

# Strategy

Generation **Engineering** 

**Tender Technical Evaluation** Title: Strategy for Medupi

Generating Plant, Integration of N2 and H2 plants

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#### 1. INTRODUCTION

A invite will be issued calling for interested parties to participate in the tender process for the review, evaluation, design, updating and acceptance of existing Engineering design documents, design, procurement, fabrication, manufacture, factory testing, storage, delivery to Medupi Power Station site, offloading, erection, installation, site testing, cold and hot commissioning, project management, quality control of a fully functional Medupi Nitrogen and Hydrogen Generating Plants at Medupi Power Station. This document sets out the method and criteria that will be used to evaluate the tenders that will result from this pre-qualification invite.

#### 2. SUPPORTING CLAUSES

#### 2.1 SCOPE

This strategy defines the Technical Evaluation Team (TET), their responsibilities and the criteria to be used to evaluate the Medupi Hydrogen and Nitrogen Generating Plants and their integration Project.

#### 2.1.1 Purpose

The purpose of this tender technical evaluation strategy is to define the Mandatory Evaluation Criteria and Qualitative Evaluation Criteria as well as TET members' responsibilities for tender technical evaluation. The technical evaluation strategy serves as basis for the tender technical evaluation process.

### 2.1.2 Applicability

This strategy document applies to the engineering team working on the Medupi Hydrogen and Nitrogen Generating Plants and their integration Project.

#### 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] 240-168966153 Generation Tender Technical Evaluation Procedure.
- [2] 32-1034 Eskom Procurement Policy.

#### 2.2.2 Informative

- [3] 348-101113183 Medupi Hydrogen Generating Plant SOW.
- [4] 348-10113180 Medupi Power Station H2 Bulk Storage Vessels SOW
- [5] 348-1012337 Medupi Nitrogen Generating Plant, Integration of Hydrogen and Nitrogen Plants SOW
- [6] 240-53113685 Generation Design Review Procedure

#### 2.3 DEFINITIONS

Definition Description

Not Applicable

#### 2.3.1 Disclosure Classification

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

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#### 2.4 ABBREVIATIONS

| Abbreviation | Description                         |
|--------------|-------------------------------------|
| C&I          | Control & Instrumentation           |
| C&I          | Control & Instrumentation           |
| DCS          | Distributed Control System          |
| ECSA         | Engineering Council of South Africa |
| LDE          | Lead Discipline Engineer            |
| LPS          | Low Pressure Services               |
| LV           | Low Voltage                         |
| NTT          | Notes To Tender                     |
| OEM          | Original Equipment Manufacturer     |
| PLC          | Programmable Logic Computer         |
| TES          | Technical Evaluation Strategy       |
| TET          | Technical Evaluation Team           |
| VDSS         | Vendor Document Submission Schedule |

#### 2.5 ROLES AND RESPONSIBILITIES

| Compiler                         | The document compiler is responsible for ensuring that this document is up-to-date and that this document is not a duplication of an existing, documentation regarding.  |
|----------------------------------|--|
| Functional Responsibility (EDWL) | The Functional Responsible Person shall determine if the document is fit for purpose, before the document is submitted for authorization.  |
| Authorizer (PEM)                 | The document authorizer is a duly delegated person with the responsibility to review the document for alignment to business strategy, policy, objectives and requirements. He/she shall authorize the release and application of the document. |
| TET members                      | Provide input to the technical tender evaluation strategy and associated engineering activities.   |

#### 2.6 PROCESS FOR MONITORING

The primary process for monitoring will be governed by Generation Design Review Procedure (240-53113685), this entails assuring that the design achieves the requirements set out in this document.

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#### 2.7 RELATED/SUPPORTING DOCUMENTS

Not applicable.

# 3. TENDER TECHNICAL EVALUATION STRATEGY

**Table 1: Scoring Method** 

| SCORE | Heading | Heading  |  |  |
|-------|---------|--|--|--|
| 5     | 100     | Meet technical requirement(s)/AND;     No foreseen technical risk(s) in meeting technical requirements.  |  |  |
| 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  |  |  |
| 0     | 0       | TOTALLY DEFICIENT OR NON-RESPONSIVE  |  |  |

**Table 2: Evaluation Scores** 

| Technical (100%)                                   |     |  |  |
|--|-----|--|--|
| 5.1 General  | 10% |  |  |
| 5.2 Mechanical                                     | 30% |  |  |
| 5.3 Control & Instrumentation                      | 25% |  |  |
| 5.4 Electrical                                     | 10% |  |  |
| 5.5 Civil  | 15% |  |  |
| 5.6 Configuration and Documentation 10% Management |     |  |  |
| TOTAL 100%   |     |  |  |
| Overall minimum 70% threshold for qualification    |     |  |  |

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**Table 3: TET Members** 

| TET<br>number | Designation                                    | Name and Surname     |
|---------------|--|----------------------|
| TET 1         | EDWL: Medupi Project                           | Zak Jiyane           |
| TET 2         | Manager: Configuration Management C&I Engineer | Mandla Patrick Nkosi |
| TET 3         | LDE: C&I Engineering                           | Mdu Shozi            |
| TET 4         | Electrical Engineering LDE                     | Banele Mbendane      |
| TET 5         | Senior Electrical Engineer                     | Tshilidzi Bruwer     |
| TET 6         | Engineer: Civil Engineering                    | Justin Padiachy      |
| TET 7         | Chief Technologist Civil: Civil Engineering    | Willie Beetge        |
| TET 8         | LPS Engineering LDE                            | Morapeli Matjoi      |
| TET 9         | Senior Engineer                                | Jan Strydom          |
| TET 10        | Chemical Engineer                              | Mahlatse Bosega      |

#### 4. MANDATORY TECHNICAL EVALUATION CRITERIA

To be eligible for evaluation the tenderer shall meet the gatekeepers specified on the table below.

**Table 4: Mandatory Evaluation Criteria** 

|    | Mandatory Technical<br>Criteria Description   | Source of Evidence   | Motivation for use of Criteria |
|----|---|--|--------------------------------|
| 1. | ECSA Professional Engineering Certification: Professional Engineer/Technologist who is accountable for the design, construction monitoring and certification of applicable scope. |  | Design Integrity               |
|    | a) Mechanical   | Proof of ECSA registration i.e.<br>Registration number and/or<br>Certificate |                                |
|    | b) Civil & Structural   | Completed/Submitted Competency<br>Declaration Form (refer to Appendix<br>A)  |                                |

# 5. QUALITATIVE TECHNICAL EVALUATION CRITERIA

Notes to tenderer:

a) The CVs of Key Personnel should have experience which is comparable in nature to the Works specified in this tender.

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b) It is a requirement that the key personnel have good communication skills in the English language.

c) Where no information is offered by the Tenderer no points shall be scored.

# **5.1 GENERAL EVALUATION CRITERIA (10%)**

**Table 5: Qualitative Evaluation Criteria** 

| No    | Description  | Weighting | Sub-<br>weighting | Tender<br>Returnable(s)   | Scoring Criteria   |
|-------|--|-----------|-------------------|---|--|
| 5.1   | General Evaluation<br>Criteria   | 10%       |                   | ,   |  |
| 5.1.1 | Company's background and experience on design and construction of Gas Generating Plant and distribution plant or similar works.  Company's background and experience shall be a minimum of 5-10 years on design, construction and commissioning of Gas generating and distribution plant works, respectively. The sub-contracted companies as part of the main tenderer shall have experience of minimum 5 years on design construction and commissioning of the main aspects or disciplines of the project including but not limited to:  Gas generating plant  Piping system  Electrical  Hazardous installations  Control and Instrumentation |           | 40%               | Demonstrate experience on similar projects.  Provide signed Testimonials or Completion Certificates for completed projects consisting of the following information:  Name of company where project was executed  Project Description  Construction period  Contract value  Contact person | 5= 100% = 3 or more completed projects of similar nature and 5 or more years' experience, 100% disciplines covered  4= 80% = 1-2 completed projects of similar nature and 3-5 years' experience, 50% disciplines covered  2 = 40% 1 completed project of similar nature and 1-3 years' experience, 20% disciplines covered  0= 0% = 0 completed projects of similar nature and less than 1 year experience |
| 5.1.2 | Compliance to the full scope of work.  |           | 40%               | Comprehensive overview of offered solution and concept for integration to existing infrastructure      List of exclusions from  | 5 = 100%  100% of Tender Returnables with relevant information received AND Meet technical requirement(s)/AND  |

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|       |  |     | the Tender   | No foreseen technical  |
|-------|--|-----|--|--|
|       |  |     | requirements   | risk(s) in meeting technical requirements.   |
| 5.1.3 | Project Execution Plan and Project Programme | 20% | Demonstrate how tenderer intend on executing the project by specified target date by providing the following information for evaluation purposes:  1) Provide typical project methodology document detailing how the Tenderer proposes to execute the Works, including decommissioning, dismantling, transport, design, manufacture, delivery, erection, commissioning and handover.  2) The Tenderer shall indicate how it shall perform the various functions including design, procurement, programming, expediting, inspection, testing, training and commissioning and the locations where the various portions of the Work shall be implemented.  3) Provide | 4 = 80%  80% of Tender Returnables with relevant information received AND  Meet technical requirement(s) with; Acceptable technical risk(s) AND/OR;  Acceptable exceptions AND/OR; Acceptable conditions.  2 = 40%  40% of Tender Returnables with relevant information received AND  Does not meet technical requirement(s) AND/OR; Unacceptable technical risk(s)  Unacceptable exceptions AND/OR;  Unacceptable conditions.  0 = 0% = TOTALLY DEFICIENT OR NON-RESPONSIVE |
|       |  |     | organogram of key personnel of the main contractor. Organogram should include Management team, Project Manager, professional engineers approving   |  |

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# **5.2 MECHANICAL EVALUATION CRITERIA (30%)**

| No    | Description   | Weighting | Sub-<br>weighting | Tender Returnable(s)  | Scoring Criteria  |
|-------|---|-----------|-------------------|---|---|
| 5.2   | Mechanical<br>Evaluation Criteria   | 30%       |                   |   |   |
| 5.2.1 | Company experience in the design and construction of piping systems in accordance with ASME B31.1 or 31.3 |           | 20%               | Description of each of the piping systems which includes the following:  Piping code used.  Desing pressure  Design temperature  Larges pipe size.  Length of largest pipe size.  Site  Customer.  Construction date. | 5 = construction in accordance with ASME B31.1 or 31.3 of five category I piping systems with a pipe size of at least DN80, pressure rating of PN16 and pipe length of 200m  4 = construction in accordance with ASME B31.1 or 31.3 of two category I piping systems with a pipe size of at least DN80, pressure rating of PN16 |

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| 5.2.2 | Company experience in   | 10% | Description of each of the   | and pipe length of 200m  2 = construction in accordance with ASME B31.1 or 31.3 of two piping systems.  0 = No experience or inadequate information supplied.  4 = five installations of  |
|-------|---|-----|--|---|
|       | the installation and commissioning of compressors and dryers            |     | <ul> <li>installations which includes the following:</li> <li>Flowrate.</li> <li>Discharge pressure</li> <li>Site</li> <li>Customer.</li> <li>Commissioning date.</li> </ul>                         | compressors and dryers with a flowrate of at least 200 N m³/hr  4 = two installations of compressors and dryers with a flowrate of at least 200 N m³/hr  2 = two installations of compressors and dryers  0 = No experience or inadequate information supplied.   |
| 5.2.3 | Company experience in the installation of pressure vessels              | 10% | Description of each of the pressure vessels which includes the following:  Pressure vessel design code.  Design pressure  Vessel size  Site  Customer.  Commissioning date.                          | 5 = five pressure vessels with a size of at least 80 m³ 4 = two pressure vessels with a size of at least 80 m³ 2 = two pressure vessels. 0 = No experience or inadequate information supplied.  |
| 5.2.4 | Experience of Engineer responsible for the design of the piping systems | 5%  | Description for each of the piping designs which includes the following:  Fluid  Design pressure.  Nominal Size (DN)  Piping length  ECSA registration number.  Site  Customer.  Commissioning date. | 5 = Five (5) designs in accordance with ASME B31.1 or B31.3 for a category I non-dangerous gas piping system with a piping length of at lease 200 m while registered as a Professional Engineer/Technologist and which have been successfully commissioned.  4 = Two (2)) designs in accordance with ASME B31.1 or B31.3 for a category I non-dangerous gas piping system with a piping length of at least 200 m while registered as a Professional |

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|       |   |     |   | Engineer/Technologist and which have been successfully commissioned.  2 = Two (2) designs in accordance with ASME B31.1 or B31.3 for a piping system and which have been successfully commissioned.  0 = No experience or inadequate information supplied.   |
|-------|---|-----|---|--|
| 5.2.5 | Experience of Engineer responsible the nitrogen system flow analysis  | 5 % | Description for each of the flow analyses which includes the following:  Software package used. Fluid Maximum flowrate. Node diagram. Results (can be indicated on the flow diagram) ECSA registration number. Site Customer. Date. | 5 = Flow analyses for five (5) different systems system conveying a gas at a flowrate of at least x Nm3/hr with three delivery point while registered as professional Engineer/Technologist.  4 = Flow analyses for two different systems system conveying a gas at a flowrate of at least x Nm3/hr with three delivery point while registered as professional Engineer/Technologist.  2 = Flow analyses for two different systems system conveying a gas at a flowrate of at least x Nm3/hr.  0 = No experience or inadequate information supplied. |
| 5.2.6 | Company experience in the design installation and commissioning of the deluge fire protection system in accordance with NFPA 15 | 10% | Description of each of the deluge fire protection system which includes the following:  • Flowrate.  • Discharge pressure  • Site  • Customer.  • Commissioning date.   | 5 = five (5) deluge fire protection systems in accordance with NFPA 15 with a flowrate of 1000 l/min.  4 = two (2) deluge fire protection systems in accordance with NFPA 15 with a flowrate of 1000 l/min.  2 = two (2) deluge fire protection systems in accordance with NFPA 15.  0 = No experience or inadequate information supplied.   |

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# 5.3 CONTROL AND INSTRUMENTATION EVALUATION CRITERIA (25%)

| No    | Description  | Weighting | Sub-<br>weighting | Tender Returnable(s)   | Scoring Criteria  |
|-------|--|-----------|-------------------|--|---|
| 5.3   | Control and Instrumentation Evaluation Criteria  | 25%       |                   |  |   |
| 5.3.1 | The bidder shall provide a typical network architecture diagram clearly illustrating the integration between the N2/H2 PLC system and third-party SCADA/DCS platforms. |           | 30                | The diagram must include:  • Identification of all major components (PLCs, SCADA/DCS systems, gateways, I/O modules, etc.) | 5 - Comprehensive and professionally presented drawing. Clearly illustrates all major components, communication protocols (Profibus/Modbus), and interface points. Demonstrates strong understanding and experience in PLC to |

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|       |  |    | Communication protocols used (e.g., Profibus, Modbus)     Interface points and data flow paths  This drawing must reflect the bidder's understanding and experience in implementing such integrations and serve as evidence of technical capability.                  | SCADA/DCS integration.  4 - Drawing is clear and relevant, showing appropriate interfacing between PLC and SCADA/DCS systems. Protocols (Profibus/Modbus) are identified, and major components are included, but some technical depth or completeness is missing.  2 - Drawing submitted but lacks clarity, detail, or relevance. Limited indication of protocol usage (Profibus/Modbus) and poor representation of interfacing between PLC and third-party systems.  0 - No network architecture drawing submitted, or submission is irrelevant/incomplete and does not demonstrate any understanding of PLC. |
|-------|--|----|---|--|
|       |  |    |   | and does not   |
| 5.3.2 | Professional Registered C&I/Electronics Technologist/ Engineer with a track record of 5 completed projects and 5 years professional working experience as a minimum; for design, construction, and commissioning of PLCs and HMI/DCS/SCADA system. | 30 | 1. Copy of qualifications (Certificates) and copy ECSA Certificate (Pr Eng/ Pr Technologist)  2. CV with reference to 5 completed projects and 5 years professional working experience for design, construction, and commissioning of PLCs and HMI/DCS/SCADA systems. | 5 — Proof of qualification submitted. CV submitted and does meet the minimum requirements and required minimum experience in control and instrumentation project(s) on: Integration of PLC to SCADA/HMI/DCS. 5 or more than 5 years' experience. Professional registration)  |

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|       |   |    |   | 4 – Proof of qualification submitted.  |
|-------|---|----|---|--|
|       |   |    |   | CV submitted and does meet the minimum requirements and required minimum experience in control and instrumentation project(s) on: PLC and SCADA/HMI/DCS integration design and commissioning. More than 3 less than 5 years. ECSA Candidate (or Professional registration) |
|       |   |    |   | 2 – CV does meet the minimum requirements but not enough experience. Less than 3 years relevant experience, CV submitted and proof of qualification. ECSA candidate.   |
|       |   |    |   | 0 – CV does not conform to the tender requirements.  |
|       |   |    |   | CV not submitted, no proof of qualification submitted. Not an ECSA   |
|       |   |    |   | Candidate  |
| 5.3.3 | Extensive experience in integrating PLC's with third-party control systems/DCS/SCADA systems using Profibus or Modbus industrial communication protocols. | 20 | Signed completion certificates or signed reference letters showing the following information:  1. Detailed scope/project description of the project which included the integration of PLCs to | 5 - Successfully completed more than 3 projects involving the integration of PLCs with third-party DCS/SCADA systems via Profibus or Modbus.   |

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|       |   |    | other third-party control systems/DCS/SCADA.  2. Contactable references from engineering managers or project leads who oversaw the integration work.  3, Completion date of the works   | 4 - Successfully completed 2 to 3 projects involving the integration of PLCs with third-party DCS/SCADA systems via Profibus or Modbus.  2 - Successfully completed 1 project involving the integration of PLCs with third-party DCS/SCADA systems via Profibus or Modbus.  0 - TOTALLY DEFICIENT OR NON-RESPONSIVE  |
|-------|---|----|---|--|
| 5.3.4 | CBMS Engineer: Minimum B.Eng. /B.Sc. Eng. / B.Tech in Electrical/ Electronic Engineering. Candidate ECSA Registration. Professional Registration is an advantage.  3-5yrs experience in control and instrumentation project(s) on: Building Management Systems (i.e. CCTV, Biometric Access Control, CBMS). | 20 | <ol> <li>CV with relevant experience and tracible references</li> <li>Proof of Qualifications.</li> <li>Professional Registration. (ECSA registration number or Certificate)</li> </ol> | 5 — Proof of qualification submitted. CV submitted and does meet the minimum requirements and required minimum experience of Building management systems. 5 or more than 5years experience. Professionally registered)  4 - Proof of qualification submitted. CV submitted and does meet the minimum requirements and required minimum experience of Building management systems. More than 3 less than 5 years. ECSA Candidate (or Professional registration) |
|       |   |    |   | 2 - CV does meet the minimum requirements  |

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|  | but not enough experience. Less than 3 years relevant experience, CV submitted and proof of  |
|--|--|
|  | qualification. ECSA candidate  |
|  | 0 - CV does not conform to the tender  |
|  | requirements.  CV not submitted; no proof of qualification submitted. Not an ECSA Candidate. |

# **5.4 ELECTRICAL EVALUATION CRITERIA (10%)**

| No        | Description  | Weighting | Sub-<br>weighti<br>ng | Tender<br>Returnable(<br>s)   | Scoring<br>Criteria   |
|-----------|--|-----------|-----------------------|---|---|
| 5.3       | Electrical Evaluation Criteria                                       | 10%       |                       |   |   |
| 5.4.      | Nitrogen Plant Power distribution board design review and evaluation |           | 30%                   | Updated or proposed power distribution board design or Single line for the supply of H2 and N2 plant in both including estimated power consumption in editable format and PDF | 5 = 100% = COMPLIANT  Meet technical requirement(s) /AND  No foreseen technical risk(s) in meeting technical requirements.  4 = 80% = COMPLIANT WITH ASSOCIATED QUALIFICATI |
| 5.4.<br>2 | Completed technical schedule A&B LV switchgear (MCC)                 |           | 30%                   | Completed technical   | ONS   |

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|      |   |     | schedule A&B for LV switchgear (MCC). Example of cable sizes to be used in the plant and for what equipment.  | Meet technical requirement(s) with;  Acceptable technical risk(s) AND/OR;  Acceptable exceptions AND/OR;  |
|------|---|-----|---|---|
| 5.4. | Method statement for manufacture, design, delivery and installation of all electrical equipment | 40% | The method statement should contain the following:  a) Typical Quality control plans (e.g. Inspection and Test Plans for electrical distribution board, cables, earthing, small power and lighting, IP rating certificatio n for outdoor installation s etc.) | 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 |

# **5.5 CIVIL EVALUATION CRITERIA (15%)**

| No    | Description  | Weig<br>hting | Sub-<br>weighti<br>ng | Tender<br>Returnable(s)                           | Scoring Criteria                |
|-------|--|---------------|-----------------------|---|---------------------------------|
| 5.5   | Civil Evaluation Criteria  | 15%           |                       |   |                                 |
| 5.5.1 | Company Background and experience in Design and Construction similar to the civil and structural works outlined in the SoW |               | 40%                   | Refer to detailed<br>APPENDIX B and<br>SoW        | Refer to detailed APPENDIX B    |
| 5.5.2 | CV of lead civil and structural ECSA registered professional engineer (Pr.Eng)   |               | 30%                   | Refer to detailed<br><b>APPENDIX B</b> and<br>SoW | Refer to detailed<br>APPENDIX B |
| 5.5.3 | High level Design methodology  |               | 15%                   | Refer to detailed<br><b>APPENDIX B</b> and<br>SoW | Refer to detailed<br>APPENDIX B |

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| 5.5.4 | High level Construction methodology |  | 15% | Refer to detailed<br><b>APPENDIX B</b> and<br>SoW | Refer to detailed APPENDIX B |
|-------|-------------------------------------|--|-----|---|------------------------------|
|-------|-------------------------------------|--|-----|---|------------------------------|

# **5.6 CONFIGURATION EVALUATION CRITERIA (10%)**

| No    | Description  | Weighting | Sub-<br>weighting | Tender<br>Returnable(s)  | Scoring Criteria  |
|-------|--|-----------|-------------------|--|---|
| 5.6   | Configuration and Document Management Evaluation Criteria  | 25%       |                   |  |   |
| 5.6.1 | The contractor needs to provide the configuration management plan that will be implemented in line with the ISO 10007 Guidelines for Configuration Management.   |           | 25%               | Provide Configuration<br>Management  | 5 = 100% = COMPLIANT  Meet technical requirement(s)/AND  No foreseen technical risk(s) in meeting   |
| 5.6.2 | The contractor must provide a portfolio of evidence that reflects quality of coding. The contractor's portfolio should contain a minimum of 3 years but not limited to evidence stating the number of years of experience they have with regards to coding.  If a contractor feels they do not meet the minimum requirements, they can submit the portfolio of the sub-  contractor that they will definitely use. |           | 25%               | Provide Portfolio of evidence reflecting number of years of Plant Codification experience. | technical requirements.  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 exceptions AND/OR;  Unacceptable conditions.  0 = 0% = TOTALLY DEFICIENT OR NON- RESPONSIVE |
| 5.6.3 | The contractor needs to provide a stipulated Handover Plan, stating when and how they plan, submitting Documentation to Eskom, in line to the agreed Vendor Document Submission Schedule (VDSS).   |           | 50%               | Provide VDSS   |   |

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| (Documentation<br>submission during project<br>phases) |  |  |
|--|--|--|
|  |  |  |

# 6. TET MEMBER RESPONSIBILITIES

**Table 6: TET Member Responsibilities** 

| Mandatory<br>Criteria | TET<br>1 | TET<br>2 | TET<br>3 | TET<br>4 | TET<br>5 | TET<br>6 | TET<br>7 | TET<br>8 | TET<br>9 | TET 10 |
|-----------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|--------|
| Number                |          |          |          |          |          |          |          |          |          |        |
| 5 (a)                 | Х        |          |          |          |          |          |          | X        | Х        |        |
| 5 (b)                 |          |          |          |          |          | Х        | Х        |          |          |        |
| Qualitative           | TET      | TET 10 |
| Criteria<br>Number    | 1        | 2        | 3        | 4        | 5        | 6        | 7        | 8        | 9        |        |
| 5.1 General           | Х        | Х        | Х        | Х        | Х        |          |          | Х        | Х        | Х      |
| 5.2<br>Mechanical     | Х        |          |          |          |          |          |          | Х        | Х        | Х      |
| 5.3 C&I               |          | Х        | Х        |          |          |          |          |          |          |        |
| 5.4 Electrical        |          |          |          | Х        | Х        |          |          |          |          |        |
| 5.5 Civil             |          |          |          |          |          | Х        | Х        |          |          |        |
| 5.6 Config            | Х        | Х        |          |          |          |          |          |          |          |        |

# 7. FORESEEN ACCEPTABLE / UNACCEPTABLE QUALIFICATIONS

#### **7.1 RISKS**

**Table 7: Acceptable Technical Risks** 

| Risk | Description   |
|------|---|
| 1.   | Alternative solutions with the same or better performance |

# **Table 8: Unacceptable Technical Risks**

| Risk | Description  |
|------|--|
| 1.   | Exclusions of scope specified in the employer's requirements   |
| 2.   | Unclear staff organogram. i.e. the staffing plan is weak not showing clarity in allocation of tasks and responsibilities |
| 3.   | Exclusion of a project specific schedule   |
| 4.   | Exclusion of the pricing/quotation of the manufacturing of the Vessels   |

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#### 7.2 EXCEPTIONS / CONDITIONS

**Table 9: Acceptable Technical Exceptions / Conditions** 

| Risk | Description                                    |
|------|--|
| 1.   | Accept deviation with technical qualifications |

# **Table 10: Unacceptable Technical Exceptions / Conditions**

| Risk | Description   |
|------|---|
| 1.   | Deviation without technical qualifications not accepted |

#### 8. AUTHORISATION

This document has been seen and accepted by:

| Name & Surname       | Designation                                | —Signature        |
|----------------------|--|-------------------|
| Morapeli Matjoi      | Low Pressure Services LDE                  | A dioi            |
| Jan Strydom          | Low Pressure Services Senior<br>Engineer   | <u>4a Strydom</u> |
| Mdu Shozi            | Control and Instrumentation LDE            |                   |
| Mandla Patrick Nkosi | Configuration and C&I Engineer             | <b>O</b> lasi     |
| Banele Mbendane      | Electrical LDE                             |                   |
| Tshilidzi Bruwer     | Electrical Senior Engineer                 | Ther              |
| Justin Padiachy      | Civil and Structural Engineer              | D-                |
| Willie Beetge        | Civil and Structural Chief<br>Technologist | Meet              |
| Mahlatse Bosega      | Chemical LDE                               | Hloroga           |
| Zak Jiyane           | Engineering Design Work Lead               |                   |

#### **8.1 DISTRIBUTION ONLY**

This document is to be send for distribution and information only to the following:

| Name & Surname    | Designation                     |
|-------------------|---------------------------------|
| Vivagen Govender  | Medupi NEC Project Manager      |
| Mannie Van Staden | Electrical Corporate Specialist |
| Luthando Sizani   | Quantity Surveyor               |
| Liyanda Mjingwana | Medupi NEC Projects             |

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| Name & Surname   | Designation                        |
|------------------|------------------------------------|
| Gabriel Mavhungu | Medupi NEC Employer Representative |

#### 9. REVISIONS

| Date              | Rev. | Compiler            | Remarks      |
|-------------------|------|---------------------|--------------|
| September<br>2025 | 1    | M. Molabe/Z. Jiyane | First Draft. |

#### 10. DEVELOPMENT TEAM

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

- Mdu Shozi
- Mandla Patrick Nkosi
- Banele Mbendane
- Justin Padiachy
- Willie Beetge

# 11. ACKNOWLEDGEMENTS

Insert text here.

#### 12. APPENDIX

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#### 12.1 APPENDIX A: COMPETENCY DECLARATION FORM

#### **COMPETENCY DECLARATION FORM**

Medupi Hydrogen and Nitrogen Plant Technical Specification and Scope of Work (348-1012337)

12.1.1 Declaration as a competent person in terms of Regulation A19 of the National Building Regulations and Building Standards Act, 1977 (Act No. 103 of 1977)

Consideration as a Competent Person in terms of Regulation A19

# Section 1: Nature of the project

**Nature of the project:** Ensuring design intent is achieved and professional certification of existing and new constructed works, changes and additions to works as defined by the scope of work.

12.1.2 <u>Section 2: Details of competent registered professional who will perform the duties of designer for the works</u>

| <b>~</b> 3. | stration council:   |           |
|-------------|---|-----------|
|             |   |           |
| rof         | essional registration number:   |           |
| nse         | ert number and ECSA)  |           |
| 2.1.        | 1 Consultancy I am representing:  |           |
|             |   |           |
| will        | be performing the role/s of   |           |
|             | Role as per mandatory criteria (4(1)  | ]         |
| 1           | Structural Design Engineer  |           |
| 2           | Civil Services Design Engineer  |           |
| Tick        | the relevant box to confirm professional accountability and role to be extered professional to complete a separate declaration form (APPENDIX | erformed. |
|             |   |           |

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| Telephone | number: |
|-----------|---------|
|           |         |

#### **Declare that:**

- 1. I fully understand the complete scope of work as defined in the SoW document No. 348- 1012337.
- I am trained, educated and experienced to undertake the rational design/assessment/investigations and associated construction monitoring of the works defined in the SoW.
- 3. I have the necessary competency and contextual knowledge to perform the professional services as defined in the SoW:
  - Assessment/analysis of constructed buildings/structures/systems
  - Perform testing/investigation/assessment to assess if design intent had been achieved during construction on already constructed works as defined in the SoW.
  - Conduct risk assessments and provide risk mitigation measure for works where applicable as defined in the SoW.
  - Ensure design intent is achieved on works to be constructed as indicated in the SoW.
- 4. I satisfied the necessary and relevant definition of competent person contained in SANS 10400, Construction Regulations and Engineering Council of South Africa.
- 5. My professional registration is current and not suspended or terminated and is appropriate in relation to the services as defined by the scope of work.
- 6. I am intending to provide professional services as designer of the works defined in the scope of work.
- I shall provide my professional services as designer with associated duties as indicated in the Construction Regulations and in accordance with ECSA Code of Conduct.
- 8. All the information provide is to the best of my knowledge true and correct.

| Signature of registered competent professional: |  |  |  |  |  |  |  |  |
|---|--|--|--|--|--|--|--|--|
|   |  |  |  |  |  |  |  |  |
| Date:   |  |  |  |  |  |  |  |  |

**NOTE:** ALL SECTIONS OF THE DOCUMENT MUST BE COMPLETED IN FULL. NO SECTION/PART CAN BE MARKED "N/A" AND THIS DECLARATION FORM MUST BE SIGNED BY THE RELEVANT PROFESSIONAL CONFIRMED FOR THIS PROJECT.

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12.2 APPENDIX B: CIVIL SCORE CRITERIA AND BREAKDOWN

| Qualitative Technical Criteria Description |            | Qualitative Technical Criteria Description  | Tender Returnable required from Tenderer  | Reference to<br>Functional<br>Specification / | Criteria<br>Weighting | Criteria Sub<br>Weighting | 0  | 2   | 4   | 5  |
|--|------------|---|---|---|-----------------------|---------------------------|--|---|---|--|
|  |            |   |   | Tender<br>Returnable                          | (%)                   | (%)                       | TOTALLY DEFICIENT OR NON-<br>RESPONSIVE  | NON-COMPLIANT   | COMPLIANT WITH ASSOCIATED QUALIFICATIONS  | COMPLIANT  |
| APPEN                                      |            | l Structural Criteria   |   |   |                       |                           |  |   |   |  |
| 5.5  | Civii diic | Company Background and experience in Design and Construction similar to the civil and   |   |   | 15%                   |                           |  |   |   |  |
| 5.5.1                                      |            | structural works outlined in the SoW:   |   |   |                       | 40%                       |  |   |   |  |
|  | 5.5.1.1    | Reference 1 Provide a minimum of 3 Testimonial certificates or Completion Certificates for previous and similar works successfully completed.  Note: In the case of a Sub-contractor company performing works, evidence/contactable references can be aligned to the Sub-Contractor company.  | 1.Provide Testimonial certificates or Completion Certificates for at least 3 completed projects similar in complexity to this project and SoW (348-9975757).  The testimonial certificates or completion certificates must (as a minimum) consist of the following aspects information: a)Name of company where project was executed b)Project Description c)Construction period d)Verifiable reference (Contact person)  Important Note 1: Appointment letters will not be considered.  Important Note 2: If item b, c and d is not indicated on the testimonial certificate or completion certificates, the Tender shall provide the information as an attachment to the testimonial certificate or completion certificate.  Important Note 3: If the project description is not provided or not comparable to the SoW (348-9975757), the testimonial or completion certificate will not be considered. | Refer to SoW                                  |                       | 10,00%                    | No Contactable reference/ No<br>projects/No Testimonial<br>Certificate/No Completion Certificate<br>provided / Non responsive                            | Contactable Reference/Project 1/<br>Testimonial Certificate/Completion<br>Certificate provided but not<br>aligned/similar to project (i.e. Project<br>description)    | Contactable Reference/Project 1/<br>Testimonial Certificate/Completion<br>Certificate provided but only one<br>aspect covered and similar to project                                      | Contactable Reference/Project 1/<br>Testimonial Certificate/Completion<br>Certificate provided and more than<br>one aspect covered and similar to<br>project         |
|  | 5.5.1.2    | Reference 2 Provide a minimum of 3 Testimonial certificates or Completion Certificates for previous and similar works successfully completed.  Note: In the case of a Sub-contractor company performing works, evidence/contactable references can be aligned to the Sub-Contractor company.  |   |   |                       | 10,00%                    | No Contactable reference/ No<br>projects/No Testimonial<br>Certificate/No Completion Certificate<br>provided / Non responsive                            | Contactable Reference/Project 2/<br>Testimonial Certificate/Completion<br>Certificate provided but not<br>aligned/similar to project(i.e. Project<br>description)     | Contactable Reference/Project 2/<br>Testimonial Certificate/Completion<br>Certificate provided but only one<br>aspect covered and similar to project                                      | Contactable Reference/Project 2/<br>Testimonial Certificate/Completion<br>Certificate provided and more than<br>one aspect covered and similar to<br>project         |
|  | 5.5.1.3    | Reference 3 Provide a minimum of 3 Testimonial certificates or Completion Certificates for previous and similar works successfully completed.  Note: In the case of a Sub-contractor company performing works, evidence/contactable references can be aligned to the Sub-Contractor company.  |   | 348-1012337                                   |                       | 10,00%                    | No Contactable reference/ No<br>projects/No Testimonial<br>Certificate/No Completion Certificate<br>provided / Non responsive                            | Contactable Reference/Project 3/<br>Testimonial Certificate/Completion<br>Certificate provided but not<br>aligned/similar to project(i.e. Project<br>description)     | Contactable Reference/Project 3/<br>Testimonial Certificate/Completion<br>Certificate provided but only one<br>aspect covered and similar to project                                      | Contactable Reference/Project 3/<br>Testimonial Certificate/ Certificate<br>provided and more than one aspec<br>covered and similar to project                       |
|  | 5.5.1.4    | Reference 4 or more Provide a minimum of 3 Testimonial certificates or Completion Certificates for previous and similar works successfully completed. Note: In the case of a Sub-contractor company performing works, evidence/contactable references can be aligned to the Sub-Contractor company.                                     |   |   |                       | 10,00%                    | No Contactable reference/ No<br>projects/No Testimonial<br>Certificate/No Completion Certificate<br>provided / Non responsive                            | Contactable Reference/Project 4/ Testimonial Certificate/Completion Certificate provided but not aligned/similar to project(i.e. Project description)                 | Contactable Reference/Project 4/ Testimonial Certificate/Completion Certificate or more provided but only one aspect covered and similar to project                                       | Contactable Reference/Project 4/<br>Testimonial Certificate/Completion<br>Certificate or more provided and<br>more than one aspect covered and<br>similar to project |
| 5.5.2                                      |            | CV of lead civil and structural ECSA registered professional engineer   |   |   |                       | 30%                       |  |   |   |  |
|  | 5.5.2.1    | CV of Lead Civil and Structural Designer (Pr. Eng)  | level for this project:  a)Submit CV of professionally registered lead civil and structural designer. professional shall have a minimum of 5 years post ECSA registration relevates design and construction monitoring experience with reference to works described in the scope of work (348-9975757).  Important Note 1: The number of years of experience (relevant to this proas indicated above must be clearly indicated in the CV.  Important Note 2: Based on experience and competency, one individual in fulfil multiple roles. This must be clearly defined in the organogram and the same person submitted per mandatory criteria.  | Refer to SoW<br>348-1012337                   |                       | 30%                       | No CV submitted /Non Responsive/<br>Person is not part of the Company<br>organogram/ Sub Contracted<br>Designer is not part of the Company<br>Organogram | CV with proof of less than 5 yrs.<br>relevant experience. And copies of<br>professional registration certificates<br>and ECSA number contained in CV or<br>submission | CV with proof of more than 5 and<br>less then 10 yrs. relevant experience.<br>And copies of professional<br>registration certificates and ECSA<br>number contained in CV or<br>submission | CV with proof of 10 or more yrs.<br>relevant experience. And copies of<br>professional registration certificates<br>and ECSA number contained in CV or<br>submission |
| 5.5.3                                      |            | High level Design methodology   |   |   |                       | 15%                       |  |   |   |  |
|  | 5.5.3.1    | Requirement 1 for method statement:  Existing works: High level design methodology (covering as a minimum the needed investigation, compliance testing, analysis and reporting) establishing whether design intent was achieved for existing works  |   |   |                       | 6%                        | No proposal/<br>methodology provided or Irrelevant<br>methodology provided.  | Design criteria provided but not applicable to project [relevant information]   | Some aspects of Design criteria provided and applicable to this project[relevant information]   | All aspects of Design criteria<br>provided and applicable to this<br>project [relevant information]  |
|  | 5.5.3.2    | Requirement 2 for method statement:  New Designs: High level design methodology that addresses the design philosophy for new works and all integrated works (covering as a minimum the needed integration with existing designs/infrastructure/services, geotechnical assessment, protective measures and investigative/testing works). |   | Refer to SoW<br>348-1012337                   |                       | 6%                        | No proposal/<br>methodology provided or Irrelevant<br>methodology provided.  | Design criteria provided but not applicable to project [relevant information]   | Some aspects of Design criteria provided and applicable to this project[relevant information]   | All aspects of Design criteria<br>provided and applicable to this<br>project [relevant information]  |
|  | 5.5.3.3    | Requirement 3 for method statement:  Monitoring: Indication of construction monitoring measures to ensure design intent is achieved through progressive reviews and monitoring during the entire project (in accordance with the SoW and Construction Regulations).   |   |   |                       | 3%                        | No proposal/<br>methodology provided or Irrelevant<br>methodology provided.  | Monitoring criteria provided but not applicable to project [relevant information]   | Some aspects of Monitoring criteria provided and applicable to this project [relevant information]  | All aspects of Monitoring criteria provided and applicable to this project [relevant information]  |
| 5.5.4                                      |            | High level Construction methodology   |   |   |                       | 15%                       |  |   |   |  |
|  | 5.5.4.1    | Requirement 1 for method statement  Construction methodology encompassing new works and the integrating of existing works.  | 1. Provide a high level construction methodology that addresses the following:     a) Construction methodology encompassing new works and the integrating of  |   |                       | 10%                       | No proposal/<br>methodology provided or Irrelevant<br>methodology provided.  | Construction criteria provided but<br>not applicable to project [relevant<br>information]   | Some aspects of Construction criteria provided and applicable to this project[relevant information]   | All aspects of Construction criteria<br>provided and applicable to this<br>project [relevant information]  |
|  | 5.5.4.2    | Requirement 2 for method statement Provide a typical/sample Inspection Test Plan (ITP)/Quality Control Plan (QCP) for the construction works.   | existing works.  b)Provide a typical/sample Inspection Test Plan (ITP)/Quality Control Plan (QCP) for the construction works.  c)Quality Control and Quality Assurance Plan aligned to the scope of works for this project  | Refer to SoW<br>348-1012337                   |                       | 2,5%                      | No proposal/<br>methodology provided or Irrelevant<br>methodology provided.  | ITP/QCP criteria provided but not<br>applicable to project [relevant<br>information]  | ITP/QCP criteria provided and applicable to this project[relevant information]  | All aspects of ITP/QCP criteria provided and applicable to this project [relevant information]   |
|  | 5.5.4.3    | Requirement 3 for method statement Quality Control and Quality Assurance Plan aligned to the scope of works for this project  |   |   |                       | 2,5%                      | No proposal/<br>methodology provided or Irrelevant<br>methodology provided.  | QC and QA plan criteria provided but<br>not applicable to project [relevant<br>information]   | Some aspects of QC and QA plan<br>criteria provided and applicable to<br>this project[relevant information]   | All aspects of QC and QA plan criteri<br>provided and applicable to this<br>project [relevant information]   |