

	Scope of Work	Medupi Power Station
---	----------------------	-----------------------------

Title: **Specifications for Delivery Partner Services for Medupi Power Station Flue Gas Desulfurisation Retrofit Project** Document Identifier: **348-10015974**

Alternative Reference Number: **Not Applicable**

Area of Applicability: **Medupi Power Station Project**

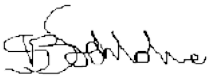
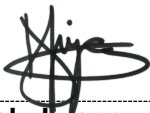


Functional Area: **Project Engineering**

Revision: **5**

Total Pages: **67**

Next Review Date: **Not Applicable**

Disclosure Classification: **Controlled Disclosure**

Compiler	Supported by	Functional Responsibility	Authorized by
			
Selometsi Sehloho	Zak Jiyane	Rofhiwa Nemutandani	Thabisile Biyela
Process Engineer	Engineering Design Work Lead	Engineering Manager	Senior Manager Project Portfolio Delivery
Medupi Power Station Project	Medupi Power Station Project	Medupi Power Station Project	Medupi Power Station Project
Date: 2025/07/10	Date: 2025-07-10	Date: 2025/07/10	Date: 2025/07/10

Content

	Page
1. Introduction.....	5
2. Supporting Clauses	7
2.1 Scope.....	7
2.1.1 Purpose.....	7
2.1.2 Applicability	7
2.1.3 Effective date.....	8
2.2 Normative/Informative References	8
2.2.1 Normative.....	8
2.2.2 Informative.....	9
2.3 Definitions	9
2.4 Abbreviations	11
2.5 Roles and Responsibilities	13
2.5.1 Employer's roles and responsibilities.....	13
2.5.2 Delivery Partner's roles and responsibilities.....	13
2.5.3 FIDIC Engineer's roles and responsibilities	14
2.6 Process for Monitoring.....	14
2.6.1 GOVERNANCE	14
2.7 Related/Supporting Documents.....	17
3. Scope of Work for the Delivery Partner.....	17
3.1 Introduction	17
3.2 Phase 1: DP ONBOARDING AND INITIAL ACTIVITIES	18
3.2.1 PRIME ACTIVITY1 Tasks: Project Management.....	18
3.2.2 PRIME ACTIVITY2 Tasks: Engineering Services	19
3.2.3 PRIME ACTIVITY3 Tasks: Procurement and Commercial.....	20
3.2.4 Phase 1 Deliverables.....	20
3.3 Phase 2: EPC PROCUREMENT PROCESS.....	21
3.3.1 PRIME ACTIVITY1 Tasks: Project Management.....	21
3.3.2 PRIME ACTIVITY2 Tasks: Engineering Services	21
3.3.3 PRIME ACTIVITY3 Tasks: Procurement and Commercial.....	21
3.3.4 Phase 2 Deliverables.....	22
3.4 Phase 3: EPC ONBOARDING AND DESIGN.....	22
3.4.1 PRIME ACTIVITY1 Tasks: Project Management.....	22
3.4.2 PRIME ACTIVITY2 Tasks: Engineering Services	22
3.4.3 PRIME ACTIVITY3 Tasks: Procurement and Commercial.....	22
3.4.4 PRIME ACTIVITY4 Tasks: Construction Management	23
3.4.5 Phase 3 Deliverables.....	23
3.5 Phase 4: EPC DESIGN REVIEW	23
3.5.1 PRIME ACTIVITY1 Tasks: Project Management.....	23
3.5.2 PRIME ACTIVITY2 Tasks: Engineering Services	24
3.5.3 PRIME ACTIVITY3 Tasks: Procurement and Commercial.....	24
3.5.4 PRIME ACTIVITY4 Tasks: Construction Management	25

CONTROLLED DISCLOSURE

3.5.5	PRIME ACTIVITY5 Tasks FIDIC Engineer:	25
3.5.6	Phase 4 Deliverables.....	25
3.6	Phase 5: MANUFACTURING AND FABRICATION	25
3.6.1	PRIME ACTIVITY1 Tasks: Project Management	25
3.6.2	PRIME ACTIVITY2 Tasks: Engineering Services	26
3.6.3	PRIME ACTIVITY3 Tasks: Procurement and Commercial	27
3.6.4	PRIME ACTIVITY5: Tasks FIDIC Engineer	27
3.6.5	Phase 5 Deliverables.....	27
3.7	Phase 6: CONSTRUCTION AND INSTALLATION	27
3.7.1	PRIME ACTIVITY1 Tasks: Project Management	27
3.7.2	PRIME ACTIVITY2 Tasks: Engineering Services	28
3.7.3	PRIME ACTIVITY3 Tasks: Procurement and Commercial	29
3.7.4	PRIME ACTIVITY4 Tasks: Construction Management	29
3.7.5	PRIME ACTIVITY5 Tasks FIDIC Engineer:	29
3.7.6	Phase 6 Deliverables.....	29
3.8	Phase 7: COMMISSIONING AND TESTING	30
3.8.1	PRIME ACTIVITY1 Tasks: Project Management	30
3.8.2	PRIME ACTIVITY2 Tasks: Engineering Services	30
3.8.3	PRIME ACTIVITY3 Tasks: Procurement and Commercial	31
3.8.4	PRIME ACTIVITY4 Tasks: Construction Management	31
3.8.5	PRIME ACTIVITY5 Tasks FIDIC Engineer:	31
3.8.6	Phase 7 Deliverables.....	32
3.9	Phase 8: HANDOVER AND CLOSEOUT	32
3.9.1	PRIME ACTIVITY1 Tasks: Project Management	32
3.9.2	PRIME ACTIVITY2 Tasks: Engineering Services	32
3.9.3	PRIME ACTIVITY3 Tasks: Procurement and Commercial	33
3.9.4	PRIME ACTIVITY4 Tasks: Construction Management	33
3.9.5	PRIME ACTIVITY5: Tasks FIDIC Engineer	33
3.9.6	Phase 8 Deliverables.....	34
3.10	Phase 9: POST COMPLETION	34
3.11	Delivery Partner SKILLS AND competencies.....	34
4.	Transfer of skills to Employer (Eskom)	35
4.1	GENERAL TRAINING	35
4.2	UPFRONT TRAINING	35
4.3	ON JOB TRAINING	35
4.4	OPERATOR AND MAINTENANCE TRAINING.....	36
4.5	ENGINEERING TRAINING.....	36
4.6	CERTIFICATION OF EMPLOYER STAFF COMPETENCE	36
4.7	PARTICIPATION OF EMPLOYER STAFF	36
5.	Acceptance.....	37
6.	Revisions	38
7.	Development Team	38
8.	Acknowledgements	38

CONTROLLED DISCLOSURE

Appendix A – DELIVERY PARTNER SKILLS, RESOURCES AND QUALIFICATIONS.	40
Appendix B – Division of responsibilities between Employer, FIDIC and DP.	60
Appendix C – Overview of Interfaces to the Existing Power Plant.	65

Figures

<i>Figure 1 Model Structure showing interaction between Eskom, DP & EPC</i>	5
<i>Figure 2 Overview of phases for the FGD project</i>	17

CONTROLLED DISCLOSURE

1. Introduction

Eskom's principal generation technology is pulverised coal with approximately 90% of its current generating capacity relying on coal-fired power stations. One such power station is the Medupi Power Station (MPS) situated in Lephalale, Limpopo Province.

Medupi Power Station is earmarked for a Flue Gas Desulfurisation (FGD) retrofit to comply with the South African Minimum Emissions Standards (MES) by 31 March 2030. Medupi Power Station operates under an atmospheric emission license (AEL) issued to provide the Employer with operational conditions to adhere to in terms of the National Air Quality Act 39 of 2004 as amended, Eskom is aiming for a limit of 400 mg/Nm³ (dry, 10% O₂) to ensure continuous performance without contravening the Atmospheric Emission License. The FGD retrofit project addresses these regulatory demands, promoting environmental compliance, public health protection, and sustainable energy production.

The Retrofit Project works will be procured through the appointment of an Engineering, Procurement and Construction (EPC) Contractor under the framework of a FIDIC Yellow Book contract as amended, This Contract is produced by the Employer using elements of the Conditions of Contract for Plant and Design-Build 1999 published by FIDIC. This Contract is produced under license No.134892 from and with the permission of FIDIC. Consequently, no part of this Contract may be copied, translated, stored, reproduced, or distributed in any form except in accordance with the terms of that license. This Contract is not endorsed by FIDIC and FIDIC takes no responsibility for the accuracy, completeness, adequacy or otherwise of this Contract. As part of execution of this project, Eskom as the Employer is seeking a delivery partner (DP) that must come and co-operate with Eskom by leading the EPC contractor as per the Employers requirements under the EPC contract and mitigate risks and opportunities. The DP's role will encompass the Owners Engineer, which is a team of technical expertise required for effective execution and supervision of the project; and act as a FIDIC Engineer (FE). As such, the use of the Owners Engineer's (OE) and Delivery Partner will be synonymous in this document. Refer to *Figure 1* below that shows the various interaction within the Delivery Partner:

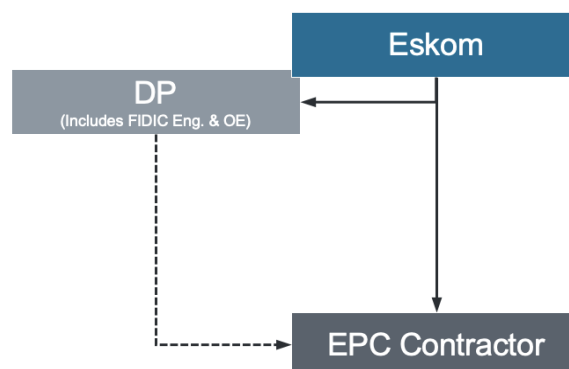


Figure 1 Model Structure showing interaction between Eskom, DP & EPC

CONTROLLED DISCLOSURE

The Delivery Partner will play a dual role, supporting and guiding the Employer in their capacity as the Delivery Partner for the works, and act as the FIDIC Engineer to manage the EPC contract. This will require delivering services across various capacities, utilising a diverse set of professional skills and expertise, as outlined herein.

In terms of the scope of the EPC, the contractor is expected to submit a main tender proposal based on a wet FGD system, specifically the limestone forced oxidation open spray tower configuration. Additionally, the EPC Contractor has the option to submit an alternative tender, which may include a different configuration of wet FGD or an entirely alternative FGD technology.

The Retrofit Project will comprise of the following systems:

- Sorbent and waste handling systems and, environmental systems.
- Reagent preparation systems and dewatering systems.
- Absorbers and auxiliaries.
- Integration with the existing Distributed Control System (DCS).
- Integration with the existing Centralised Building Management System (CBMS).
- Electrical (supply of electrical equipment and integration with existing electrical system).
- Raw water treatment plant, FGD wastewater treatment plant, and FGD Laboratory.
- Site services and facilities.

As such, the DP needs to be fully competent in supporting the delivery of the EPC scope. The services required by the Employer during the FGD Retrofit Project at Medupi Power Station from the Delivery Partner are categorized in the following five sub-areas:

- Project Management Services – to include, inter alia, developing and managing an integrated program scope, schedule, costs and project assurance.
- Engineering Services – to include technical planning and delivering by the Delivery Partner as both an Owners Engineer and an Architect Engineer. Quality services in various areas of technical specialization as included under Engineering services.
- Procurement and Commercial Services – to include procurement services, negotiations, strategy, and commercial services during execution such as legal and contract management.
- Construction Management Services – primarily responsible for integrating the works during manufacturing, construction, commissioning and handover phase.
- FIDIC Engineer – to provide a nominated individual(s) and supporting team who will assume the role of the FIDIC Engineer in line with FIDIC Yellow Book (as amended), once the EPC contractor is appointed.

The Delivery Partner will thus be expected to carry out tasks in the five Prime Activity areas (PA) as outlined below:

- PA 1 Project Management
- PA 2 Engineering Services
- PA 3 Procurement and Commercial support services
- PA 4 Construction Management

CONTROLLED DISCLOSURE

- PA 5 FIDIC Engineer

Recommended activities and functions within each Prime Activity area, aligned with phases of the project, are set out in Section 3. The DP will be integrated within Eskom's operational model, fostering shared ownership of delivery and aligning incentives with project outcomes.

The DP will also be required to transfer skills and mentorship to enable the Employer's personnel to possess similar level of competency upon completion of the project.

2. Supporting Clauses

2.1 Scope

2.1.1 Purpose

The Delivery Partner will co-operate with the Employer in various capacities, providing a comprehensive range of professional expertise and services to ensure the successful execution of the Medupi FGD Retrofit Project. The key responsibilities include:

- Verifying the EPC Contractor's adherence to the technical provisions of the EPC contract, identifying non-compliance, recommending corrective actions, and monitoring their implementation.
- Leading design approvals and engineering design reviews on behalf of the employer.
- Overseeing the construction and erection works to ensure they align with international best practices and meet established quality benchmarks.
- Administering the EPC contract as a FIDIC Engineer and advising the Employer with respect to aspects that, in the Delivery Partner's professional judgment, could jeopardise the successful implementation of the Project.
- Reviewing and monitoring critical aspects of the EPC Contractor's work, including design and engineering, quality assurance (QA) and quality control (QC), manufacturing, factory inspections and factory acceptance tests (FAT), equipment delivery, construction, erection, commissioning and testing, as well as the associated documentation, and general contract administration.

The EPC Contractor retains full liability and responsibility for the design, manufacturing, construction, erection, commissioning and testing of the work required to achieve project completion. This encompasses all aspects of the Works, including civil, mechanical, process/chemical, control and instrumentation (C&I), and electrical works, ensuring compliance with the quality standards, schedule, and budget specified in the EPC Contract.

2.1.2 Applicability

This document shall apply to Medupi Power Station Project.

CONTROLLED DISCLOSURE

2.1.3 Effective date

This document will be effective from the date of authorisation.

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] 240-105658000: Supplier Quality Management Specification
- [2] 240-168966153: Generation Technical Tender Evaluation Procedure
- [3] 240-44682732: Provide Engineering During Commissioning
- [4] 240-44682816: Provide Engineering During Construction
- [5] 240-44682832: Provide Engineering During Manufacturing
- [6] 240-49104627: Engineering Workload and Resource Planning Procedure
- [7] 240-50317699: Manage Technical Queries Procedure
- [8] 240-53113685: Generation Design Review Procedure
- [9] 240-53113706: Procedure for Establishing an Engineering Business Strategy
- [10] 240-53113953: Manage Engineering Accountability Procedure
- [11] 240-53114002: Engineering Change Management Procedure
- [12] 240-53114026: Project Engineering Change Management Procedure
- [13] 240-53114186: Document and Records Management
- [14] 240-53114190: Internal Audit Management
- [15] 240-53114192: Corrective and Preventative Action
- [16] 240-53114193: Occurrence and Incident Management
- [17] 240-53665024: Engineering Quality Manual
- [18] 32-1034: Procurement Procedure
- [19] 32-727: SHEQ Policy and Related Procedures and Processes
- [20] 240-155326818: COVID-19 related Standard (COVID19 Guidelines)
- [21] 240-7041386534: Eskom's Operating Regulations
- [22] Government Regulation No 11128 COVID Health and Safety
- [23] 32-757: Health and safety specifications
- [24] ISO 14000: Environmental Management Systems – Requirements with guidance for use

CONTROLLED DISCLOSURE

- [25] ISO 31000: Risk Management Systems – Principles and guidelines
- [26] ISO 55000: Asset Management Systems – Overview, principles and terminology
- [27] ISO 9000-2015: Quality Management System - Fundamentals and Vocabulary
- [28] ISO 9001: Quality Management System Requirements
- [29] 348-930600: Medupi FGD Quality Specification
- [30] 32-527: The Eskom Code of Ethics

2.2.2 Informative

- [31] 348-9998590: FGD Functional Specification
- [32] Eskom's Project Life Cycle Model (PLCM)

2.3 Definitions

Definition	Explanation
Architect Engineer	When Eskom acts as the Architect Engineer on a project/package/plant/system/asset, the reviewer(s) shall review the design documentation issued by the Design Authority to ensure that: the design satisfies the stakeholder requirements (i.e. validation of design deliverables against stakeholder requirements); the design is integrated by identifying all interfaces with other packages/plant systems/assets and ensuring that these interfaces are catered for; foreseen technical risks are identified and addressed / challenged with the Design Authority; general technical oversight is provided over the design.
Commissioning	The integrated application of a set of engineering techniques and procedures to check, inspect, and test every operational component of the Works, from individual functions such as instruments and equipment to more complex functions such as subsystems and systems.
Competent Engineer/ Technologist	A person presently registered with the Engineering Council of South Africa (where applicable) and equipped with the necessary training and experience for the field and scope of engineering work involved, according to the professional categories identified in Annexure 1 and 2 of The Engineering Profession Act, 2000, (Act No. 46 of 2000).
Delivery Partner	A competent engineering and project management service provider that partners with the Employer in different capacities during the execution of the Project. The Delivery Partner differs

CONTROLLED DISCLOSURE

Definition	Explanation
	from the EPC Contractor. This role is undertaken to protect the Employer's interests during the Project.
Design Authority	When Employer acts as the Design Authority on a project/package/plant/system/asset, the reviewer(s) shall review the design documentation to ensure that: the design satisfies the design requirements; all relevant design standards, procedures and guidelines have been adhered to; the design is suitable and correct (calculations, philosophy, functionality, etc.); best practices were applied; the design is integrated by identifying all interfaces with other packages/plant systems/assets and ensuring that these interfaces are catered for.
Employer's Engineering	The Employer's engineering team that works with the Delivery Partner comprising of lead engineers per relevant discipline, and their system engineers.
EPC Contract	The FIDIC Yellow Book agreement to be entered into between the Employer and the EPC Contractor after the Procurement process for the Works has been completed, for the EPC Contractor to execute the Works.
EPC Contractor	The EPC Contractor is the contractor that must deliver the Works per the terms of the EPC Contract.
FIDIC Engineer	In FIDIC contracts, the Engineer acts as an independent entity who supervises the works on behalf of the authority and recommends payments for the work done. The Engineer's role includes project management and contract administration, ensuring that the project adheres to the contract specifications and timelines.
Owners Engineer	An owner's engineer serves as an independent representative or advocate of the project owner. It is a critical supporting role that provides project management and quality assurance support during all stages of the asset lifecycle
Procurement	The process of establishing and implementing procurement strategies and procedures, including the preparation of necessary documentation, for effective and timeous execution of the project. Acquiring the goods and services supporting the missions of the organization, including the development and maintenance of relationships with suppliers and internal customers.
Project	The Medupi Power Station Flue Gas Desulfurisation (FGD) Retrofit Project.

CONTROLLED DISCLOSURE

Definition	Explanation
Quality Assurance	Quality assurance is about using project processes effectively. It involves following and meeting standards to assure stakeholders that the final product shall meet their needs, expectations, and requirements.
Quality Control	Control Quality is the process of monitoring and recording results of executing the quality management activities to assess performance and ensure the project outputs are complete, correct, and meet customer expectations as set out in the EPC Contract.
Red cards	Ability for the Employer's Senior Managers to step in and override DP or EPC decisions.

2.4 Abbreviations

Abbreviation	Explanation
AEL	Air Emission License
ASME	American Society of Mechanical Engineers
AWS	American Welding Society
BMH	Bulk Materials Handling
BMS	Building Management System
C&I	Control and Instrumentation
CBMS	Centralised Building Management System
CFD	Computational Fluid Dynamics
CM	Configuration Management
DCS	Distributed Control System
DOR	Division of Responsibility
DP	Delivery Partner
ECSA	Engineering Council of South Africa
EDMS	Electronic Documentation Management System
EPC	Engineer, Procure and Construct
FAT	Factory Acceptance Test
FE	FIDIC Engineer
FGD	Flue Gas Desulfurisation
GPR	Ground Penetrating Radar
HAZOP	Hazard and Operability Study
HSE	Health, Safety and Environment

CONTROLLED DISCLOSURE

Abbreviation	Explanation
HVAC	Heating, Ventilation and Air Conditioning
ISO	International Standards Organisation
IT	Information Technology
IWE	International Welding Engineer
KKS	Kraftwerk Kennzeichen System
LDE	Lead Discipline Engineer
LOSS	Limits of Supply and Services
LPS	Low Pressure Services
LV	Low Voltage
MES	Minimum Emissions Standards
MPS	Medupi Power Station
MV	Medium Voltage
N/A	Not Applicable
NACE	National Association of Corrosion Engineers
OE	Owners Engineer
O&M	Operating and Maintenance
OSHAct	Occupational Health and Safety Act
OT	Operational Technology
P&ID	Piping and Instrumentation Diagram
PBS	Plant Breakdown Structure
PEP	Project Execution Plan
PLCM	Project Life Cycle Model
QA	Quality Assurance
QC	Quality Control
RFP	Request for Proposal
SACAP	South African Council for the Architectural Professional
SACNASP	South African Council for Natural Scientific Professionals
SAS	Substation Automation System
SAT	Site Acceptance Test
SHEQ	Safety, Health, Environment and Quality
SO ₂	Sulfur Dioxide
SOW	Scope of Work
SRD	Stakeholder Requirement Definition

CONTROLLED DISCLOSURE

Abbreviation	Explanation
TA	Test after Completion
TO	Test on Completion
TOC	Take Over Certificate
QMS	Quality Management System

2.5 Roles and Responsibilities

2.5.1 Employer's roles and responsibilities

Based on the conditions of contract set out in FIDIC's Yellow Book as amended and included in the EPC tender and as per the licence. This Contract is produced by the Employer using elements of the Conditions of Contract for Plant and Design-Build 1999 published by FIDIC. This Contract is produced under license No.134892 from and with the permission of FIDIC. Consequently, no part of this Contract may be copied, translated, stored, reproduced, or distributed in any form except in accordance with the terms of that license. This Contract is not endorsed by FIDIC and FIDIC takes no responsibility for the accuracy, completeness, adequacy or otherwise of this Contract Eskom is the 'Employer' and has the following set of *key responsibilities*:

- Providing the Employer's requirements: The Employer defines/clarifies the functional and technical requirements of the project, which forms the basis for the EPC Contractor's design and execution.
- Payments: The Employer is responsible for making interim and final payments in accordance with what the FE approves.
- Providing access and approvals: The Employer must ensure timely access to the site and assist in obtaining necessary permits and approvals where required.
- Participating in tests and acceptance: The Employer is involved in inspections, testing, and acceptance of the works as per contract provisions.
- Variations and claims: The Employer has the right to request variations, which are assessed and instructed by the FIDIC Engineer.
- Any other task in line with the FIDIC Contract.

2.5.2 Delivery Partner's roles and responsibilities

The scope of the DP's work includes the following responsibilities, which are described in more detail in later sections:

- Review of the EPC inquiry, preparation of negotiation strategy.
- Perform technical evaluations of tenders, provide technical support to the Employer during negotiations, and assist in finalising the contract, when required.

CONTROLLED DISCLOSURE

- Review the conceptual FGD design as well as the plan to integrate the FGD into the existing power plant – both were prepared by Employer and served as the basis for the Request for Proposal (EPC tender) which is out in the market.
- Review and approval/acceptance of the EPCs final design.
- Provision of project management services to monitor and supervise the EPC contractor over the entire duration of the project.
- Supervision and technical support during manufacturing, fabrication or assembly activities, including performance obligations. This will include, amongst other things, attendance at offsite inspections, review of quality control plans, attending to Factory Acceptance Tests (FAT), etc.
- Supervision and technical support for construction or installation activities, including performance obligations, review of construction plans, construction drawings and site integration meetings.
- Supervision and technical support during commissioning, Tests on Completion activities, Test After Completion (e.g. ensuring plant readiness for testing, including inspections with relevant clearances, validity of test procedures, availability of the units and feed materials, etc.) and issuance of a final report to Employer.
- Provision of technical support and investigations during Defects Notification Period.

2.5.3 FIDIC Engineer's roles and responsibilities

The DP will act as the FIDIC Engineer , with concurrence of the EPC Contractor and therefore, as part of the roles of the FE the following:

- Act as the contract administrator, ensuring compliance with all contractual and statutory obligations.
- Facilitate coordination between the Employer and the EPC Contractor.
- Evaluate and determinations and adjudicate claims and variations.
- Provide reports and recommendations to the Employer regarding project performance and risks.

The DP team will be based at Medupi site.

2.6 Process for Monitoring

2.6.1 GOVERNANCE

There will be several Committees developed to provide governance and oversight for the FGD Project. The DP will agree with Employer the form, terms of reference, and decision-making authority for the committees during the initial phase of the project. The expected committees to be provided include the following:

CONTROLLED DISCLOSURE

2.6.1.1 FGD Steering Committee

The FGD Project will be overseen by an FGD Steering Committee, chaired by an Eskom Group Executive or his/her delegate.

This Committee will be responsible for providing strategic direction to the project, ensuring that the project team is delivering according to the strategic requirements laid down by Employer, and as the final decision-making body on project related issues.

In addition to the Eskom chair, and various other Eskom executives, the Committee will include representatives from the DP and the EPC Contract.

During the initial stages of the project, this committee will sit monthly, however during execution the chair in consultation of the members will decide on the frequency.

2.6.1.2 FGD Project Operational Committee

The Project Committee will manage the project on a regular basis. It will be jointly chaired by the Senior representative from the DP and Eskom, with representatives from Eskom (as the Employer, the FIDIC Engineer team within the DP and the EPC.

The Project Committee will be the main decision-making body for the FGD Project. It will receive project management information from the project controls team within the DP.

It will be responsible for driving best performance across the project, in line with agreed benefits and Key Result Areas (the incentives will be defined at a later stage before Contract finalization).

This committee will sit weekly, however based on the need and urgency, the chair in consultation of the members will decide on the frequency.

2.6.1.3 Engineering Design Review Committee

The Engineering Design Review Committee (DRC) will be responsible for ensuring that the solution design is technically robust, and that engineering risks are identified and mitigated. The DRC also ensures the necessary Eskom Engineering governances are followed such as the Design Review Procedure and Project Engineering Change Management. This committee will be chaired by the Employer and co-chaired by the DP and will have representatives from all Engineering disciplines from both Eskom and DP.

This committee will sit weekly, however based on the need and urgency, the chair in consultation of the members will decide on the frequency.

CONTROLLED DISCLOSURE

2.6.1.4 Change Committee

The Change Committee derives its authority from the FGD Steering Committee. The Change Committee will be the main forum for deciding on changes to the project, this will exclude Engineering and Design changes as these will be addressed by the Engineering Design Review Committee. Clear criteria will be established for change tolerances to cost and schedule that will be permitted and need to be approved. The DP will assist in developing terms of reference for this committee. The DP project manager will chair the Change Committee.

The DP project controls and project management function will provide information on the potential impact of any change to the time and costs.

Eskom (as the Employer) and the EPC will be represented.

Change proposals could come from various sources: EPC contractors (supplier driven change); DP (Project management driven change); or Eskom (Employer driven change) or Third Party (Government and affected parties).

The DP will establish the criteria for what levels change is determined within the project.

The Eskom representative will retain the right to “red card” (i.e. stop) any change decision if the Eskom representative judges the impact to be too severe on one of Eskom’s key benefit areas. The FGD Steering Committee will be the ultimate arbiter.

This committee will sit monthly, however during execution the chair in consultation of the members will decide on the frequency.

2.6.1.5 Procurement Committee

For in-project procurement matters (i.e. not for the strategic procurement of DP or the EPC contractor), a Procurement Committee will be established.

The purpose of the Committee will be to approve significant procurements and contractual obligations entered into by the EPC contractor. The criteria for “significant” will be developed by the DP prior to the EPC contract being awarded and will be agreed as part of the negotiations for onboarding the EPC.

The committee will be chaired by the EPC Contractor, with representation from Eskom (as the Employer), the EPC project control team, and the FIDIC Engineer team.

The Eskom representative will retain a “red card” if the procurements are judged to be at risk of not being fully aligned with the projects overall long-term strategic goals as expressed by the strategic direction provided from the FGD Strategy Board. This should be only in exceptional cases.

The EPC will provide the recommendations for procurement and will be responsible for carrying out the decisions of the Procurement Committee.

The DP commercial and contractual management function will ensure that the procurements are done in accordance with Eskom guidelines and the appropriate regulations.

CONTROLLED DISCLOSURE

This committee will sit monthly, however during execution the chair in consultation of the members will decide on the frequency.

2.7 Related/Supporting Documents

N/A

3. Scope of Work for the Delivery Partner

Section 3 outlines the Scope of Work (SOW) for the Delivery Partners (DP) during the entire Medupi Power Station FGD retrofit project.

3.1 Introduction

The objective of the FGD project is to ensure compliance with the minimum emission standards for SO₂ set out in the National Air Quality Act 39 of 2004. The Works must achieve an SO₂ emissions guarantee limit of 400 mg/Nm³ (dry, 10% O₂).

The purpose of this document is to define the Scope of Work required for the DP to succeed in its role, providing engineering and project management services to the Employer for the proposed engineering, procurement and construction (EPC) FGD retrofit project at Medupi Power Station.

Given the current status of the Medupi FGD, such as; (i) EPC tender already developed and out on tender, (ii) the open technology choice due to main and alternative option, and (iii) the extent of the work completed thus far; the employer envisions the following phase timeline and sequencing.

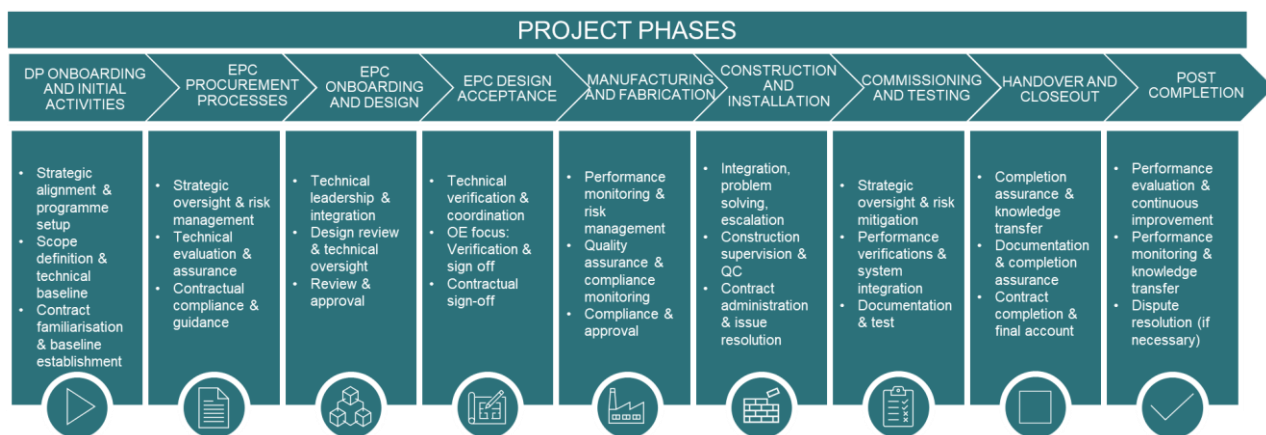


Figure 2 Overview of phases for the FGD project

These phases are subdivided as follows,

- The initial phase will be with DP Onboarding and initial activities, laying the groundwork for all subsequent efforts.
- This is then followed by the EPC procurement process, where EPC contractor is selected.
- EPC onboarding is the next phase and finalizing all the required stakeholders and committees.

CONTROLLED DISCLOSURE

- (iv) EPC commences with design and design acceptance phases ensuring that all technical specifications meet the required standards.
- (v) The project then progresses through to EPC procurement, manufacturing and fabrication.
- (vi) With material arrival on site, this leads into construction and installation of FGD.
- (vii) Upon completion of physical works erection and construction, the focus shifts to commissioning and testing to validate performance.
- (viii) The final stages include handover and closeout, ensuring a smooth transition to operations, and post completion activities, which encompass monitoring and support to guarantee long-term success.
- (ix) Post project completion where the project benefits are assessed to ensure the intent is met and continuous monitoring of the plant performance.

Section 3 provides an overview of the role of the DP in each of the nine phases. Moreover, it refers to other aspects of the DP specification (e.g. resources, skills and competencies).

3.2 Phase 1: DP ONBOARDING AND INITIAL ACTIVITIES

Phase 1 focuses on the onboarding of the DP and the execution of critical initial activities that set the tone for the programme. This stage ensures that all stakeholders are aligned through a shared understanding of strategic objectives and programme setup. It involves clearly defining the project scope and establishing a robust technical baseline to guide future development. Additionally, this phase includes thorough contract familiarisation and the establishment of baseline expectations, ensuring that all parties are equipped with the knowledge and tools necessary to co-operate effectively from the outset.

3.2.1 PRIME ACTIVITY1 Tasks: Project Management

Main Effort: Strategic alignment and programme setup.

- Confirm strategic alignment of project scope and objectives.
- Establish communication and governance framework.
- Set up programme level reporting structures.
- Develop project framework: establish project team and identify framework for configuration management.
- Develop communications strategy.
- Develop draft project governance, including Change Committees, and draft terms of reference for the steering committees, to the extent required, for agreement with the Employer.
- Review Eskom provided Project Execution Plan (PEP), and DP takes ownership of PEP
- Agree on DP incentivisation regime with Eskom based on proposed incentive schedule.

CONTROLLED DISCLOSURE

3.2.2 PRIME ACTIVITY2 Tasks: Engineering Services

Main Effort: Scope definition and technical baseline assessment.

Related to the main FGD technology the DP will, as a minimum:

- Review the current enquiry document/RFP pack for scoping gaps/risk and provide measures to mitigate the identified risks.
- Evaluate existing Medupi site data, documentation, and requirements to identify constraints.
- Assess clarification questions and responses for potential issues. Also review and advise on previous clarification responses that have been issued by the Employer.
- Examine South African legislation and regulatory framework.
- Review bid evaluation criteria.
- Determine requirements of engineering specialists.
- Facilitate translation of stakeholder requirements definition (SRD) into engineering priorities.
- Establish quality control processes and ensure activities align with Eskom governance.
- Confirm methods of acceptance of drawings etc from EPC.
- Issue updates or clarifications to tender documents as needed.
- Develop a negotiation strategy for use with the EPC with a proposed schedule, project scope, and execution plan.
- Assist Eskom in meeting internal governance requirements.

For the alternative technologies, the DP will, amongst other tasks:

- Review existing site data and documentation including design, operational, and maintenance requirements and practices relevant to the FGD design.
- Review South African legislation and regulatory framework.
- Prepare a list of potential FGD technologies that comply with legislative requirements and constraints imposed by the existing plant.
- Examine the current functional specification for general technical requirements, quality control and assurance requirements, performance parameters and requirements, etc., and update/add for alternative commercial FGD technologies.
- Assess current terminal point lists and update/review for alternative commercial FGD technologies.
- Develop a general list of procedures and standards applicable for construction, erection, testing, trial runs, commissioning tests, and commercial operation of the technology.

CONTROLLED DISCLOSURE

- Prepare performance guarantee schedules, including respective rates of liquidated damages for shortfalls in performance guarantees, as well as calculations for determining those values.
- Re-evaluate bid evaluation criteria and update for alternative possible technologies.
- Issue any necessary clarification, scope extension, refined evaluation criteria, or updates to the tender documents.
- Respond to clarification questions on alternative technologies.
- Develop a negotiation strategy that includes at minimum proposed schedule, project scope, project/technology cost, and execution plan.
- Support Eskom with its governance requirements.

3.2.3 PRIME ACTIVITY3 Tasks: Procurement and Commercial

Main Effort: Prepare EPC tender selection process

- Review of contract documents for EPC.
- Develop criteria for evaluation of tender applicants.
- Commercial evaluation – criteria for assessing supplier ability to meet the commercial specifications.
- Development of negotiation strategy for engaging with EPC.

3.2.4 Phase 1 Deliverables

The following deliverables should be provided for each technology pathway (WFGD/ non-WFGD) during phase 1 of the project.

Deliverable 1	– Medupi Plant Assessment/Baseline Report
Deliverable 2	– EPC RFP Pack Assessment Report
Deliverable 3	– FGD Interface Report (Integration Plan) including basis of design data
Deliverable 4	– Project / Construction Execution Plan with Project Schedule
Deliverable 5	– Negotiation Strategy Report
Deliverable 6	– List of procedures and standards
Deliverable 7	– Terminal point lists
Deliverable 8	– List of potential FGD technologies

CONTROLLED DISCLOSURE

Deliverable 9	– Updated DOR / RACI
Deliverable 10	– Criteria for evaluation of tender applicants

3.3 Phase 2: EPC PROCUREMENT PROCESS

The DP shall review the documentation that was compiled by the Employer for the EPC Request for Proposal (RFP). The EPC Contractor is required to submit a primary tender proposal based on a wet flue gas desulfurisation system (specifically the limestone forced oxidation open spray tower configuration, main offer) with alternative technologies being considered provided the main offer is compliant.

3.3.1 PRIME ACTIVITY1 Tasks: Project Management

Main Effort: Strategic oversight and risk management

- Reviewing the procurement strategies.
- Ensuring compliance with regulatory and funding requirements.
- Risk assessment of potential EPC contractors (working with Eskom Market Intelligence).

3.3.2 PRIME ACTIVITY2 Tasks: Engineering Services

Main Effort: Technical evaluation and assurance

- Assess bid submissions with the Employer.
- Prepare a bid assessment report highlighting risks and issues and make recommendations.
- Advise on technology selection.
- Participate in contract negotiations.
- Support Eskom's governance requirements.
- Review a negotiation strategy with a proposed schedule, project scope, and execution plan (if necessary).

3.3.3 PRIME ACTIVITY3 Tasks: Procurement and Commercial

Main Effort: Manage the EPC tender selection process and assess bid submissions with the Employer

- Supplier selection support.
- Commercial evaluation – assessing the ability of suppliers to meet the commercial specifications.

CONTROLLED DISCLOSURE

3.3.4 Phase 2 Deliverables

Deliverable 11	– Bid Evaluation Report
Deliverable 12	– Negotiation Strategy Report – Review (if necessary)

3.4 Phase 3: EPC ONBOARDING AND DESIGN

Phase 3 focuses on effective onboarding of the EPC to ensure seamless integration into the broader programme framework. This phase emphasises strong technical leadership and integration. A key component involves comprehensive design reviews and ongoing technical oversight to maintain alignment with project standards and objectives. Additionally, this stage includes the structured review and approval of critical documentation such as contracts, clarifications, and design submissions.

3.4.1 PRIME ACTIVITY1 Tasks: Project Management

Main Effort: Integrating EPC into project.

- Designing and agreeing with Eskom and EPC project governance structures and reporting.
- Development and agreeing of EPC incentivisation arrangements.
- Designing and running team on-boarding workshops to foster “best for programme” outcomes.

3.4.2 PRIME ACTIVITY2 Tasks: Engineering Services

Main Effort: Design reviews and technical oversight – including detailed reviews of EPCs design. Establishment of the FIDIC Engineer role.

- Concept/Basic design reviews – ensuring EPC design complies with functional specifications.
- Identify and resolve (with EPC) design issues.
- Develop Change Management governance and continue to manage through all remaining phases.
- Interface management – develop and run interface management process.
- Quality assurance – develop and run project Quality Management process.
- Provide technical guidance on engineering matters as required to EPC and Eskom.

3.4.3 PRIME ACTIVITY3 Tasks: Procurement and Commercial

Main Effort: Establish and manage contract management processes

CONTROLLED DISCLOSURE

3.4.4 PRIME ACTIVITY4 Tasks: Construction Management

Construction management support to review, approve and monitoring of EPC design and construction schedule.

3.4.5 Phase 3 Deliverables

Deliverable 13	– Interface Management Plan
Deliverable 14	– Project specific Change Management Procedure
Deliverable 15	– CM/DM plan including information flow diagram
Deliverable 16	– Review report of the EPC QMS
Deliverable 17	– Review report of technical submission against requirements/specifications
Deliverable 18	– Impact Assessment report (s) on the existing plant with recommendations / requirements for approval

3.5 Phase 4: EPC DESIGN REVIEW

Phase 4 involves the formal review of EPC designs through a structured process of technical verification and coordination. This stage ensures that all design outputs are thoroughly reviewed for compliance with project requirements and technical standards.

In line with the EPC contract, the DP on behalf of the Employer will act as the Owners Engineer and review all the designs and provide an acceptance, accepted with comments or rejection status. The final decision rests with the EPC contractor as the EPC remains the design authority and will be accountable for all the designs. Only in the case of interface with existing plant, will the DP act as the Architect Engineer on behalf of Eskom, and the EPC contractor will await an approval step by the DP.

3.5.1 PRIME ACTIVITY1 Tasks: Project Management

Main Effort: Overseeing the process to get to EPC design acceptance.

- Coordination of technical verification processes to ensure design requirements are met, and constructability and supply-side issues are addressed.
- Management information required to make decisions presented in timely fashion.
- Governance procedures, including integration with Eskom internal governance and assurance, followed.

CONTROLLED DISCLOSURE

3.5.2 PRIME ACTIVITY2 Tasks: Engineering Services

Main Effort: Verification and sign-off of EPC design.

- Reviews EPC contractors detailed design deliverables, drawings and documentation.
- As required, works with EPC contractor to update deliverables to meet Eskom standards.

The design engineering review comprises the review of the EPC contractor's design documentation, including (but not limited to):

- Process and instrumentation diagrams (P&IDs)
- Process Design
- Mechanical Design
- Equipment and system layouts
- Assembly, Construction and Installation Drawings
- Structural and civil designs
- Electrical and control systems
- Environmental impact assessments
- Health and safety plans
- Construction method statements
- Quality project documentation
- Personnel (Eng, OPS, O&M) Training documentation

If the design review reveals that changes to the existing infrastructure or an established design base are necessary, the DP needs to initiate an Engineering Change process. The DP needs to address any impact as identified in the impact assessment. This will include updating of existing operating and control philosophies, manuals, procedures, P&ID's, Schedules and any other technical documentation as well as updates of the existing plant 3D models.

3.5.3 PRIME ACTIVITY3 Tasks: Procurement and Commercial

Main Effort: Ensure contract processes and requirements are adhered to and any changes needed to reflect agreed EPC designs are made and recorded.

- Ensure all designs align with Eskom requirements and strategic goals.
- Assess performance to date against EPC incentives.
- Perform contract management activities on the project.

CONTROLLED DISCLOSURE

3.5.4 PRIME ACTIVITY4 Tasks: Construction Management

Main Effort: provide construction management advice to review and assurance of EPC designs

3.5.5 PRIME ACTIVITY5 Tasks FIDIC Engineer:

Main Effort: Contractual sign-off, validating that all designs have been formally approved or reviewed as per contract procedures.

3.5.6 Phase 4 Deliverables

Deliverable 19	– Design Review Report(s)
Deliverable 20	– Engineering Change Report(s)
Deliverable 21	– Impact Assessment(s)

3.6 Phase 5: MANUFACTURING AND FABRICATION

Following the acceptance of the design, the focus shifts to the realisation of project components that may require manufacturing and fabrication. This stage is underpinned by performance monitoring and risk management to ensure progress remains aligned with the project schedule and quality expectations. Quality assurance and compliance monitoring are central to this phase, with continuous oversight to verify outputs meet technical specifications and standards. Additionally, formal compliance checks and approvals are to be conducted ensuring all fabricated elements are ready for integration during construction.

3.6.1 PRIME ACTIVITY1 Tasks: Project Management

Main Effort: Drive performance of EPC

The DP will provide project management services such as:

- Conducting project coordination/progress/technical meetings.
- Review of detailed time schedules.
- Review and analysis (critical path, milestones etc.) of project time schedule.
- Review of project coordination and communication procedures.
- Progress review and monitoring, participation and conducting the review meetings.
- Preparation of weekly and monthly reports on progress of work.
- Monitoring progress of planned and actual spending, indicating slippages/deviations and suggesting remedial action.
- Track progress against schedule, cost and earned value metrics.

CONTROLLED DISCLOSURE

- Monitor quality in accordance with agreed project QMS.

With regards to manufacturing, the DP supervision duties include:

- Regular inspection of the manufacturing process of key components by the resident quality manager.
- Monitoring manufacturer time schedules to ensure they are in compliance with the purchase orders.

3.6.2 PRIME ACTIVITY2 Tasks: Engineering Services

Main Effort: Quality assurance and compliance monitoring. Including inspections and audits, and verification of materials and compliance with specifications

The DP is responsible for reviewing the inspection and test plans (ITPs), proposed witness and hold points and corresponding test procedures outlined by the EPC contractor. These ITPs need to be approved and monitored. Hence, the DP needs to review and comment on the QA/QC documents submitted by the EPC contractor after the design review period. Examples of such documents are:

- Project-specific quality plans, materials and manufacturing specifications, inspection and test plans (ITPs) for major components.
- Project-specific weld plans, specifications (WPS) and qualification records (WPQRs),
- Project-specific welder's and NDE personnel certificates.
- Relevant manufacturers' certifications.
- Project-specific material certificates, data sheets.
- Project-specific inspections and test procedures, FAT procedures, functional tests, etc.
- Project-specific inspections and test protocols.
- Project-specific final acceptance inspection.

With regards to manufacturing, the DP supervision duties include:

- Checking the QA measures implemented in the fabrication sequence.
- QC coordination of inspectors and management of the reporting to Eskom.
- Review of the documentation of procedures and review of the results of the factory acceptance tests (FAT).
- Participation in workshop inspections and tests together with the relevant technical departments (as per ITP).
- Witnessing FATs and final tests of main equipment as defined in the quality inspection plans of the EPC contractor and hidden subcontractors.
- Review of quality documents used for manufacturing of the main equipment, especially with focus on weld preparation and execution of welding, non-destructive examination (NDE), corrosion protection, preservation, packing, transportation.

CONTROLLED DISCLOSURE

- Visiting manufacturers ahead of the delivery of critical components (e.g. six weeks in advance of ex-works date).
- Checking that key components are adequately packed and protected against rust and physical damage prior to release for shipment.
- Review and follow-up on non-conformance reports (NCRs).
- Checking transportation methods (incl. loading and unloading) to ensure that components are delivered to site in top condition, if applicable.

3.6.3 PRIME ACTIVITY3 Tasks: Procurement and Commercial

Main Effort: On going management of contracts and claims management processes

- Certification of EPC contractor's invoices.
- Work with EPC to identify improvements to cost and schedule performance, aligned with Incentivisation scheme Key Result Areas.

3.6.4 PRIME ACTIVITY5: Tasks FIDIC Engineer

Main Task: Compliance and Approval, ensuring compliance with agreed contractual requirements.

3.6.5 Phase 5 Deliverables

Deliverable 22	– QA plan for the construction and commissioning phase
Deliverable 23	– Manufacturing Report(s)

3.7 Phase 6: CONSTRUCTION AND INSTALLATION

This phase emphasises the integration of construction activities with technical oversight and stakeholder coordination. It involves the troubleshooting of on-site challenges, ensuring clear and timely communication between the technical team within the DP, the EPC contractor and Eskom. A structured escalation process will be in place to address issues that may require higher-level intervention. Construction supervision and quality control are applied throughout this stage to ensure standards and timelines are upheld. Contract administration plays a crucial role in managing deliverables, resolving disputes and maintaining alignment with project objectives. This will ensure all construction and installation efforts are executed efficiently.

3.7.1 PRIME ACTIVITY1 Tasks: Project Management

Main Effort: Problem solving, opportunity finding, and governance. Facilitating communication between technical engineering role (PRIME ACTIVITY2), EPC and Eskom Employer

CONTROLLED DISCLOSURE

- Ensuring that challenges during construction are resolved in accordance with the contract and expected behaviours.
- Escalating issues through the agreed governance chain and providing the information required to make decisions.
- Coordination with the Eskom Medupi team to ensure smooth integration into the existing power plant.
- Ensure EPC Contractor complies HSE specifications.

3.7.2 PRIME ACTIVITY2 Tasks: Engineering Services

Main Effort: Supervision of EPC construction in accordance with agreed governance systems, interface management with on-going site operations, and quality control.

- Ensure design integration.
- Manage interfaces on site.
- Supervision and technical support during construction and installation activities.
- Review of construction plans, quality control plans including method statements and drawings.
- Participation in integration meetings.
- Supervision of erection of plant, equipment and facilities by the EPC contractor to ensure compliance of the EPC contract with regards to quality, safety and performance.
- Review of construction schedules of the EPC contractor and monitoring of site activities with respect to the latest approved schedule.
- Proposal of corrective actions should works not be in line with approved designs/specifications.
- Review and advice regarding site quality assurance plans and compliance with the contract.
- Assess environmental approvals and other relevant requirements for integration within the EPC scope and operations.
- Periodic review of the health, safety and environment (HSE) activities of the EPC contractor on site (once a quarter) for alignment with the requirements as set out in legislative and regulatory standards and guidelines to facilitate provision of technical assurance.
- Inspection of incoming goods after unloading and lodging of complaints in case of objections.
- Inspection of on-site storage facilities for components (either before or after erection) to ensure it is suitable for maintaining the parts in top condition.
- Monitoring of quality checks.

CONTROLLED DISCLOSURE

- Documenting defects, failures and shortcomings and, if necessary, request remedial action from the EPC contractor.
- Attend technical and risk meetings.
- Attend regular site, progress and technical meetings and provide resolution of interface related technical challenges where necessary.
- Clarify details and descriptions during construction as required,
- Witness and review mock-ups, tests and commissioning carried out both on and off-site to facilitate provision of technical assurance,
- Update and issue drawings register, where required,
- Review and comment on operation and maintenance manuals, guarantee certificates and warranties,
- Provide oversight during the training phase of the Employer employees.
- Coordinate the addressing/resolution of technical issues between the Contractor and Employer.
- Assess progress and issue progress payments as appropriate.

3.7.3 PRIME ACTIVITY3 Tasks: Procurement and Commercial

Main Effort: Claims and contract management

- Issue instruction where necessary in support of FIDIC engineer determinations.

3.7.4 PRIME ACTIVITY4 Tasks: Construction Management

Main Effort: Site supervision, overseeing EPC adherence to regulations

- Provide advice and recommendation on construction issues.
- Provide advice on construction progress to project lead.

3.7.5 PRIME ACTIVITY5 Tasks FIDIC Engineer:

Main Effort: Contract administration and issue resolution

- Issue instructions where necessary.

3.7.6 Phase 6 Deliverables

Deliverable 24	– Erection Progress Reports
Deliverable 25	– Drawings register

CONTROLLED DISCLOSURE

Deliverable 26	– Reviewed Data packs.
Deliverable 27	– Reviewed Certification.
Deliverable 28	– Handover review report.

3.8 Phase 7: COMMISSIONING AND TESTING

The commissioning and testing phase is pivotal in transitioning from construction to operational readiness, ensuring that all systems perform according to design intent and contractual requirements. This stage is guided by strategic oversight and robust risk mitigation practices to preemptively address potential operational issues. Comprehensive performance verifications are conducted to validate functionality, efficiency, and safety. Emphasis is placed on seamless systems integration, ensuring interoperability across all components. Detailed documentation and structured testing protocols underpin this phase, providing traceability, accountability, and assurance that the project is ready for handover and long-term operation.

3.8.1 PRIME ACTIVITY1 Tasks: Project Management

Main Effort: Oversight of schedule – ensuring testing and commissioning plans align with strategy and PEP.

- Monitor performance against PEP agreed milestones and targets
- Manage interface between EPC and Eskom site operations for start-up activities

3.8.2 PRIME ACTIVITY2 Tasks: Engineering Services

Main Effort: Performance verification and system integration

- Review and accept EPC commissioning plans.
- The DP must review and accept all commissioning and testing plans submitted by the EPC contractor based on relevant standards, codes and best engineering practices.
- A key focus area will be the management of the interfaces to the power plant.
- Supervision conduct of tests including reviewing of all test procedure documentation, supervision and technical support during test and commissioning and ensuring EPC meets appropriate HSSE standards
- Witness, on Employer's behalf, EPC contractor issued testing procedures and ensure that Employer acceptance had been achieved prior to tests

The DP has the following responsibilities in this area:

- Prepare a pre-commissioning report with activities needed to meet commissioning targets
- Review of commissioning procedures (start-up procedures and functional test procedures)

CONTROLLED DISCLOSURE

- Checking the readiness of the site for commissioning
- Supervision of plant integration: alignment of the FGD commissioning activity schedule with power plant requirements
- Supervision and witnessing of the cold commissioning of main components and sub-system tests
- Supervision and witnessing of the hot commissioning of main components
- Supervision and witnessing of the hot commissioning of complete plant
- Supervision and witnessing of the start-up of plant and trial operation of plant including load variations

In this phase of the project, the responsibilities of the DP include:

- Ensuring that the requirements from the Employer are available (e.g. coal at the expected spec, unit availability, etc.)
- Perform pre-commissioning review report.
- Review of performance and reliability test run procedures
- Supervision of performance tests to confirm that the plant meets contractual guarantees
- Documentation of defects, failures or shortcomings and, if necessary, request remedial action from the EPC contractor
- Review of EPC contractor's performance test reports
- Overseeing phased handovers for the completed FGD
- Certifying substantial completion and issuing preliminary and final acceptance certificates (PAC and FAC)

3.8.3 PRIME ACTIVITY3 Tasks: Procurement and Commercial

- Procurement of 3rd party testing equipment for validation.

3.8.4 PRIME ACTIVITY4 Tasks: Construction Management

Main Effort: Ensure contract elements of test and commissioning are managed

- Manage site interface process in accordance with PEP

3.8.5 PRIME ACTIVITY5 Tasks FIDIC Engineer:

Main Effort: Documentation and test oversights

- Perform tasks in line with FIDIC Engineer contract, such as issue performance certificates.

CONTROLLED DISCLOSURE

3.8.6 Phase 7 Deliverables

Deliverable 29	– Commissioning Readiness Report
Deliverable 30	– Pre-commissioning review report
Deliverable 31	– Commissioning and Test Reports, PAC and FAC

3.9 Phase 8: HANDOVER AND CLOSEOUT

This phase signifies the formal conclusion of the project, ensuring that all contractual, technical, and operational obligations have been fulfilled. This stage focuses on completion assurance through thorough inspections, problem resolution, and final performance validations. A structured knowledge transfer process is implemented to equip Eskom's operations team with the necessary understanding and tools for ongoing system management. Comprehensive documentation, including as-built records, test results, and operation manuals, is compiled and delivered. The phase culminates in contract completion, reconciliation of the final account, and formal acceptance, marking a successful transition from project execution to operational ownership.

3.9.1 PRIME ACTIVITY1 Tasks: Project Management

Main Effort: Completion assurance and knowledge transfer

- Ensuring all contractual obligations are met
- Validation of completion documentation
- Support Engineering teams' development of handover activities in lien with agreed Completion plan
- Ensure orderly transfer of assets to Eskom operations team

3.9.2 PRIME ACTIVITY2 Tasks: Engineering Services

Main Effort: Responsible for documentation and completion assurance and verification of system performance

Upon successful completion of tests, the DP is responsible for reviewing and accepting test reports and commissioning documentation, including:

- Review as-built documents compared with as-design
- Supervision and technical support for handover activities including performance obligations

CONTROLLED DISCLOSURE

- Transfer of engineering systems and procedures in accordance with Eskom asset management processes.
- Functional test reports
- Performance test reports
- Site acceptance tests (SATs)
- Factory acceptance tests (FATs) for key equipment
- As-built documentation and operation manuals
- Final deliverables and calculations,
- As-design/as-built drawings and documents,
- Quality assurance data packs,
- Design criteria and specifications,
- As-design/as-built operational requirements,
- Maintenance and operating strategies for the entire FGD System,
- Transfer of engineering systems and procedures,
- Compilation of close-out report using the template provided by the Employer, and
- Acceptance test review report

Once they have been quality-checked, the documents are handed over to Eskom.

3.9.3 PRIME ACTIVITY3 Tasks: Procurement and Commercial

- Handover complete records on contractual and commercial work to Employer including any outstanding claims issues

3.9.4 PRIME ACTIVITY4 Tasks: Construction Management

- Support handover of site to Eskom

3.9.5 PRIME ACTIVITY5: Tasks FIDIC Engineer

Main Effort: Contract completion certification and final account

- Determine and certify completion of works
- Review and approve contractor's final payments

CONTROLLED DISCLOSURE

3.9.6 Phase 8 Deliverables

Deliverable 32	– Take-over Report
Deliverable 33	– Close-out report
Deliverable 34	– Acceptance test review report

3.10 Phase 9: POST COMPLETION

The final phase ensures that the project continues to deliver value beyond handover, focusing on sustained performance and long-term success. This stage involves systematic performance evaluation and monitoring to verify that systems operate as intended under real-world conditions. Insights gained are used to drive continuous improvement and optimize operational efficiency. Ongoing knowledge transfer supports Eskom's ability to manage and maintain the asset effectively. Where necessary, this phase also provides a structured framework for resolving any residual disputes or claims, ensuring closure with transparency and accountability.

3.11 Delivery Partner SKILLS AND competencies

The Delivery Partner:

- Can lead strategic planning, results-based management and reporting,
- Builds strong relationships with contractual parties and Others, focuses on impact, results for the Employer, and responds positively to feedback,
- Consistently approaches work with energy and a positive, constructive attitude,
- Demonstrates good oral and written communication skills in English,
- Demonstrates the ability to manage complexities and work under pressure, as well as conflict resolution skills and sound labour relations,
- Display overall professionalism, integrity, enthusiasm and commitment, and
- Has good problem-solving skills and the ability to apply good judgment in the context of assignments given,
- Technical investigations during defects period.

The DP will assess the need of the resources to fulfil the services as highlighted, and these resources will range from engineering, project management and commercial as shown in appendix A, to ensure a full-service delivery. The supplier may provide more than one resource as required to meet the competencies and skills set provided under section 3.12 with justification.

CONTROLLED DISCLOSURE

The Specialist Engineers shall have a Professional registration. Professional registration shall be determined by the statutory and legislative bodies of South Africa. In a case where a specialist is not professionally registered, the DP shall provide a suitable registered person with the specialist to ensure compliance with work in South Africa.

4. Transfer of skills to Employer (Eskom)

4.1 GENERAL TRAINING

In the delivery of the FGD project, the DP is expected to ensure sufficient training and transfer of skills to Eskom employees. This training is over and above what will be provided by the EPC contractor.

The DP shall in collaboration with the Employer, develop training plans and programs to ensure the Employer is suitably trained. The training shall include for all the equipment and systems that will be used during the project, for the duration of the works. A formal training will be undertaken at the start of the project and just before handover of the EPC works. The Employer shall retain the right to request for additional training, on two separate occasions during the execution of the project.

Training shall comprise both theoretical and practical training.

The number of personnel to be trained will be determined by the Employer, however the DP shall ensure that all the Employer's services in line with the DP scope are trained.

The Employer bears the cost of salaries, accommodation, travelling expenses and other allowances of his personnel during the training, but all other training costs are borne by the DP.

The training schedule shall be incorporated into the programme/schedule in accordance with the contract clauses.

4.2 UPFRONT TRAINING

- a. The DP shall provide up-front training to all staff and to the Employer's engineering team such that the Employer's project team is fully conversant with all aspects of the EPC Contractor's technology and systems.
- b. DP should ensure a technical training is provided to Engineering covering all FGD technologies and associated plants.

b. Training for personnel shall include: Project specific engineering training for the engineering personnel in building management system engineering courses which shall be agreed at execution stage. The DP shall provide all necessary courses with a minimum 3 participants from the Employer per course for a total number of a minimum 6 participants.

c. A detailed training program and the full training material shall be submitted by the DP to the Employer before the commencement of the training. The training only begins once the Employer has accepted the training program and the training material provided.

4.3 ON JOB TRAINING

a. Over and above the formal training, the DP shall also ensure an on-job training with personnel seconded from the Employer to the DP. Those employees will be mentored and supervised by the

CONTROLLED DISCLOSURE

DP during project execution. These employees will be assessed on a 6 monthly basis to ensure their accurate development and training by the DP.

b. The DP shall provide training to all staff that shall be using the system in the form of on-the-job training and formal courses. The DP should ensure they are able to absorb the number of personnel to be trained per resource from the DP.

4.4 OPERATOR AND MAINTENANCE TRAINING

Although the training is planned for the project team, the Employer would retain the right to make use of the DP for training of its operating and maintenance teams as well, over and above what the EPC would have provided.

Maintenance personnel shall be trained on all components and functions of the FGD Plant i.e. Method of maintenance, fault finding, correction, routine maintenance. Training shall include familiarisation with documentation (maintenance plan, procedures etc.), hardware familiarisation, hardware installation, maintenance, control and instrumentation, graphic display configuration, report generation, operator interface familiarisation, software maintenance and system administration. Operators shall be trained on the prototype systems and declared competent in accordance with the manufacturer's requirements on the new systems prior to the respective unit and commissioning.

4.5 ENGINEERING TRAINING

Theoretical and practical engineering training will be provided on the FGD design, capabilities and procedures. The engineering team should be trained sufficiently to enable them to work as part of the DP team on and off site. Engineering training includes training on all protections offered for FGD system. Training shall include system design philosophy which includes lessons and improvements, system architecture, debugging and testing of all software including programming, graphic display design and programming, database management, network design, communication, configuration, security, expansion and all information necessary for an individual to modify the system.

4.6 CERTIFICATION OF EMPLOYER STAFF COMPETENCE

The DP shall after an agreed "on-job" training period, successful completion of all applicable training courses and passing of the competency assessment certify the Employer's developed staff as being competent to maintain the relevant systems.

4.7 PARTICIPATION OF EMPLOYER STAFF

The Employer shall delegate a number of engineers to work with the DP during the various stages of the contract. The number shall at minimum include an engineer per following disciplines: boiler, process, electrical, C&I, civil infrastructure, structures, geotechnical, roads, rail, dams, bulk materials handling, low pressure services systems, chemical and water plant.

The Employer's engineering staff assigned to the DP shall not be viewed as part of the DP's resources necessary to provide the Works.

The Employer shall delegate a number of Employees/ Personnel to the DPs Project Execution team to facilitate development of these individuals.

CONTROLLED DISCLOSURE

Deliverable 35	– Training schedule
----------------	---------------------

5. Acceptance

The following divisions will be affected by the contents of this document:

Full Name and Surname	Designation
Bheki Nxumalo	GE Generation
Roman Crookes	GE Group Capital

This document has been seen and accepted by:

Full Name and Surname	Designation
Zola Ntolosi	HKA Consultant
Alex Cruttwell	HKA Consultant
Claudia Weise	VGBE Consultant
Oliver Then	VGBE Consultant
Christian Ullrich	VGBE Consultant
Keoagile Tiro	Arrangement Design Chief Engineer
Waleed Moses	Arrangement Design LDE
Andrew Matlala	Bulk Materials Handling Chief Engineer
Zak Jiyane	FGD EDWL
Andrew Matlala	BHM Engineering Chief Engineer
Prince Lepota	BMH Engineering LDE
Justin Varden	Chemical Engineering Chief Engineer
Koketjo Seshoka	Auxiliary Engineering Manager
Mahlatse Bosega	Chemical Engineering LDE
Tau Chokoe	Civil & Structural Engineering Chief Engineer
Thomas Chambale	Civil & Structural Engineering Engineer
Mandla Patric Nkosi	Configuration Management LDE
Mduduzi Dlamini	Configuration Management Senior Technician
Mdu Shoji	Control & Instrumentation Engineering LDE
Ranwedzi Ramutsindela	Control & Instrumentation Engineer
Mpho Ramunenyiwa	Electrical Engineering Chief Engineer
Tshildzi Bruwer	Electrical Engineering LDE
Selometsi Sehloho	FGD and Boiler Process Engineer
Audrey Maleka	Boiler Engineering LDE
Puseletso Godana	FGD Process Engineering LDE
Hendrick Mathebula	Low Pressure Services LDE
Pimani Mugwambane	Low Pressure Services Engineer
Rofhiwa Nemutandani	Project Engineering Manager
Annikie Moganelwa	RT&D and FGD Process Chief Engineer
Ebrahim Patel	Senior Consultant AQC

CONTROLLED DISCLOSURE

Full Name and Surname	Designation
Sibusiso Nxumalo	System Integration LDE
Khomotso Mashamaite	Employer's Representative (Generation)

6. Revisions

Date	Rev.	Compiler	Remarks
June 2025	5	S. Sehloho	Changed template to 32-4 Updated scope from VGBe and HKA Addressed gaps as picked up by FGD Team to align with Eskom's internal processes
Dec 2024	4	P. Godana	Comments addressed. Final Engineering Scope of Work
Dec 2024	3.1	P. Godana	Reissued for review with the following changes <ol style="list-style-type: none">1. Remove the project's scope of work2. Aligned the scope of work to the contract Updated the Specialist Resources requirements and removed/replaced resources
April 2024	3	L Mabasa	Updated scope of services
August 2023	2	L Mabasa	Further Owner's Engineer Scope Optimisation based on Human Resources Skills Gap Analysis
March 2023	1	L Mabasa	Owner's Engineer Scope Optimisation
December 2022	0	L Mabasa	Specification for provision of Owner's Engineer for the proposed Medupi FGD Project.

7. Development Team

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

- FGD Project team
- HKA
- VGBe

8. Acknowledgements

Selometsi Sehloho

CONTROLLED DISCLOSURE

Zak Jiyane

Puseletso Godana

CONTROLLED DISCLOSURE

When downloaded from the document management system, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorized version on the system. No part of this document may be reproduced in any manner or form by third parties without the written consent of Eskom Holdings SOC Ltd, © copyright Eskom Holdings SOC Ltd, Reg No 2002/015527/30

Appendix A – DELIVERY PARTNER SKILLS, RESOURCES AND QUALIFICATIONS.

Resource/s	Delivery Partner Service Areas / Skills set	Qualification	Years
FGD Specialist Resources	<ul style="list-style-type: none"> ○ Advanced understanding of FGD chemistry/chemical reactions, mass transfer and applicable engineering principles. ○ Experience with various FGD technologies. ○ Basic understanding of the Air Emissions Legislation. ○ Competence in FGD plant systems sizing, equipment and redundancy requirements. ○ General understanding of process control requirements, plant operation, basic plant logics and PID construction. ○ Competency in FGD process design analysis and optimisation (using various tools including CFD, HAZOP, etc). ○ Experience in FGD commissioning and O&M support ○ Understanding of sampling and testing requirements ○ Knowledge of chemical analysis procedures ○ Experience in process optimization, problem diagnosis and root cause analysis ○ System control (Co-operate with C&I to ensure proper functioning of dosing systems, pH control loops, instruments etc). 	BSc/B.Eng./B.Tech or international equivalent.	10

CONTROLLED DISCLOSURE

Resource/s	Delivery Partner Service Areas / Skills set	Qualification	Years
	<ul style="list-style-type: none"> - Experience working with the following components: <ul style="list-style-type: none"> o Chimneys, Tanks, Vessels and Silos, Ducting systems, Pumping, Fans, Compressors, Piping, and pipe racks, Agitators and mixers, Absorber internals, Dewatering systems, Blowers, Sumps, Preparation systems - Understanding of local structural design requirements. - Understanding of pipe sizing and design principles - Understanding of FGD equipment requirements and redundancy requirements. o Application of the design methods, standards and design code o Interface design and management o Maintenance requirements o Competency in material selection and corrosion/erosion protection methods. o Knowledge of structural and seismic analysis and applicable engineering principles o Competency in constructability analysis o Spares, operations, and maintenance and disposal strategies. Experience in FGD commissioning and O&M support 	BSc/B.Eng./B.Tech or international equivalent.	10

CONTROLLED DISCLOSURE

Resource/s	Delivery Partner Service Areas / Skills set	Qualification	Years
Welding Resources	<ul style="list-style-type: none"> ○ Internationally recognized welding Engineer/Technologist ○ Responsible for creating and qualifying welding procedures and welders. ○ Knowledge on different welding processes for diverse materials. ○ Competency in welding codes and standards: Understanding of international codes and standards such as ISO, ASME, AWS and NACE. ○ Knowledge of material science for various materials i.e. corrosion and wear resistant materials within a power plant and chemical plant. ○ Knowledge on how to inspect quality of welds on diverse components fabricated with varied materials. ○ Experience in welding quality inspection in power plant and chemical plant. ○ Competent with ISO 9001 standard ○ Knowledge on non-destructive testing. 	BSc/B.Eng./B.Tech. (Registered with Professional body) IWE/IWT certified.	10

CONTROLLED DISCLOSURE

Resource/s	Delivery Partner Service Areas / Skills set	Qualification	Years
Quality Resources	<ul style="list-style-type: none"> – Competency in Quality Management System essential for establishing and maintaining quality control processes. – Experience in quality assurance or quality control within power plant and chemical plant. – Knowledge of relevant industry quality standards including but not limited to ISO 9001 and ISO 14001. – Knowledge on different welding processes for diverse materials. – Competency in welding codes and standards: Understanding of international codes and standards such as ISO, ASME, AWS and NACE. – Knowledge of material science for various materials i.e. corrosion and wear resistant materials within a power plant and chemical plant. – Knowledge on how to inspect quality of welds on diverse components fabricated with varied materials. – Knowledge on non-destructive testing. – Specialisation areas to be covered by the DP: <ul style="list-style-type: none"> ○ Quality – Mechanical and Level 2 welding inspection ○ Quality – Civil ○ Quality – Electrical and C&I ○ Quality – Welding (IWT/IWE) 	BSC/B.Eng./B.Tech. In Engineering or Degree in TQM (Registered with professional body) or international equivalent.	10

CONTROLLED DISCLOSURE

Resource/s	Delivery Partner Service Areas / Skills set	Qualification	Years
Civil & Structural Resources	<ul style="list-style-type: none"> ○ Experience in design and construction of: ○ Potable water reticulation and management. ○ Sewer reticulation and management. ○ Stormwater reticulation and management. ○ Process water reticulation and management. ○ Clean and dirty water management systems. Road Infrastructure. ○ Railway Infrastructure. ○ Competency in OSHAct 	BSc/B.Eng./B.Tech. (Registered with Professional body)	10
	<ul style="list-style-type: none"> - Experience in design and construction of: <ul style="list-style-type: none"> ○ Buildings, ○ Support infrastructure, ○ Retaining structures and ○ Foundations. - Experience in structural inspections - Competency in destructive and non- destructive testing. ○ Competency in OSHAct 	BSc/B.Eng./B.Tech. (Registered with Professional body)	10

CONTROLLED DISCLOSURE

Resource/s	Delivery Partner Service Areas / Skills set	Qualification	Years
	<ul style="list-style-type: none">- Advanced knowledge of Strength and durability assessments.- Competency in the design of concrete mix including batching, mixing, transporting, placing, consolidating, finishing, and curing.- Understanding of concrete repair and applicable engineering principles.- Understanding of concrete protection and applicable engineering principles.o Competency in OSHAct	BSc/B.Eng./B.Tech. (Registered with Professional body)	10

CONTROLLED DISCLOSURE

Resource/s	Delivery Partner Service Areas / Skills set	Qualification	Years
	<ul style="list-style-type: none"> - Competency in scoping and performing geotechnical Investigations. - Experience in Earthworks and engineered layer works. - Competency in Slope stability of excavations, cuts, and embankments as well as support measures. - Recommend foundation types. - Knowledge of Liner / barrier systems and geosynthetic materials. - Understanding of Material availability and management for construction uses. - Earth retaining structures. - Experience in ground improvement. - Competency in groundwater modelling and dewatering. - Experience in deep excavations. - Understanding of Earthquake engineering, soil and rock mechanics. o Competency in OSHAct 	BSc/B.Eng./B.Tec h. (Registered with Professional body)	10
	<ul style="list-style-type: none"> - Experience in design and construction of water retaining infrastructure, dams and waterways sizing and stability analysis. o Competency in OSHAct and applicable legislative compliance and permitting processes. 	BSc/B.Eng./B.Tec h. (Registered with Professional body)	10

CONTROLLED DISCLOSURE

Resource/s	Delivery Partner Service Areas / Skills set	Qualification	Years
Waste Water Treatment Plant Chemical Resources	<ul style="list-style-type: none"> - Experience in the following areas is required: <ul style="list-style-type: none"> o Softening Processes. o Clarifiers. o Thermal Evaporators. o Crystallisers. o Chemical Offloading, Handling, Storage and Dosing. - Competency in Water Quality Analysis and Water Balance. o Competency in OSHAct and applicable legislative compliance and permitting processes 	BSc/B.Eng./B.Tech. (Registered with Professional body)	10
	<ul style="list-style-type: none"> - Experience on the following mechanical Equipment is required: <ul style="list-style-type: none"> o Pumps. o Gearboxes. o Evaporators. o Crystallisers. o Tanks. o Piping. o Valves. o Silos; and o Mixers. o Experience on corrosion protection and materials of construction. 	BSc/B.Eng./B.Tech. (Registered with Professional body)	10
	<ul style="list-style-type: none"> o Experience in the design and installation of Laboratory's is required. 	BSc/B.Eng./B.Tech. (Registered with Professional body)	10

CONTROLLED DISCLOSURE

C&I, CBMS and IT/OT Resources	<ul style="list-style-type: none"> - Experience in the following Design/Engineering systems/equipment/tasks: <ul style="list-style-type: none"> o Multiple DCS/Systems/CBM S/IT/OT: o Manage interfaces; and o Manage clashes. - Experience in the following Design/Engineering systems/equipment/tasks: <ul style="list-style-type: none"> o Medupi based DCS systems experience including fault finding and programming experience. o Medupi installed Siemens DCS; Medupi Installed Alstom Alspha / General Electric. - Experience in Honeywell systems installed within Eskom. - Experience in implementing IT/OT systems within the engineering industry and shall further interpret Eskom's IT/OT requirements and improve upon them in order to effect the best system. o Proficient at performing all duties relating to current operational conditions in Medupi Power station and must have prior experience with similar or same operational conditions as in Medupi Power station DCS and be able to perform fault finding. o Manage multiple systems contractors E.g: Siemens, Alstom/GE. 	BSc/B.Eng./B.Tech. (Registered with Professional body)	10
-------------------------------	---	--	----

CONTROLLED DISCLOSURE

Electrical Resources	<ul style="list-style-type: none"> - Experience in the following electrical engineering systems/equipment/tasks: <ul style="list-style-type: none"> o Medium Voltage (MV) and Low Voltage (LV) electrical reticulation (including electrical building services) design and review. - Experience in reviewing and assessment of equipment specification & sizing, arrangement and layout drawings, single line diagrams, schematics, wiring diagrams, electrical schedules, cable block diagrams, earthing drawings, power system studies, and other relevant submissions by the project contractor. <ul style="list-style-type: none"> o MV and LV Protection Systems. o Substation Automation System (SAS). o Auxiliary Transformers. o Emergency Diesel Generator & Control. o Batteries & Chargers. o Uninterruptible Power Supplies (UPS). o Protection, Power and Control Cabling, Routing, 	BSc/B.Eng./B.Tec h. (Registered with Professional body)	7
----------------------	--	---	---

CONTROLLED DISCLOSURE

Resource/s	Delivery Partner Service Areas / Skills set	Qualification	Years
	<p>Racking and Servitudes.</p> <ul style="list-style-type: none"> ○ Lighting & Small Power Installations. ○ Earthing & Lightning Protection. ○ Motors & Drives. <p>Power System Studies/Modelling /Simulations using DigSilent Powerfactory.</p>		
Arrangement (Draught's person) design Resources	<ul style="list-style-type: none"> - Competency in Draughting. - Experience in Site inspections and Site measurements. - Competency in maintaining 3D model drawings including P&ID's, GA's, detailed drawings, electrical C&I drawings with all the interfaces which includes the interfaces to existing plant and the - Experience in performing 3D scanning, measurements, surveying and GPR (ground penetrating radar) scanning (but not limited to). - Experience in performing Clash Detection in the 3D model between the EPC contractor's design and the interface with the existing plant, as well as the interfaces within the EPC contractor's design. 	NDip/B.Tech. /MDOP	5

CONTROLLED DISCLOSURE

Resource/s	Delivery Partner Service Areas / Skills set	Qualification	Years
Bulk Material Handling Resources	<ul style="list-style-type: none"> - Experience in the following systems/equipment: <ul style="list-style-type: none"> o Sorbent off-loading facility o Sorbent storage/storage with associated material handling equipment. o Slurry Pumping and piping o BHM Software Design <p>Bulk Material conveyor systems</p>	BSc/B.Eng./B.Tech. (Registered with Professional body)	10
LPS Resources	<ul style="list-style-type: none"> - Experience in design and construction of each the following systems: <ul style="list-style-type: none"> o Water systems, o Fire protection, o Lifting equipment& Elevators (where applicable) o HVAC and Compressed Air o Competency in OSHAct & National Building Regulations 	BSc/B.Eng./B.Tech. (Registered with Professional body)	5
System Integration Resources	<ul style="list-style-type: none"> o Experience in Plant/System Break Down Structures (PBS) o Experience in Division of responsibilities matrix (DOR) o Experience in Limits of scope and supply matrix (LOSS) o Experience in Integrated Terminal Point o Experience in RAM studies, o Knowledge of FMECA, o Knowledge of HAZOP, HAZLOC and constructability analysis 	BSc/B.Eng./B.Tech. (Registered with Professional body)	5

CONTROLLED DISCLOSURE

Resource/s	Delivery Partner Service Areas / Skills set	Qualification	Years
Senior Configuration Management Resources	<ul style="list-style-type: none"> ○ In depth understanding of AKZ and KKS coding standards ○ Basic understanding of Plant Breakdown Structure (PBS) ○ Competence in Design Coding and PBS Development ○ Competence in Plant Labelling and understanding of applicable standards ○ Experience in technical documentation and records management – Specialisation areas to be covered by the DP: ○ Configuration Management ○ Documentation Management 	BSc/B.Eng./B.Tech. (Registered with Professional body)	3
Project Lead	<ul style="list-style-type: none"> – Experience in managing accountability in similar major energy/power plant projects – Experience in ensuring alignment across all functions of a project – Experience in managing interface with Employer leadership and reporting Committees – Experience in managing retrofit interfaces in power plants. 	BSc.Eng/B.Eng/B.Tech or international equivalent	15

CONTROLLED DISCLOSURE

Resource/s	Delivery Partner Service Areas / Skills set	Qualification	Years
Project Managers	<ul style="list-style-type: none"> – In-depth experience in leading overall programme and management of daily coordination, interfaces, and change control – Experience in Project Management of Power Plants or any similar large plants/industrial projects – Extensive experience in the management of project time, quality and budget – Experience in managing Construction of Projects across all life cycle stages – Knowledge of all project management aspects of PMBok – Competency in Construction Contracts Management (FIDIC) – Competency in OSHAct & Construction Regulations 	BSc.Eng/B.Eng/B.Tech (Registered with Professional body)	10
Construction Managers	<ul style="list-style-type: none"> – Experience in construction team lead on day-to-day project delivery assurance – Experience in Construction of Power Plants or any similar large plants/industrial projects – Experience in managing physical Construction of the works during execution phase in line with construction methods – Competency in Construction Contracts Management – Competency in OSHAct & Construction Regulations 	BSc.Eng/B.Eng/B.Tech (Registered with Professional body)	10

CONTROLLED DISCLOSURE

Resource/s	Delivery Partner Service Areas / Skills set	Qualification	Years
FIDIC Engineer Resources	<ul style="list-style-type: none"> ○ Experience in contract administration, certification, and change under EPC FIDIC contract ○ Competency in the management and administration of FIDIC forms of contracts ○ Knowledge and experience of the execution of the roles of the FIDIC Engineer in terms of the FIDIC forms of contract – In-depth understanding of FIDIC contract claims evaluation and settlement processes – In-depth understanding of contract risk management, bonds/guarantees – Experience in EPC contracts management and administration – Specialisation areas to be covered by the DP: <ul style="list-style-type: none"> ○ FIDIC Engineer ○ FIDIC Specialisation ○ Commercial Management ○ Contract Management 	BSc.Eng/B.Eng/B.Tech/ LLB or international equivalent.	10
FIDIC Engineer Assistant Resources	<ul style="list-style-type: none"> – Specialisation areas to be covered by the DP: <ul style="list-style-type: none"> ○ FIDIC Engineer Assistant ○ Contract Administration ○ Documentation Management 	<p>BSc.Eng/B.Eng/B.Tech/ LLB or international equivalent</p> <p>NDip/B.Tech./ International equivalent (In project management)</p>	<p>7</p> <p>5</p>

CONTROLLED DISCLOSURE

Resource/s	Delivery Partner Service Areas / Skills set	Qualification	Years
Commissioning Resources	<ul style="list-style-type: none"> Experience in Commissioning of Power Plants Knowledge of risk management Experience in Systems Integration Experience in Construction Management Competency in OSHAct and construction regulations Specialisation areas to be covered by the DP on FGD process, mechanical, electrical and Control instrumentation: <ul style="list-style-type: none"> Commissioning Specialisation Commissioning Supervision 	BSc.Eng/B.Eng/B.Tech Or NDip/B.Tech./ Or International equivalent	7 10
Site Supervisor	<ul style="list-style-type: none"> Experience in Construction of Power Plants or any similar large plants/industrial projects Experience in managing physical Construction of the works during execution phase in line with construction methods Experience in the implementation of the activities detailed in the commissioning plan Experience in management of site related governance and safety, health, environment, risk and quality (SHERQ) requirements Competency in OSHAct & Construction Regulations 	BSc.Eng/B.Tech	10

CONTROLLED DISCLOSURE

Resource/s	Delivery Partner Service Areas / Skills set	Qualification	Years
Commercial Resources	<ul style="list-style-type: none"> – Experience in managing cost reporting, aligns incentives with EPC, and supports commercial governance functions – Experience in commercial and cost control management in construction of similar projects – In-depth knowledge of tracking and reporting of all project changes according to change control procedures – Knowledge of applicable norms and standards for project costing – Specialisation areas to be covered by the DP: <ul style="list-style-type: none"> ○ Commercial Management ○ Claims Specialisation ○ Forensic Planning ○ Quantity Surveying ○ Cost Controlling 	B. Degree/B.Tech /NDip LLB or international equivalent	10
Planning and Scheduling	<ul style="list-style-type: none"> ○ Experience of project planning in power plant construction or similar projects ○ Extensive experience in developing and managing project schedules (logic, risk, resource loading, milestones, float) according to applicable scheduling tools/software - Experience in progress reporting and identification and resolution of schedule risks – Experience in leading schedule integration, risk registers, float recovery strategies and milestone tracking – Specialisation areas to be covered by the DP: <ul style="list-style-type: none"> ○ Management ○ Senior Advisory 	NDip/B.Tech or international equivalent	10

CONTROLLED DISCLOSURE

Resource/s	Delivery Partner Service Areas / Skills set	Qualification	Years
Risk and Assurance	<ul style="list-style-type: none"> – Experience of project planning in power plant construction or similar projects – Extensive experience in developing and managing risk plans – Experience of Risk Management in power plant or similar projects and tracking and monitoring of the Risk Register – Experience in leading integration and managing site – Specialisation areas to be covered by the DP: <ul style="list-style-type: none"> o Management o Senior Advisory 	BSc/B.Tech or international equivalent	7
Governance & Reporting Analyst	<ul style="list-style-type: none"> – Experience in Risk Management and audits, governance and reporting analysis in similar projects – Experience in support of Programme Board operations, recording of KPIs/KRAs, preparation of dashboards, and maintaining audit trails 	NDip/B.Tech or international equivalent	7
Health & Safety Advisors	<ul style="list-style-type: none"> - Experience in Risk Management and audits, - Knowledge of Occupational, Health, Safety management stems (ISO 45001) - Experience in leading roles across areas of Health & Safety and Environmental, including oversight and reporting to internal and external stakeholders. - Experience in the management of regulatory and legislative health, safety and environmental requirements across all the project life cycle stages, including inspections and reporting 	BSc/B.Tech (Registered with Professional body)	5

CONTROLLED DISCLOSURE

Resource/s	Delivery Partner Service Areas / Skills set	Qualification	Years
Environmental Advisors	<ul style="list-style-type: none"> - Knowledge of development, maintenance and implementation of the Environmental Management systems (SO 14001) Environmental Legislations (Local and International), Waste and water Management, Environmental Impact assessment. - Experience in leading role in Environmental management at construction field, internal and external stakeholder liaison, including oversight, reporting presentation skills, environment auditing and inspections, training and awareness, application and implementation of environmental approvals requirements across all the project life cycle stages. 	BSc/B.Tech (Environmental Management/Sciences) (Registered with Professional body)	5
Quality Assurance Manager	<ul style="list-style-type: none"> - Experience in oversight and assurance of quality standards in similar projects, including reviews, reporting and inspections - Extensive experience in quality management systems, quality control and assurance - Experience in the delivery of quality requirements to the meet client expectations 	BSc/B.Tech	7

CONTROLLED DISCLOSURE

Resource/s	Delivery Partner Service Areas / Skills set	Qualification	Years
Local Relationship & Stakeholder Lead	<ul style="list-style-type: none">– Experience in internal and external stakeholder management of similar projects– Extensive experience in management of identification and engagement of all project stakeholders– Knowledge of community engagements– Experience in providing leadership and expertise in local relationships and liaison as well as leading stakeholder interactions	B.Degree/Human Sciences or international equivalent	5

* In a case where a specialist engineer is not professionally registered, the supplier shall provide an ECSA registered engineer in the same category as the specialist to sign.

CONTROLLED DISCLOSURE

Appendix B – Division of responsibilities between Employer, FIDIC and DP.

The following table shows the division of responsibilities for the roles involved.

Area of responsibility	Employer	DP as DP/PM	DP as FIDIC Engineer
Contract Authority	Signs contracts. Appoints both DP & FE.	Enters into OE contract with Owner/Employer to ensure technical compliance & act as technical advisor.	Acts per authority defined in FIDIC contract; independent and impartial.
Role Definition	Defines roles in tender documents & consultancy agreements.	Role and duties defined under DP specification.	Role and duties defined under FIDIC contract.
Design / Technical Scope	Defines requirements. Approves major decisions.	Reviews design documents for compliance to the requirements. Advices the Employer.	Issues approvals, ensures compliance to contractual requirements.
Design Changes	Final approver on scope changes / variations.	Advices the Employer on impacts.	Reviews, certifies variations. May issue variations. Ensures compliance to contractual requirements.
Design Review	Defines project, functional and performance requirements. Reviews milestone documents.	Performs independent technical review of the EPC's submissions for compliance against specifications, standards, codes & legislation. Advices Employer on acceptability. Coordinates design reviews between Employer/EPC. Issues design review report to Employer.	Reviews / accepts / reject design submissions. Issues approval statuses to EPC. Ensure contract compliance.

CONTROLLED DISCLOSURE

Area of responsibility	Employer	DP as DP/PM	DP as FIDIC Engineer
Schedule	Approves baseline schedules. Monitors milestone compliance. Final approver on schedule changes.	Reviews schedules and reports. Monitors progress. Advises on impacts.	Reviews schedules. Issues formal instructions.
Cost / Budget	Funds the project. Manages cash flow. Final approver on changes to budget.	Advises on cost estimates. Verifies (EPC) costs.	Certifies payments.
Procurement	Approves major procurement strategies and contracts	Review procurement plans and supplier list. Advises Employer.	-
Manufacturing	Monitors progress to ensure manufacturing aligns with schedule.	Attends inspections and FATs. Reviews manufacturing quality documents. Ensures equipment meets design requirements.	-
Construction / Site supervision	Grants site access. Approves construction milestones.	Oversees construction activities and quality. Monitors compliance to work instructions, procedures, safety, legal, permitting, environmental, etc. Advises and reports on non-compliance.	Issues instructions as required. Monitors compliance to contract.
QA / QC	Approves quality plans	Reviews QA/QC plans. Performs inspections.	-
SHE	Defines SHE requirements	Reviews SHE plans Monitors compliance.	-

CONTROLLED DISCLOSURE

Area of responsibility	Employer	DP as DP/PM	DP as FIDIC Engineer
	Approves EPC SHE plans		
Environment	Environmental Requirements	Review the environmental requirement file Monitor compliance	-
HR / IR	Defines requirements for labour relations for the projects (both for the DP and the EPC) Ensures compliance with labour laws. Conducts audits (e.g. skills).	Reviews EPC's HR/IR policies for compliance with contractual requirements / local laws.	Issues instructions or notices if HR/IR issues cause delays.
Stakeholder Management	Defines requirements for supplier's localisation and development efforts. Identifies all stakeholders, their importance and interests in the projects. Communicates with stakeholders.	Monitors and manages stakeholder list and expectations. Provides guidance on conflict management, mitigation strategies, and recovery potential particularly schedule.	Enforces contractual agreements.
Regulatory / Permits	Applies for and provides main site permits and consents.	Advises Employer on regulatory requirements. Main contact with authorities on Employer's behalf.	-
Testing & Commissioning	Approves commissioning plans.	Prepares pre-commissioning punch lists.	Witnesses the tests. Formally certifies performance / issues

CONTROLLED DISCLOSURE

Area of responsibility	Employer	DP as DP/PM	DP as FIDIC Engineer
	<p>Avails site (unit) for commissioning and testing.</p> <p>Arranges Employer requirements.</p>	<p>Reviews commissioning procedures.</p> <p>Observes tests.</p> <p>Assists Employer planning.</p> <p>Offers performance advice.</p>	<p>performance certificate.</p>
Handover	<p>Accepts completed final documentation.</p> <p>Verifies performance guarantees and contract requirements are met.</p> <p>Takes over the plant.</p>	<p>Reviews final documentation</p> <p>Advises Employer on whether works meet contractual requirements.</p> <p>Verifies all punch-list items and outstanding issues are closed.</p>	<p>Issues takeover certificate.</p>
Reporting & Decisions	<p>Receives reports.</p> <p>Makes strategic decisions.</p>	<p>Reports on technical and schedule.</p>	<p>Provides contractual and technical reporting.</p>
Claims / Dispute Resolution	<p>Resolves major disputes.</p> <p>Escalates unresolved disputes to DAAB or arbitration.</p>	<p>Advises on claims.</p>	<p>Evaluates and determines.</p>
Project Governance	<p>Sets requirements.</p> <p>Provides governance structure.</p>	<p>Assist with governance processes.</p>	<p>Enforces contractual agreements.</p>
Training	<p>Set requirements.</p>	<p>Reviews training plans and materials.</p>	<p>Enforces contractual agreements.</p>

CONTROLLED DISCLOSURE

CONTROLLED DISCLOSURE

Appendix C – Overview of Interfaces to the Existing Power Plant.

The following list includes all relevant interfaces between the new FGD plant (wet technology) and the existing coal-fired power plant, considering process, mechanical, electrical, instrumentation, civil, and structural connections. The list considers the retrofit of six units, each with a fabric filter (FF), and includes integration either of a gas-gas heat exchanger (GGH) or steam-gas heat exchanger (SGH) for reheating clean flue gas post-FGD before discharge through the chimney.

Process Interfaces:

1. Option 1: Flue Gas Flow Path with GGH
 - FF outlet to FGD inlet ducting (hot flue gas) - transport of hot, untreated flue gas
 - FGD outlet to GGH (cold side) – clean, saturated flue gas routed for reheating
 - GGH (hot side) inlet – tapping hot flue gas stream post FF for reheating
 - GGH outlet to stack inlet ducting – reheated clean flue gas conveyed to stack for release
2. Option 2: Flue Gas Flow Path with SGH
 - FF outlet to FGD inlet ducting – transport of hot, untreated flue gas
 - FGD outlet to Steam-to-Gas Heater (SGH) – clean, saturated flue gas routed for reheating
 - SGH outlet to chimney – reheated clean flue gas conveyed to stack for release
3. For option 2: Steam-to-Gas Heater (SGH) System
 - Steam supply line – interface with plant steam system (typically medium-pressure or low-pressure extraction steam)
 - Condensate return line – return of condensate from SGH to condensate recovery system or deaerator
4. Limestone Slurry Supply
 - Interface with limestone slurry preparation and distribution system
5. Gypsum Slurry Removal
 - Connection to dewatering units (e.g., hydro cyclones, belt filters)
 - Interface with gypsum storage and handling system
6. Process Water
 - Interface for makeup water supply to FGD absorber and spray systems
 - Demineralised water or raw water lines as per design
7. Wastewater Handling
 - Blow-down/wastewater line from FGD sump to wastewater treatment facility
8. Compressed Air

CONTROLLED DISCLOSURE

- For FGD system valves, actuators and instrumentation

Mechanical and Structural Interfaces:

1. Flue Gas Ducting
 - Duct transition between FF outlet and new FGD inlets
 - Large ductwork between FGD outlet and GGH/SGH
 - Ducting from GGH/SGH outlet to the existing or new chimney
2. Gas Heater Unit
 - Physical integration of GGH/SGH into flue gas line
 - Mounting on structural steelwork or foundation block
 - Insulation and expansion joints for thermal protection
3. Chimney Modifications
 - If common or shared stack: interface with flue liner or bypass flue provisions
 - Possible structural alterations for new flue entries
4. Structural Steelwork
 - Supports for FGD absorber towers, GGH/SGH units, ducts, fans
 - Connection to existing plant structures or new steel substructures
5. Foundations and Civil Works
 - Foundations for FGD equipment, pumps, tanks, GGH/SGH, ID fans
 - Roads, access platforms, drainage tie-ins, and cable trenches

Electrical Interfaces:

1. Power Supply
 - Power distribution panels for new FGD equipment (pumps, mixers, fans, GGH/SGH)
 - MCC (Motor Control Centres) integration with existing power system
2. Standby Power
 - Interface with back-up or emergency power systems
 - Stand-by supply for critical loads (FGD circulation, GGH/SGH control systems)
3. Grounding and Lightning Protection
 - Earthing connections of GGH/SGH, pumps, control panels, and steel structures to the plant's main grounding grid

CONTROLLED DISCLOSURE

Instrumentation and Control Interfaces:

1. Control Signals
 - Signal exchange between new FGD local control system and existing plant DCS
 - Interface for remote control and monitoring of FGD processes
2. Instrumentation
 - Pressure, temperature, flow, pH, SO₂ sensors, steam flow (SGH)
 - Data acquisition and signal transmission cables
3. Alarms and Safety Interlocks
 - Integration of FGD alarms with existing central control room
 - Safety shutdown signals and emergency trip logic interfacing

Other Interfaces:

1. Bridges/Racks
 - Pipe racks/bridges
 - Cable trays
 - Conveyors
2. Maintenance and Access
 - Access ways, roads, platforms, lifting facilities integrated into plant logistics
3. Fire Detection and Protection
 - Tie-in with existing fire detection and suppression systems
4. Environmental Monitoring
 - Stack emissions monitoring system (CEMS) integration and modifications
 - Interfaces for sampling ports and data transmission

CONTROLLED DISCLOSURE