CONTENTS | 2 |
| 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 | 5 |
| 2.2.2 Informative | 5 |
| 2.3 DEFINITIONS | 5 |
| 2.3.1 Classification | 5 |
| 2.4 ABBREVIATIONS | 5 |
| 2.5 ROLES AND RESPONSIBILITIES | 6 |
| 2.6 PROCESS FOR MONITORING | 6 |
| 2.7 RELATED/SUPPORTING DOCUMENTS | 6 |
| 3. TENDER TECHNICAL EVALUATION STRATEGY | 6 |
| 3.1 SCOPE OF WORK | 6 |
| 3.2 TECHNICAL EVALUATION THRESHOLD | 6 |
| 3.3 TET MEMBERS | 8 |
| 3.4 TECHNICAL RETURNABLES | 8 |
| 3.5 QUALITATIVE TECHNICAL EVALUATION CRITERIA (A) | 9 |
| 3.6 TET MEMBER RESPONSIBILITIES | 11 |
| 3.7 FORESEEN ACCEPTABLE / UNACCEPTABLE QUALIFICATIONS | 12 |
| 3.7.1 Risks | 12 |
| 3.7.2 Exceptions / Conditions | 12 |
| 4. AUTHORISATION | 13 |
| 5. REVISIONS | 13 |
| 6. DEVELOPMENT TEAM | 13 |
| 7. ACKNOWLEDGEMENTS | 13 |
| 8. APPENDIX A | 14 |

FIGURES

| | |
|---------------------------------|---|
| Figure 1: Geographical Location | 3 |
|---------------------------------|---|

TABLES

| | |
|--|----|
| Table 1: List of Abbreviations | 5 |
| Table 2: Evaluation Scoring Table | 6 |
| Table 3: TET Members | 8 |
| Table 4: A: Stringing, Earthing and Erection Qualitative Technical Evaluation Criteria | 9 |
| Table 5: TET Member Responsibilities | 11 |
| Table 6: Acceptable Technical Risks | 12 |
| Table 7: Unacceptable Technical Risks | 12 |
| Table 8: Acceptable Technical Exceptions / Conditions | 12 |
| Table 9: Unacceptable Technical Exceptions / Conditions | 12 |

CONTROLLED DISCLOSURE

When downloaded from the EDMS, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorised version on the system.

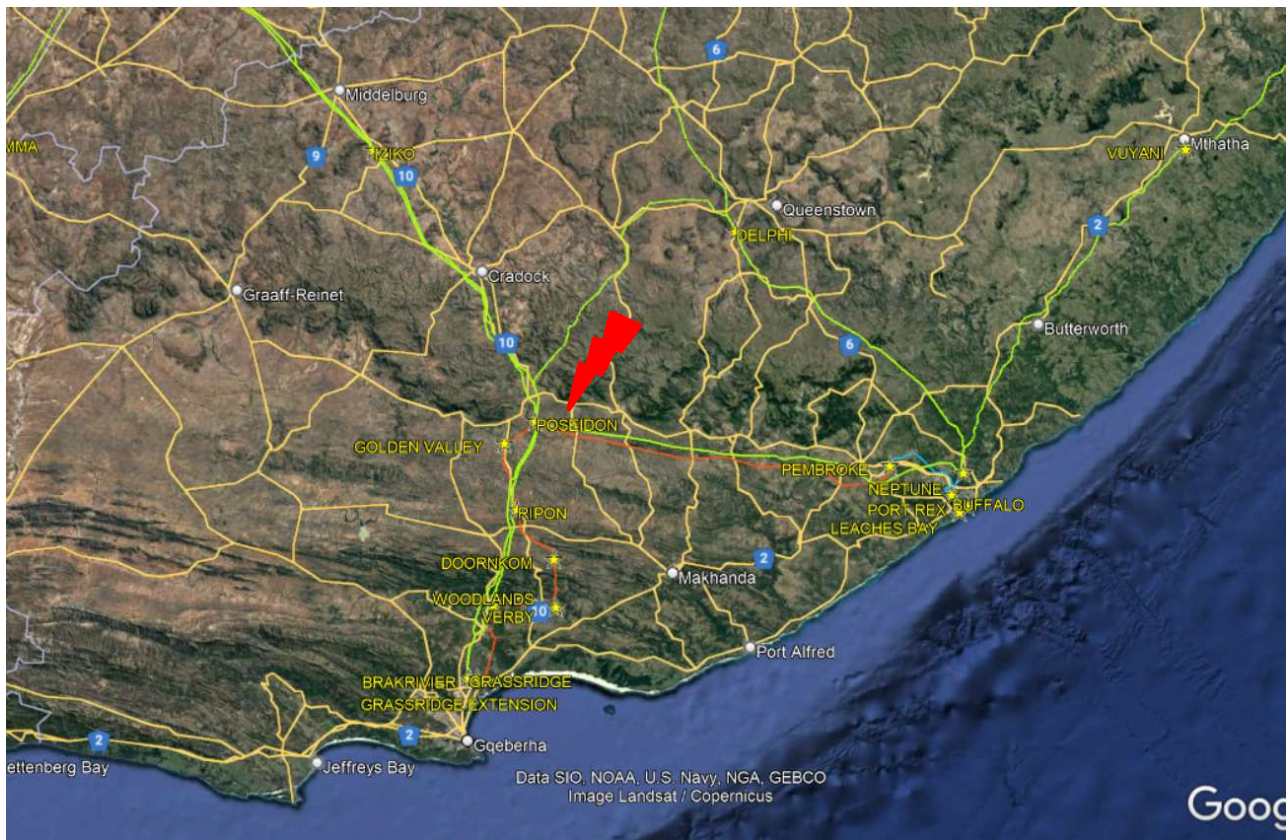


Figure 1: Geographical Location

CONTROLLED DISCLOSURE

When downloaded from the EDMS, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorised version on the system.

1. INTRODUCTION

This document establishes the technical evaluation strategy for the evaluation of tenders that will be received in response to the request to tender for the work to be done at Poseidon Substation. This strategy is a high level consideration of the key aspects that will give direction to the technical evaluation process. It is in accordance with the Tender Engineering Evaluation Procedure (240-48929482) [1].

This document covers the work required for the stringing, earthing and erection at Poseidon substation.

2. SUPPORTING CLAUSES

2.1 SCOPE

This document covers the technical evaluation strategy for the evaluation of the tenders for Construction of a Transformer Plinth suitable for a 220/66kV 80MVA unit,.

The aim of this document is to provide a technical evaluation strategy that shall be used for the technical evaluation of the tenders for stringing, earthing and erection at Poseidon Substation. Furthermore, it will ensure transparency in the evaluation process as per the requirements set out in the Tender Engineering Evaluation Procedure (240-48929482) [1].

2.1.1 Purpose

The purpose of this tender technical evaluation strategy is to define the Technical Returnables, Qualitative Evaluation Criteria and TET member responsibilities for tender technical evaluation. The technical evaluation strategy serves as a basis for the tender technical evaluation process.

2.1.2 Applicability

This document shall apply to the construction of a Transformer Plinth suitable for a 220/66kV 80MVA unit, at Poseidon Substation in the Southern Grid.

2.2 NORMATIVE/INFORMATIVE REFERENCES

Parties using this document shall apply the most recent edition of the documents listed in the following paragraphs.

2.2.1 Normative

- [1] 240-48929482: Tender Engineering Evaluation Procedure
- [2] 32-1034: Eskom Procurement and Supply Management Procedure
- [3] 240-82736997: Stringing, Cabling, Earthing and Erection Specification for Substations
- [4] 0.54/393: Transmission Substation Earthing Standard
- [5] TST41-877: Transmission Substation Design Earthing Standard
- [6] SANS 1200: Standard Specification for Civil Engineering Construction
- [7] OHS Act, 1993: Construction Regulations, 2014
- [8] 240-101940513: Substation Earth Electrode Resistance Measurement
- [9] 240-84854974: Continuity Measurement of Transmission Substation on Earthmat System

2.2.2 Informative

None

2.3 DEFINITIONS

2.3.1 Classification

Controlled Disclosure: Controlled Disclosure to external parties (either enforced by law, or discretionary)

2.4 ABBREVIATIONS

Table 1: List of Abbreviations

| Abbreviation | Description |
|--------------|--|
| CV | Curriculum Vitae |
| EDWL | Engineering Design Work Lead |
| LDE | Lead Discipline Engineer |
| N/A | Not Applicable |
| OHSA | Occupational Health and Safety Act |
| ORHVS | Operating Regulations for High Voltage Systems |
| SANS | South African National Standards |
| TET | Technical Evaluation Team |
| TST | Transmission Standard |

CONTROLLED DISCLOSURE

When downloaded from the EDMS, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorised version on the system.

2.5 ROLES AND RESPONSIBILITIES

Engineering Manager: All Engineering Managers throughout Eskom shall ensure that all staff, in their respective areas understand and adhere to this procedure.

Engineering Design Work Lead (EDWL): The EDWL is responsible to manage the execution and adherence to this procedure. Typically on New Build projects the EDWL role is fulfilled by the Lead Discipline Engineer (LDE) and on existing asset projects the EDWL role is fulfilled by the relevant System Engineer / Plant Engineer.

Technical Evaluation Team (TET) member: The delegated engineers / technical specialists who are responsible to review and evaluate technical aspects of the tender documentation as per the Tender Technical Evaluation Strategy.

2.6 PROCESS FOR MONITORING

N/A

2.7 RELATED/SUPPORTING DOCUMENTS

- Poseidon Foundation, Trench & Earthmat Layout Pos18P15-SE-E3 SHT 0 rev 0
- Poseidon 132/66 kV Emergency Transformer Bay Plinth Earthing – Pos18P15-SE-D16 SHT 3B rev 0

3. TENDER TECHNICAL EVALUATION STRATEGY

3.1 SCOPE OF WORK

A brief outline of the scope of work is as follows:

(Construction of a Transformer Plinth suitable for a 220/66kV 80MVA unit.)

- Install earthing elements and ensure that the installed equipment earthing are electrically connected to the main earth grid of the substation.

Full details of the scope of work is contained in the scope of work document - Poseidon Temporary Emergency 40MVA 220/66kV Transformer - Primary Plant Scope of Work – Pos18P15-SE-E82

3.2 TECHNICAL EVALUATION THRESHOLD

The scoring for each tender will be done as per the scoring table shown below. This table is as per the requirements of Tender Engineering Evaluation Procedure [1]. The minimum weighted average score required for the tender to be considered technically acceptable is 70%.

Table 2: Evaluation Scoring Table

| Score | Percentage | Definition |
|-------|------------|--|
| 5 | 100 | COMPLIANT Meet technical requirement(s) AND; No foreseen technical risk(s) in meeting technical requirements. |

CONTROLLED DISCLOSURE

When downloaded from the EDMS, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorised version on the system.

| | | |
|---|----|---|
| 4 | 80 | COMPLIANT WITH ASSOCIATED QUALIFICATIONS Meet technical requirement(s) with; Acceptable technical risk(s) AND/OR; Acceptable exceptions AND/OR; Acceptable conditions. |
| 2 | 40 | NON-COMPLIANT Does not meet technical requirement(s) AND/OR; Unacceptable technical risk(s) AND/OR; Unacceptable exceptions AND/OR; Unacceptable conditions. |
| 0 | 0 | TOTALLY DEFICIENT OR NON-RESPONSIVE |
| <p>Note 1: The scoring table does not allow for scoring of 1 and 3.</p> <p>Note 2: Foreseen acceptable and unacceptable risk(s), exceptions and conditions shall be unambiguously defined in the relevant Tender Technical Evaluation Strategy.</p> | | |

CONTROLLED DISCLOSURE

When downloaded from the EDMS, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorised version on the system.

3.3 TET MEMBERS

Table 3: TET Members

| TET number | TET Member Name | Designation |
|-------------------|------------------------|----------------------------------|
| TET 1 | N Mazibuko | Substation Engineer (Electrical) |
| TET 2 | TBA | Substation Engineer (Electrical) |

3.4 TECHNICAL RETURNABLES

The following documents shall be submitted when tendering:

- a) List of key personnel, their experiences (include CV detailing project-specific work experience for each employee) and academic qualifications. Also include total number of manpower to be dedicated to this project.
- b) List of relevant and comparable projects undertaken. The list shall include project scope, substation name, completion date, project value and client contact person and details. The contractor shall further include any concessions made during each project execution.
- c) List of all tools and equipment to be used.
- d) Test and measurements methods (procedures) for the various tests and measurements stated in this specification:
 - Earth resistance measurements.
 - Earth continuity measurements.
 - Insulation testing.
- e) Erection method statements (including detailed step-by-step procedures) for the following:
 - Stringing and termination of conductors.
 - Stringing and termination of earth-wire.
 - Installation of HV equipment.
 - Earthing.
 - Brazing of earth connections.
 - Crimping.
- f) Procedure for compression of clamps.

The following documents shall be submitted **upon** tender award, prior to starting with construction:

- a) Proof of training of supervisor as responsible person in accordance with Eskom ORHVS. Copy of ORHVS certificate shall be attached.
- b) Proof of qualification of rigger.
- c) Proof of qualification of operator of machinery.
- d) Calibration certificates of applicable tools and equipment.
- e) Test certificates of lifting equipment.

CONTROLLED DISCLOSURE

When downloaded from the EDMS, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorised version on the system.

3.5 QUALITATIVE TECHNICAL EVALUATION CRITERIA (A)

Compliant tenders will be evaluated against a set of weighted qualitative evaluation criteria. The evaluation criterion has been broken down into sections and a percentage weighting has been allocated to each section. Percentage weighting summary figures is indicated in Table 4 below. For details of the requirements for criteria scoring, see appendix A.

Table 4: A: Stringing, Earthing and Erection Qualitative Technical Evaluation Criteria

| | Qualitative Technical Criteria Description | | Reference to Technical Specification / Tender Returnable | Criteria Weighting (%) | Criteria Sub Weighting (%) |
|-----------|---|-------------------------------------|--|------------------------|----------------------------|
| A1 | Relevant company experience (Projects completed in past 5 years) | | As per 240-82736997, section 3.5, page 17 | 40 | - |
| | 1.1 | Number of projects | As per 240-82736997, section 3.5, page 17 | | 10 |
| | 1.2 | Project scope | As per 240-82736997, section 3.5, page 17 | | 10 |
| | 1.3 | Project value | As per 240-82736997, section 3.5, page 17 | | 10 |
| | 1.4 | Substation name and completion date | As per 240-82736997, section 3.5, page 17 | | 5 |
| | 1.5 | Client contact person and details | As per 240-82736997, section 3.5, page 17 | | 5 |
| A2 | Qualifications and experience of key personnel | | As per 240-82736997, section 3.5, page 17 | 30 | - |
| | 2.1 | Academic qualifications | As per 240-82736997, section 3.5, page 17 | | 5 |

| | | | | | |
|-----------|--|--|---|-------------------|----|
| | 2.2 | Project-specific work experience | As per 240-82736997, section 3.5, page 17 | | 20 |
| | 2.3 | Total number of manpower to be dedicated to this project | As per 240-82736997, section 3.5, page 17 | | 5 |
| A3 | Construction/method statements | | As per 240-82736997, section 3.5, page 17 | 15 | - |
| | 3.1 | Relevancy of method statements | As per 240-82736997, section 3.5, page 18 | | 5 |
| | 3.2 | Adequacy of method statements | As per 240-82736997, section 3.5, page 18 | | 10 |
| A4 | Test Procedures | | As per 240-82736997, section 3.5, page 18 | 5 | - |
| | 4.1 | Procedures relevant/ comprehensive | As per 240-82736997, section 3.5, page 18 | | 5 |
| A5 | Tools and Equipment | | As per 240-82736997, section 3.5, page 17 | 5 | - |
| | 5.1 | Adequacy of tools and equipment | As per 240-82736997, section 3.5, page 17 | | 5 |
| A6 | Procedure for compression of clamps | | As per 240-82736997, section 3.5, page 18 | 5 | - |
| | 6.1 | Procedures relevant/ comprehensive | As per 240-82736997, section 3.5, page 18 | | 5 |
| | | | | TOTAL: 100 | |

3.6 TET MEMBER RESPONSIBILITIES

Table 5: TET Member Responsibilities

| Qualitative Criteria Number | TET 1 | TET 2 |
|--------------------------------|-------|-------|
| A1 | X | X |
| A2 | X | X |
| A3 | X | X |
| A4 | X | X |
| A5 | X | X |
| A6 | X | X |

3.7 FORESEEN ACCEPTABLE / UNACCEPTABLE QUALIFICATIONS

3.7.1 Risks

Table 6: Acceptable Technical Risks

| Risk | Description |
|-------------|--------------------|
| 1. | None. |

Table 7: Unacceptable Technical Risks

| Risk | Description |
|-------------|--|
| 1. | Contractors who do not have the relevant experience. |

3.7.2 Exceptions / Conditions

Table 8: Acceptable Technical Exceptions / Conditions

| Risk | Description |
|-------------|--------------------|
| 1. | None. |

Table 9: Unacceptable Technical Exceptions / Conditions

| Risk | Description |
|-------------|--------------------|
| 1. | None. |

4. AUTHORISATION

This document has been seen and accepted by:

| Name | Designation |
|----------------|--|
| Sipho Zulu | Substation Engineering, Chief Engineer |
| Subhas Maharaj | Substation Engineering, Senior Manager |

5. REVISIONS

| Date | Rev. | Compiler | Remarks |
|--------------|------|------------|-------------|
| January 2022 | 1 | N Mazibuko | First issue |

6. DEVELOPMENT TEAM

The following people were involved in the development of this document:

- None

7. ACKNOWLEDGEMENTS

I would like to thank Rukesh Ramnarain for the compilation and ongoing updating of this template.

CONTROLLED DISCLOSURE

When downloaded from the EDMS, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorised version on the system.

8. APPENDIX A

| Item | Description | Section Criteria Weight (%) | Criteria Sub Weighting (%) | Score (0-5) | Sub Weighting (%) = ((Score)/5) X (criteria sub weighting) | Criteria |
|--|---|-----------------------------|----------------------------|-------------|--|--|
| A1 | Relevant company experience (comparable projects undertaken in past 5 years) | 40% | - | - | - | - |
| 1.1 | Number of projects | | 10% | | | >8 Projects = 5 ; 3 to 7 projects = 4 ; 1 to 2 projects = 2 ; none provided = 0 |
| 1.2 | Project scope | | 10% | | | All three (Stringing , erection and earthing) provided = 5 ; One or two out of three provided = 2 ; None provided = 0 |
| 1.3 | Project value | | 10% | | | > R8m = 5 ; R2m to R8m = 4 ; < R2m = 2 |
| 1.4 | Substation name and completion date | | 5% | | | Name and date provided = 5 ; Only name or date provided = 2 ; None provided = 0 |
| 1.5 | References : Client contact person and contact details | | 5% | | | Contact name and contact details provided = 5 ; Only contact name or only contact details provided = 2 ; None provided = 0 |
| List of relevant and comparable projects undertaken (Maximum points = 25) | | | | | | |
| Total Score | | | | | | |
| List of relevant and comparable projects undertaken (Maximum Section weight = 40%) | | | | | | |
| Weighted score = (score) x (40/25) | | | | | | |
| A2 | Qualifications and experience of key personnel | 30% | - | - | - | - |
| 2.1 | Academic qualifications | | 5% | | | Diploma = 5 ; Certificate/artisan = 4 ; Grade 12 (National Senior Certificate) and National (vocational) Cert. level 4 = 2 ; None provided = 0 |
| 2.2 | Project-specific work experience | | 20% | | | >8 Projects = 5 ; 3 to 8 Projects = 4 ; <3 Projects = 2 ; None provided = 0 |

| | | | | | | |
|--|--|------------|-----|---|---|---|
| 2.3 | Total number of manpower to be dedicated to this project | | 5% | | | >20 - 5; 10 to 20 - 4; less than 10 - 2; none provided - 0 |
| List of key personnel (Maximum points = 15) | | | | | | |
| Total Score | | | | | | |
| List of key personnel (Maximum Section weight = 30%) | | | | | | |
| Weighted score = (score) x (30/15) | | | | | | |
| A3 | Construction/method statements(Stringing , erection and earthing of equipment and steelwork) | 15% | - | - | - | - |
| 3.1 | Relevancy of method statements | | 5% | | | Relevant stringing , erection and earthing method statements provided: All three provided = 5 ; One or two out of three provided = 2 ; Irrelevant or none provided = 0 |
| 3.2 | Adequacy of method statements | | 10% | | | Detailed procedures for all activities = 5 ; Irrelevant or none provided = 0 |
| Construction/method statements(Stringing, erection and earthing of equipment and steelwork (Maximum points = 10) | | | | | | Total Score |
| Construction/method statements (Stringing, erection and earthing of equipment and steelwork (Maximum Section weight = 15%) | | | | | | |
| Weighted score = (score) x (15/10) | | | | | | |
| A4 | Test procedures((earth-mat resistance measurements, Continuity measurements between earthmat and equipment/steelwork) | 5% | - | - | - | - |
| 4.1 | Procedures relevant/comprehensive | | 5% | | | Both test procedures relevant and comprehensive = 5 ; One out of two test procedures provided = 2 ; Irrelevant = 0 |
| Test procedures (Maximum points = 5) | | | | | | |
| Total Score | | | | | | |
| Test procedures (Maximum Section weight = 5%) | | | | | | |
| Weighted score = (score) x (5/5) | | | | | | |

| | | | | | | |
|---|--|-----------|----|---|---|--|
| A5 | Tools and Equipment | 5% | - | - | - | - |
| 5.1 | Adequacy of tools and equipment | | 5% | | | Detailed = 5 ; Marginal = 4 ; Deficient = 2 |
| Tools and Equipment (Maximum points = 5) | | | | | | |
| Total Score | | | | | | |
| Tools and Equipment (Maximum Section weight = 5%) | | | | | | |
| Weighted score = (score) x (5/5) | | | | | | |
| A6 | Procedure for compression of clamps | 5% | | | | - |
| 6.1 | Procedures relevant/comprehensive | | 5% | | | Relevant and comprehensive = 5 ; Relevant and not comprehensive = 2 ; Irrelevant = 0 |
| Procedure for compression of clamps (Maximum points = 5) | | | | | | |
| Total Score | | | | | | |
| Procedure for compression of clamps (Maximum Section weight = 5%) | | | | | | |
| Weighted score = (score) x (5/5) | | | | | | |

| Criteria | Section | Maximum Score | Achieved Score |
|--|---------|---------------|----------------|
| List of relevant company experience (comparable projects undertaken in past 5 years) | A1 | 25 | |
| Qualifications and experience of key personnel | A2 | 15 | |
| Construction/method statements | A3 | 10 | |
| Test procedures | A4 | 5 | |
| Tools and Equipment | A5 | 5 | |
| Procedure for compression of clamps | A6 | 5 | |
| Total | | 65 | |
| Percentage obtained = (Achieved Score/65) x 100 | | | |

The minimum score required to be considered as a supplier must be 70% or above.