	Request for Information (RFI) Template	Document Identifier	240-72663051	Rev	2
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		Review Date	March 2030		
		RFI Number	E1738CXMWP		

PART A REQUEST FOR INFORMATION (RFI) E1738CXMWP			
Description of the works/goods/services	E1738CXMWP -Request to obtain information about the Kendal Power Station: Demonstration of Semi-Dry Flue Gas Desulphurisation (FGD) Plant		
Deadline for submission	26 September 2025	At (South African Standard Time)	10h00
Enquiries/ Eskom Representative	Monica Shuping ShupinDM@eskom.co.za		
Tender Office address	Tenders are uploaded via Eskom Tender bulletin site on the Eskom E-tendering page.		
RFI are to be submitted electronically via Eskom E- tendering site by the stipulated closing date and time. <i>Please note it is the responsibility of the supplier to ensure that RFI submission is submitted before the closing date and time</i>	Tenders are uploaded via Eskom Tender bulletin site on the Eskom E-Tendering page. https://eTendering.eskom.co.za/tender/		
Electronic Submission of RFI	<p>The tenderer must upload the tender via Eskom Tender bulletin site on the Eskom E- tendering page.</p> <p>All documents need to be submitted in a PDF and Excel format (The limit is 50MB per file and total submission of 900MB per submissions). No Zip/condense files can be uploaded No hard copy will be accepted</p> <p>If for some reason you resubmit your RFI, then the latest version of the RFI submitted will only be accepted and all previous submission/s will be null and void.</p> <p>Please ensure that the submission status is indicated as complete.</p> <p>Supplier Help Manual guide and video can be found on Eskom E-Tendering page</p>		
E-tendering Help Manual for supplier	available on e-tendering platform.		

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Eskom Holdings SOC Ltd ("Eskom") invites you to submit an:

- **Request for information (RFI)** to submit information for the works/goods/services as stated in the table. This RFI is a stand-alone information-gathering and market-testing exercise, intended only to inform and assist Eskom's further deliberation and development of a strategy for the Demonstration of Semi-Dry Flue Gas Desulphurisation (FGD) Plant Eskom may request indicative prices if so stated in this RFI.

Eskom has delegated the responsibility for this **RFI** to the **Eskom Representative**, whose details can be found above.

We look forward to receipt of your response.

Yours faithfully



Procurement Manager

Shamani Padayachee

Date: 21 August 2025

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		RFI Number	E1738CXMWP		

Please find below our response to Eskom's questions:

DEFINITIONS

In this Document, except as otherwise defined herein, the following terms shall have the following meanings:


B-BBEE	- means Broad-Based Black Economic Empowerment.
ERIC	- Eskom Research and Innovation Centre that is located at Lower Germiston Road, Rosherville, Gauteng.
Procurement Process	- Means the procurement process being conducted in terms of this RFI in respect of the Project or requested information.
RT&D	- Research, Testing and Development, a business unit in Eskom.
Respondent	- any entity or consortium that submits a Response to this Document.
State Owned Company or SOC	- a legal entity that is or has previously been created by the Government in order to partake in commercial activities on the Government's behalf, where in the context of the Project, such entity may include any entity with a mandate to engage in the energy or financing sector.
Gx, Dx and Tx	- Generation, Transmission and Distribution.

INTRODUCTION AND BACKGROUND

Kendal Power Station

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Kendal Power Station is located 40 km west of Emalahleni in Mpumalanga. Construction started in July 1982 and the last of its six 686MW coal fired power generating units went into full operation in 1993. For each unit, flue gas generated from the combustion process is cooled by air heaters, conditioned with sulphur trioxide (SO₃) and passed through electrostatic precipitators (ESP's), to reduce the particulate matter (PM) content. Induced draught (ID) fans allows the flue gas to be emitted through stacks. The main flue gas constituents are carbon dioxide (CO₂), sulphur oxides (SO_x), nitrogen oxides (NO_x) and particulate matter (PM).

Kendal Power Station is not equipped with sulphur dioxide (SO₂) abatement systems and is currently licensed to operate with the emission limit for SO₂ at 3500mg/Nm³ at 10% O₂ dry. The current exemption is in place for a limited period and is not indefinite; therefore, Eskom intends to explore semi-dry flue gas desulphurisation (FGD) options for sulphur reduction in flue gas at Kendal Power Station to verify and validate the technology for deployment.

Semi Dry FGD Demonstration Strategy

This phase of the project is aimed at implementing a two phased demonstration of a commercially proven semi dry FGD system at Kendal Power Station. Phase 1 will involve the installation of a single absorber module to assess technical performance, integration with existing systems and operational requirements at a reduced scale. The balance of plant, however, would allow for future expansion to full scale capacity (100% flue gas flow) with minimal re-design. The demonstration set up should enable optimisation and resolution of issues before scaling up to treat 100% of flue gas flow from the unit. The modular demonstration and thereafter the unit demonstration will inform decision making regarding semi-dry FGD deployment at Kendal Power Station.


The demonstration phases are intended to:

- Verify:
 - System performance under site specific flue gas conditions including performance regarding fuel specifications and load
 - Determine and verify the SO₂ removal efficiency that can be obtained
 - Reagent consumption
 - Implementation schedule (duration required)
 - Sourcing feasibility of sorbent
- Validate:
 - Techno-economic analysis of this technology compared to a dry FGD such as Direct Sorbent Injection (DSI)
 - Costs for implementation
 - Operational and maintenance requirements
 - Evaluate the ease of implementation and integration with existing systems, and
 - Provide data to understand the scaling up potential and requirements if deemed feasible

Respondents are required to furnish relevant information on semi dry FGD systems i.e. Spray Dry Absorber (SDA) FGD or Circulating Fluidised Bed (CFB) FGD technologies that can potentially be demonstrated at Kendal Power station to reduce the SO₂ concentration in flue gas to meet the new emissions limits indicated in Table 1. The information provided by

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suppliers will be used by Eskom to inform strategic business decisions and evaluate a solution that is suitable for possible demonstration.

DESCRIPTION OF INFORMATION THAT NEEDS TO BE PROVIDED

As part of the Request for Information, suppliers are requested to provide comprehensive preliminary information for the design, construction, operation and maintenance of a semi dry FGD system at Kendal Power Station. The primary objective of this request is to collect relevant technical insights and establish a baseline, which will inform and guide further development and potential implementation of a demonstration plant at Kendal. The information furnished should encompass typical design parameters, design philosophy, performance specifications, demonstration methodology, as well as capital costs and operational costs for budget purposes. The proposed system must achieve the following parameters: particulate matter (PM) Guarantee: 40 mg/Nm³, dry at 10% O₂, SO₂ Guarantee: 800 mg/Nm³, dry at 10% O₂ also shown in Table 1.

Respondents are encouraged to submit information (e.g. sorbent requirements, water requirements, waste generated, etc.), on solutions that can achieve the emissions guarantees, including operational data, case studies or reference plant performance data and results from previous installations. Specific questions or requested information for respondents are in Table 2.

Table 1: Minimum Emissions Standards for SO₂ and PM

Pollutant and Emission	Existing Emissions License Limits mg/Nm ³	New Minimum Emission limits mg/Nm ³	Guaranteed Emission Value mg/Nm ³
SO ₂	3500	1000	800
PM	100	50	40


PURPOSE AND STRUCTURE OF THE RFI

- 1) The objective of this RFI is to obtain market information from interested Suppliers/Service providers for Demonstration of Semi-Dry Flue Gas Desulphurisation (FGD) Plant
- 2) The future Demonstration of Semi-Dry Flue Gas Desulphurisation (FGD) Plant specifications will be developed based on the technologies that are available in the market.
- 3) Service providers/Suppliers are encouraged to provide complete information as much as possible.
- 4) Responses submitted should be as comprehensive as possible and include information requested and any supporting documentation in respect thereof. If proprietary information is included in the response, the clauses on the use of such information must be indicated.

BENEFITS TO ESKOM

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Demonstrating semi-dry FGD will enable Eskom to increase its knowledge base regarding the suitability and applicability of semi dry FGD and ensure compliance with environmental mandates to reduce SO₂ emissions. Additionally, the demonstration phase supports objectives to assess technical and economic feasibility of adopting the technology. The main benefit is to provide Eskom with market and technology insights that can be used as part of the decision-making process regarding semi dry FGD implementation at Kendal as well as aid the development of the demonstration phase of the semi-dry flue gas technology.

The demonstration is expected to yield results such as optimisation of reagent consumption and operational efficiency while minimising water usage and waste generation. The testing phase will be critical to:

- Verify system performance under site specific flue gas conditions including performance regarding fuel specifications and load
- Verify and optimise the SO₂ removal efficiency that can be obtained
- Verify and optimise reagent consumption
- Understand operational and maintenance requirements
- Evaluate the ease of implementation and integration with existing systems
- Provide data to understand the scaling up potential and requirements if deemed feasible
- Provide Eskom with market and technology information that can be used as part of the decision-making process regarding FGD implementation at Kendal

INFORMATION REQUESTED


Respondents are requested to provide the following information on a potential semi dry FGD system for demonstration at Kendal Power Station.

Table 2: Information Requested

No.	Information requested	Response Reference
5.1.1	Supplier profile details such as: <ul style="list-style-type: none"> • Company Name • Company structure and staff compliment • Capability to provide and operation and maintenance (O&M) service • Local South African agent or representative if available. • Product name • Relevant experience regarding semi dry FGD systems • References for similar projects (commercial/ demonstration) • Estimated percentage of local content for associated technology 	

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5.1.2	Product Description <ul style="list-style-type: none"> Scientific basis of technology Commercial readiness level of technology Unique features of the technology Capacity basis – <ul style="list-style-type: none"> Absorber module capacity (% of flue gas flow or percentage of boiler load or proposed modular demonstration capacity) Proposed number of absorbers to treat 100% flue gas from the unit Balance of plant capacities Indication of how redundancy of plant is built into capacity Limitations on the flue gas feed for the technology in terms of concentration of gas and particulate matter constituents and other process parameters Design life of plant Implementation timeline of the technology for the demonstration phases and an indication of timelines for full scale unit deployment Key technology risks Typical footprint and height range for <ul style="list-style-type: none"> Module Balance of plant Plant to treat 100% flue gas flow from the unit The scalability and flexibility of operation Brochure Process flow diagram General arrangement drawing 	
5.1.3	Demonstration Strategy or Plan <ul style="list-style-type: none"> How well does the system align with the demonstration strategy? 	
5.1.4	Mass and Energy Balance to accompany P&ID, including <ul style="list-style-type: none"> Technology performance characteristics of the technology including but not limited to: SO₂ removal efficiency Reagent consumption rate and specification Process Water consumption rate and specifications Waste generated and Waste classification Chemical reactions Concentrations of components in treated flue gas Process sensitivities <ul style="list-style-type: none"> Coal Quality impact Station load variability impact classification Inlet flue gas limits and impacts of high particulate matter 	

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	<ul style="list-style-type: none"> Utilities Required <ul style="list-style-type: none"> Cooling water requirements Electrical supply Compressed air required Control and instrumentation interface requirements and number of signals Modifications/upgrade of existing equipment Sorbent and proposed plan for sorbent sourcing to Kendal 	
5.1.5	Design philosophy <ul style="list-style-type: none"> Process Description Operating and control philosophy, including control and protection philosophy of existing boiler if technology is utilised Maintenance and redundancy philosophy Integration with existing plant or retrofitting narrative or philosophy Requirements or upgrades required for existing plant such as draught plant, particulate emission abatement technology upgrades, boiler protection to ensure performance Functional descriptions Operating and performance parameters of key components. Demonstration plan of proposed technology End-of-Life management plan for the technology 	
5.1.6	Maintenance philosophy of key components: <ul style="list-style-type: none"> Availability of spares required for routine operations and maintenance. Can equipment be repaired locally in South Africa? Typical wear parts and replacement time frames. Service intervals and duration. Details of typical service and maintenance contracts available and recommended for the equipment supplied. Typical service costs, including repairs, spares and labour for each type of service. Reliability and availability statistics from previous installations. Specialised engineering, operating and maintenance skills. Redundancy philosophy 	
5.1.7	Budget Costs <ul style="list-style-type: none"> Capital: budgetary cost estimated for the design, supply, and installation for Lifecycle cost assessment Operating expenditure in South African Rand (ZAR) per kilowatt hour (kWh). Cost of sorbent sourcing 	

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5.1.8	Supply of equipment for demonstration: <ul style="list-style-type: none"> • Typical demonstration volume and scalability guarantee. • Integration to existing plant • A letter of intent if willing to implement a demonstration plant • Terms and conditions for the use of the equipment. • Typical guarantees and warranties that would be offered for the equipment and systems supplied. • Provide information on after sales service capability: <ul style="list-style-type: none"> • Training Requirements • Upskilling/retraining requirements. • Certification of operator requirements 	
5.1.9	Provide reference details <ul style="list-style-type: none"> • Name of facility. • Capacity. • Date of initial deployment. • Date of commercial operation • Lead time: Contract award to commercial operation • Outage Duration • Years of operation after technology deployment, reason for removal if any. • Size of the plant medium, Footprint, and specification. • Lessons learned from the deployment, demonstration, or operation of semi-dry FGD systems. Interfaces to and/or upgrades other plant such as draught plant, particulate abatement control plants and dust/ash handling plants etc. • Possibility of site visit to reference installation/s. 	
5.1.10	General <ul style="list-style-type: none"> • Provide information on the relevant standards, permitting and licensing authorisations (including environmental and other) that the technology should comply to. An estimate of the time required to obtain necessary authorisations to be provided. • Information on relevant Case Studies / literature. • Intellectual property details if applicable • Alternate Options: Alternate technologies or configurations or approaches that is deemed to meet the emissions requirements and intent of demonstration • Additional information in respect of the technology which is deemed necessary to bring to the attention of Eskom. 	

ADDITIONAL INFORMATION:

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Specifications

Respondents are encouraged to submit information (e.g. sorbent requirements, water requirements, waste generated, etc.), on solutions that can achieve the emissions guarantees, including operational data, case studies or reference plant performance data and results from previous installations. Specific questions or requested information for respondents are in section 5. SO₂ concentration in flue gas from the proposed demonstration plant must meet or be below the thresholds indicated in Table 3.

Table 3: Specification for Minimum Emissions Standards for SO₂ and PM

Pollutant and Emission	Existing Emissions License Limits mg/Nm ³	New Minimum Emission limits mg/Nm ³	Guaranteed Emission Value mg/Nm ³
SO ₂	3500	1000	800
PM	100	50	40

Plant Specific Information

Note: The following plant specific information is provided for information purposes only, to assist the respondents to prepare a pre-concept assessment required for their submission in response to the Request for Information (RFI).

Kendal consists of 6 x 686 MW Units burning coal using a corner fired drum type boilers. Each boiler consists of 5 x 104 ton per hour coal mills. The units were commissioned between 1988 to 1993, and the 50-year design life assumes the station will decommission between 2039 to 2044, with possibility of extension. The units are expected to run in a load following mode and utilise fuel oil for fuel oil supported firing instances.

Site Constraints


Respondents may indicate if a site visit is required to inform their response. There is limited space available at the units. Constraints and limitations exist and vary at each unit. These will need to be factored in to developing the layout. Nearby infrastructure to the draught plant to consider include but not limited to:

- Fuel Oil Tanks
- Ash Resources
- Inclined conveyors

Design Raw Water Quality

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The water supplied to the power station from both the Grootdraai Dam and/or the Usutu-Vaal Dam system.

Table 4: Station Design Raw Water Quality

Parameters	Unit	Vaal	Usuthu
Conductivity	mS/m	287	78
Turbidity	NTU	32	1.6
Sulphate	mg/l	19.5	4
Chloride	mg/l	11.2	3.1
Sodium	mg/l	15.9	4.9
pH		8.2	7.8
m-alkalinity	mg/l	105	26
Total Hardness	mg/l	106	26
Magnesium	mg/l	*	*
Suspended Solids	mg/l	*	*

* Not available

Fan Volumes and Pressures at Various Loads

The design draught plant fan capabilities are listed below (per fan, two of each per unit):

Table 5: Draught Group Fan Specifications

Unit	Generated Load Factor (%)	Am ³ /s			Pressure (kPa)		
		ID Fan	FD Fan	PA Fan	ID Fan	FD Fan	PA Fan
1 - 6	100	697	514	183	4.859	3.255	7.707
	80	596	419	178	5.236	2.972	6.591
	60	505	333	172	3.74	2.534	5.91
	40	378	210	168	3.48	1.981	5.784

ESP Basic Information


Electrostatic Precipitator (ESP is aided with Sulphur Trioxide Flue Gas Conditioning

Table 6: ESP Information

ESP Basic Information		Unit
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Parallel Casings	2	#
Plate Height	15	m
Plate Length (curtain)	3.5	m
Lanes per Casing	76	#
Pitch between Lanes	400	mm
Fields in Series	7	#
Plate Area	111 720	m ²
No. of TR Sets per Unit	28	#

Coal Quality


Table 7: Indication of Rejection Coal Qualities for Information

Total Moisture [%]	>9
GCV [MJ/kg] -MF	<18.84
GCV [MJ/kg]-AD	<18.27
GCV [MJ/kg]-AR	<17.14
Ash [%] -MF	>36.8
Volatiles [%] -MF	<19.69
Sulphur [%] -MF	>0.93
Al [mg Fe]	>450
HGI	<55
FEGT [deg C]	1193

PART B RESPONSE SHEET IN TERMS OF A REQUEST FOR INFORMATION

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To be completed by the supplier

To	Eskom Holdings SOC Ltd	Date	
Attention			
Tel no		Fax no and /or e-mail address	
From		Address	
Address			
Sender			
Description of the works/goods/services	E1738CXMWP -Request to obtain information about the Kendal Power Station: Demonstration of Semi-Dry Flue Gas Desulphurisation (FGD) Plant		

Please find below our response to Eskom's questions:


1. RESPONDENT INFORMATION

No.	Question	Please indicate your response in this column
1.	Name of the Respondent	
2.	The name and contact details of the person appointed by the Respondent as its representative in the event that Eskom needs to contact the company for clarification or further details.	
3.	Company profile and description of key service offerings and capacities.	
4.	Is the respondent/company an existing registered Eskom vendor? (Please provide vendor registration details)	
5.	Provide details on respondent/Company empowerment, localisation credentials (Black Youth & Women Owned Enterprise, BBBEE Enterprise etc)	
6.	Is the company locally based or have a local office in South Africa? If no, indicate if the company is familiar with the requirements of South African State-Owned Companies tendering processes.	

2. SECTION A – SEMI DRY FGD

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No.	Question	Please indicate your response in this column
5.1.1	Supplier profile details such as: <ul style="list-style-type: none"> • Company Name • Company structure and staff compliment • Capability to provide and operation and maintenance (O&M) service • Local South African agent or representative if available. • Product name • Relevant experience regarding semi dry FGD systems • References for similar projects (commercial/ demonstration) • Estimated percentage of local content for associated technology 	
5.1.2	Product Description <ul style="list-style-type: none"> • Scientific basis of technology • Commercial readiness level of technology • Unique features of the technology • Capacity basis – <ul style="list-style-type: none"> ○ Absorber module capacity (% of flue gas flow or percentage of boiler load or proposed modular demonstration capacity) ○ Proposed number of absorbers to treat 100% flue gas from the unit ○ Balance of plant capacities ○ Indication of how redundancy of plant is built into capacity • Limitations on the flue gas feed for the technology in terms of concentration of gas and particulate matter constituents and other process parameters • Design life of plant • Implementation timeline of the technology for the demonstration phases and an indication of timelines for full scale unit deployment • Key technology risks • Typical footprint and height range for <ul style="list-style-type: none"> ○ Module ○ Balance of plant ○ Plant to treat 100% flue gas flow from the unit • The scalability and flexibility of operation • Brochure • Process flow diagram • General arrangement drawing 	
5.1.3	Demonstration Strategy or Plan	

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	<ul style="list-style-type: none"> How well does the system align with the demonstration strategy? 	
5.1.4	<p>Mass and Energy Balance to accompany P&ID, including</p> <ul style="list-style-type: none"> Technology performance characteristics of the technology including but not limited to: SO₂ removal efficiency Reagent consumption rate and specification Process Water consumption rate and specifications Waste generated and Waste classification Chemical reactions Concentrations of components in treated flue gas Process sensitivities <ul style="list-style-type: none"> Coal Quality impact Station load variability impact classification Inlet flue gas limits and impacts of high particulate matter Utilities Required <ul style="list-style-type: none"> Cooling water requirements Electrical supply Compressed air required Control and instrumentation interface requirements and number of signals Modifications/upgrade of existing equipment Sorbent and proposed plan for sorbent sourcing to Kendal 	
5.1.5	<p>Design philosophy</p> <ul style="list-style-type: none"> Process Description Operating and control philosophy, including control and protection philosophy of existing boiler if technology is utilised Maintenance and redundancy philosophy Integration with existing plant or retrofitting narrative or philosophy Requirements or upgrades required for existing plant such as draught plant, particulate emission abatement technology upgrades, boiler protection to ensure performance Functional descriptions Operating and performance parameters of key components. Demonstration plan of proposed technology End-of-Life management plan for the technology 	
5.1.6	<p>Maintenance philosophy of key components:</p> <ul style="list-style-type: none"> Availability of spares required for routine operations and maintenance. Can equipment be repaired locally in South Africa? Typical wear parts and replacement time frames. 	

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	<ul style="list-style-type: none"> • Service intervals and duration. • Details of typical service and maintenance contracts available and recommended for the equipment supplied. • Typical service costs, including repairs, spares and labour for each type of service. • Reliability and availability statistics from previous installations. • Specialised engineering, operating and maintenance skills. • Redundancy philosophy 	
5.1.7	Budget Costs <ul style="list-style-type: none"> • Capital: budgetary cost estimated for the design, supply, and installation for • Lifecycle cost assessment • Operating expenditure in South African Rand (ZAR) per kilowatt hour (kWh). • Cost of sorbent sourcing 	
5.1.8	Supply of equipment for demonstration: <ul style="list-style-type: none"> • Typical demonstration volume and scalability guarantee. • Integration to existing plant • A letter of intent if willing to implement a demonstration plant • Terms and conditions for the use of the equipment. • Typical guarantees and warranties that would be offered for the equipment and systems supplied. • Provide information on after sales service capability: <ul style="list-style-type: none"> • Training Requirements • Upskilling/retraining requirements. • Certification of operator requirements 	
5.1.9	Provide reference details <ul style="list-style-type: none"> • Name of facility. • Capacity. • Date of initial deployment. • Date of commercial operation • Lead time: Contract award to commercial operation • Outage Duration • Years of operation after technology deployment, reason for removal if any. • Size of the plant medium, Footprint, and specification. • Lessons learned from the deployment, demonstration, or operation of semi-dry FGD systems. Interfaces to and/or upgrades other plant such as draught plant, particulate abatement control plants and dust/ash handling plants etc. • Possibility of site visit to reference installation/s. 	
5.1.10	General <ul style="list-style-type: none"> • Provide information on the relevant standards, permitting and licensing authorisations (including environmental and other) 	

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	<p>that the technology should comply to. An estimate of the time required to obtain necessary authorisations to be provided.</p> <ul style="list-style-type: none"> • Information on relevant Case Studies / literature. • Intellectual property details if applicable • Alternate Options: Alternate technologies or configurations or approaches that is deemed to meet the emissions requirements and intent of demonstration • Additional information in respect of the technology which is deemed necessary to bring to the attention of Eskom. 	
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