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		Effective Date	01 August 2016		
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		RFI No.	MPKUS10586GX		

**PART A
REQUEST FOR INFORMATION (RFI)**

Description of the works/goods/services

Request for information on Chemical Analysis for Wet Flue Gas Desulfurization

Kusile Power Station is the first power station in Africa to implement wet flue gas desulphurization (WFGD) technology at each of its six units. The purpose of this atmospheric emission abatement technology is to remove oxides of sulphur from the exhaust flue gas thereby ensuring compliance with air quality standards.

To ensure long-term plant health and compliance with environmental legislation, the chemistry of the WFGD system is required to evaluate and optimise process performance.

The following is being requested from potential suppliers:

- a) Information and pricing are being sought to conduct chemical analyses as per the required sampling and analysis routine, with rapid turnaround time.
- b) Information and pricing on implementing a mobile laboratory on site to provide the service.
- c) Additionally, guidance is requested on how to set up a permanent WFGD laboratory on site to conduct these analyses.

NB: The outcome of the RFI may be used for contracting purposes without following an open enquiry process.

DESCRIPTION

Information and pricing are being sought from applicable suppliers to conduct selected chemical analyses of WFGD process streams at the required frequencies. Information is also required on the set up of a mobile WFGD laboratory; such that, this laboratory has the capability to conduct the selected chemical analyses on site at Kusile Power Station. The mobile laboratory must be installed with the analytical equipment required to conduct the various chemical analyses required as well as the staff to operate and maintain the system for a period of 24 months.

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SCOPE OF WORK


- Information and pricing to conduct selected chemical analyses of WFGD process streams at the required frequencies as indicated below. Please provide the cost per sample and parameter analysed.
- It must be noted that the samples are high concentration streams with high scaling potential. The samples include slurry mixtures (where both the filtrate and solids require analyses) and samples with low pH ranges. The following table indicates the typical ranges for major analytical parameters to be analysed.

	Units of Measurement	Range of Detection Required
pH	-	4 - 8
Total Dissolved Solids	mg/kg	50 000 – 150 000 aqueous
Calcium	mg/l as CaCO ₃	4 000 – 20 000
Sulfate	mg/l	1 500 – 8 000
Sulfite	mg/l	<20
Nitrate	mg/l	100 – 1 500
Fluoride	mg/l	30 - 200
Magnesium	mg/l as CaCO ₃	200 – 5 600
Sodium	mg/l	75 - 1200
Chloride	mg/l	< 30 000
Iron	mg/l	30 - 400
Aluminium	mg/l	50 - 800
Arsenic	mg/l	0.05 - 3
Boron	mg/l	20 - 40
Cadmium	mg/l	0.04 - 0.5
Cobalt	mg/l	0.05 – 0.4
Chromium	mg/l	0.3 - 5
Copper	mg/l	0.1 – 0.85
Mercury	mg/l	0.05 – 0.8
Nickel	mg/l	0.2-6

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Lead	mg/l	0.1 - 3
Selenium	mg/l	0.2 - 1
Vanadium	mg/l	<2.4
Zinc	mg/l	5 - 10
Ammonium	mg/l	<10 - 100
COD	mg/l	100 - 150
TSS	mg/l	300 – 10 000
Density	kg/m ³	1050 - 1800

- Valid accreditation for each analysis shall be provided where available.
- A list of all analytical instruments that will be utilised to conduct the analysis.
- The supplier shall indicate the minimum lead / turnaround time from receipt of samples to issuing of results.
- Also include the cost of transport for the option of fetching the samples from the Kusile Power Station site
- Information for a mobile WFGD laboratory at Kusile Power Station; such that this laboratory has the capability to conduct the selected chemical analyses on site to minimise the turnaround time for the results. Information provided must include the following:
 - Utility requirements for the mobile laboratory (water, drainage, power, etc.)
 - Civil requirements – footprint and loading
 - Resources required to meet the required analytical frequency, 365 days a year for a total duration of two years.
 - A senior supervisor must be included and will be required to report to the Chemical Services Manager
 - Inputting and managing of the data analysis on Eskom's LIMS database.

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SERVICES


Information and pricing to conduct the following chemical analyses of WFGD process streams at the required frequencies. The Cost must be indicated per sample analysis. The frequency of analysis may increase during start-up or plant upset conditions.

WFGD Chemistry Parameters	Number of Samples	Measurement Frequency during Normal Operation
FGD Process Streams		
pH	18 (3 x 6 units)	Daily
*Specific Gravity/ Density/ Suspended Solids	6	Daily
*Specific Gravity/ Density/ Suspended Solids	6	Weekly
*Specific Gravity/ Density/ Suspended Solids	6	Weekly
*Specific Gravity/ Density/ Suspended Solids	6	Twice a week
*Specific Gravity/ Density/ Suspended Solids	6	Twice a week
Total Dissolved Solids	6	Twice a week
Slurry Chemistry		
Filtrate: Mg, Ca, Na, K, F, Al, SO ₄	6	Weekly
Solids: Ca, SO ₄	6	Weekly
Conductivity	6	Weekly

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		Commercial Grade Gypsum		
		Residual/Free Moisture	36	Daily
		CaSO ₄ •2H ₂ O (purity)	6	Daily
		Crystal size	6	Monthly or analysis as required if free moisture increases
		Heavy metals	6	Monthly
		Free silica	6	Monthly
		Aspect ratio Z to Y/whiteness	6	Monthly
		Sodium di -oxide, water soluble	6	Daily
		Sodium di-oxide, total	6	Monthly
		Magnesium oxide, water soluble	6	Daily
		Magnesium oxide, total	6	Monthly
		Nickel	6	Monthly
		Vanadium	6	Monthly
		Ammonia	6	Monthly
		CaCO₃		
		Slurry particle size	6	Weekly
		Particle size	6	Monthly
		Purity	6	Weekly
		Reactivity	6	Weekly
		Make-up Water Chemistry		
		pH	1	Weekly
		Conductivity	1	Weekly
		M-Alkalinity	1	Weekly
		Total Hardness	1	Weekly
		CaCO ₃	1	Weekly

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MgCO ₃	1	Weekly
Sulfate	1	Weekly
Chloride	1	Weekly
Fluoride	1	Weekly
Sodium	1	Weekly
Reclaim and Recycle Water Chemistry		
pH	6	Weekly
Conductivity	6	Weekly
M-Alkalinity	6	Weekly
P- Alkalinity	6	Weekly
Total Hardness	6	Weekly
CaCO ₃	6	Weekly
MgCO ₃	6	Weekly
Sulfate	6	Weekly
Chloride	6	Weekly
Fluoride	6	Weekly
Sodium	6	Weekly

**This analysis is conducted on different process streams*

Guidance on how to set up a permanent WFGD laboratory; such that, this laboratory has the capability to conduct the above chemical analyses. This guidance shall include recommendations for:


- Laboratory equipment
- Personnel
- Selection of analytical methods
- Laboratory safety
- Quality control

1. The supplier must indicate all utilities that are required to be provided by the Employer.

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2. References of previous contractors/services to be supplied with contract numbers as well as the clients.
3. Provide a budget cost for the supply, delivery, installation, and commissioning of the equipment
4. Provide a budget cost for the supply, delivery, installation, commissioning, operation, and maintenance of the equipment
5. Indicate the typical estimated lead time for the delivery.
6. Indicate any exclusions from the Contractor's supply.

Clarifications must be sent via e-mail to the following Eskom email address:
MokwenRJ@eskom.co.za

BASIC COMPLIANCE

In order to avoid the risks of tender tampering and/or the disclosure of confidential information during tender evaluations, tenderers are required to supply Eskom with two exact copies of the tender in the following format and quantities, by the deadline for tender submission:

HARD COPIES – 1 ORIGINAL AND 1 EXACT COPY OF THE TENDER

Failure to provide the necessary copies by the deadline for RFI submission will immediately render their RFI nonresponsive and will be disqualified from further evaluation. Tenderers will not be permitted to provide the required copies after the deadline for tender submission have passed, and Eskom will not be responsible for the making of copies for the purposes of evaluation.

RFI will be opened at the same date and time as the tender deadline.


RFI will be opened on: 09 March 2023

**Place: Eskom Holdings SOC Limited
The Tender Advice Centre – Tender box at Main Reception Area
10 Smuts Avenue,
Witbank,
1035
Tender Closing Date: 09 March 2023
Time: 10.00 am**

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	Address your RFI to: Romeo Mokwena RFI number: MPKUS10586GX Eskom Holdings SOC Limited The Tender Advice Centre – Tender box at Main Reception Area 10 Smuts Avenue, Witbank, 1035		
Deadline for submission	09 March 2023	At (South African Standard Time)	10h00
Tender Office address	Eskom Holdings SOC Limited The Tender Advice Centre – Tender box at Main Reception Area 10 Smuts Avenue, Witbank, 1035		


Eskom Holdings SOC Ltd (“Eskom”) invites you to submit a:

- Request for information (RFI) on chemical analysis for the wet flue gas desulfurization process streams 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 Chemical Analysis for Wet Flue Gas Desulfurization Process Streams. Eskom requests indicative prices.

Eskom has delegated the responsibility for this **RFI** to the signatory of this document, whose details can be found below.

We look forward to receipt of your response.


Yours faithfully

Name	Designation	Signature	Date
Romeo Mokwena	Officer Procurement		09 February 2023
Telephone number	013 699 7369	Fax and/or e-mail address	MokwenRJ@eskom.co.za

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PART B RESPONSE SHEET IN TERMS OF A REQUEST FOR AN EXPRESSION OF INTEREST /REQUEST FOR INFORMATION To be completed by the supplier			
To	Eskom Holdings SOC Ltd	Date	
Attention	Romeo Mokwena		
Tel no		Fax no and /or e-mail address	
From		Address	
Address			
Sender			
Description of the works/goods/services			

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Please find below our response to Eskom's questions:

No.	Question	Please indicate your response in this column
1.	<i>Your contact's name and contact details</i>	
2.	<i>Company registration number</i>	

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3.	<i>Brief description of previous experience and Description of the solution that you can offer</i>	
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4.	<i>Indicative prices</i>	
5.	<i>[Add applicable questions]</i>	

Yours faithfully

Name	Designation	Signature	Date
Telephone number		Fax and/or e-mail address	

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