	Request for Information (RFI)	Document Identifier	240-72663051	Rev	1
		Effective Date	October 2022		
		Review Date	October 2027		
		RFI Number	MWP1892CX		

PART A REQUEST FOR INFORMATION (RFI)			
Description of the works/goods/services	Demonstration of commercial alkali activated coal ash applications in Shotcrete, grouting for backfill, road stabilisation and the development of "lego" blocks for weights		
Deadline for submission	03 May 2023	At (South African Standard Time)	10h00
Tender Office address	Eskom Megawatt Park Tender Office Retail Centre 1 Maxwell Drive Sunninghill 2000		

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


- **Request for information (RFI)** to submit information for the works/goods/services as stated below. 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 Ash Beneficiation project. Eskom may request indicative prices if so stated in this RFI.

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

- The Eskom Representative
Name: Dineo Maepa
Tel no: (017) 749 5775
E-mail: MaepaDN@eskom.co.za


We look forward to receipt of your response.

Yours faithfully

Name	Designation	Signature	Date
Damela Mathetja	Procurement Manager		20 March 2023
Telephone number	011 800 5611	E-mail address	MathetD@eskom.co.za

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PART B RESPONSE SHEET IN TERMS OF A REQUEST FOR INFORMATION To be completed by the supplier			
To	Eskom Holdings SOC Ltd	Date	
Attention	Dineo Maepa		
Tel no <i>[insert your tel number]</i>		Fax no and /or e-mail address	
From <i>[insert the registered full legal name of the company]</i>		Address <i>[insert the business address of the company]</i>	
Address <i>[insert the physical address of the company]</i>			
Sender <i>[insert the full name of the sender at the company]</i>			
Description of the works/goods/services	Demonstration of commercial alkali activated coal ash applications in Shotcrete, grouting for backfill, road stabilisation and the development of “lego” blocks for weights		

1. INTRODUCTION

Eskom produces approximately 34 million tons of ash per annum from its 15 power plants. This ash is dumped in either ash dams or on ash dumps, which require a substantial amount of management and rehabilitation. At present approximately 7% of the ash is sold through off takers, contracted to Eskom, in long term contracts.

In 2015, government requested that Eskom investigate how the organisation can increase the use of ash to assist with social upliftment, job creation and skills development initiatives. To this end Eskom and Rotek developed an Ash Strategy and Business plan, which identified that the current waste legislation was limiting the increased utilisation of ash. Eskom applied for and was granted an exclusion for coal ash from the Waste regulations. Through this submission and subsequent DEA interactions, alternative uses of ash have also been raised and require research in order to best serve the increased use of ash.

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2. BACKGROUND

The use of ash in the development of geopolymers (cement less, concrete-like products) was raised as a possible means of developing new concrete like products while using increased volumes of ash and reducing the amounts of limestone to be mined for cement production.

This will lead to a decrease in carbon dioxide (CO₂) emissions because the production of 1 ton of the similar concrete product produces approximately 1 ton of CO₂ emissions, which is totally negated if fly ash is used to replace cement in concrete.

Finally, beneficiation of waste to form new products is also encouraged by both government and the current waste legislation.

OBJECTIVE OF THIS REQUEST

To determine which companies can conduct commercial production and utilisation of coal ash geopolymers, to allow for metal shotcreteing, void stabilisation, block production and gravel road stabilisation.


3. IN RESPONSE TO THE REQUEST

The suppliers are requested to respond to the below:

- 3.1 Develop and demonstrate commercial, ash-based shotcrete to be used for metal passivation and metal protection from vandalism.
- 3.2 Develop and demonstrate commercial, ash-based shotcrete for the stabilisation of gabions and to minimise theft of the contents.
- 3.3 Develop and demonstrate commercial ash-based grout for sinkhole stabilisation.
- 3.4 Develop and demonstrate commercial ash-based road stabilisation technologies for the use on Eskom gravel roads and national roads.
- 3.5 Develop and construct, interlocking “lego” shaped, weight blocks for use in Transmission maintenance.

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3.6 Share any relevant information (Case studies, brochures) to show knowledge of the subjects.

3.7 Ash based Shotcrete for pylon protection

- 3.7.1 Formulation of optimal coal ash-based shotcrete
- 3.7.2 Laboratory verifications of strengths
- 3.7.3 Ability to procure and supply Shotcreteing equipment
- 3.7.4 Obtain ash and non-hazardous activators for trial
- 3.7.5 Demonstrate application of technology
- 3.7.6 Technical research report detailing procedure and results obtained
- 3.7.7 Training of Eskom staff and teams to enable inhouse application after the project (entire period).
- 3.7.8 Give an estimated cost and time frame

3.8 Ash Based Shotcrete for gabion protection

- 3.8.1 Formulation of optimal coal ash-based shotcrete
- 3.8.2 Laboratory verifications of strengths
- 3.8.3 Ability to procure and supply 2nd Shotcreteing equipment
- 3.8.4 Obtain ash and non-hazardous activators for trial
- 3.8.5 Demonstrate application of technology
- 3.8.6 Technical research report detailing procedure and results obtained
- 3.8.7 Training of Eskom staff to enable inhouse application after the project (entire period).
- 3.8.8 Give an estimated cost and time frame

3.9 Ash Based “lego” Blocks

- 3.9.1 Formulation of optimal coal ash-based concrete
- 3.9.2 Laboratory verifications of strengths
- 3.9.3 Ability to procure and supply moulding and mixing equipment.
- 3.9.4 Identify possible SMME business for business transfer as SD&L
- 3.9.5 Obtain ash and non-hazardous activators for trial
- 3.9.6 Demonstrate application of technology
- 3.9.7 Technical research report detailing procedure and results obtained

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3.9.8 Training of Eskom staff and possible SMME in block production.

3.9.9 Give an estimated cost and time frame

3.10 Sinkhole backfilling

3.10.1 Formulation of optimal coal ash-based backfill paste

3.10.2 Laboratory verifications of strengths

3.10.3 Ability to procure and supply mixing and pumping equipment

3.10.4 Obtain ash and non-hazardous activators for trial

3.10.5 Demonstrate application of technology

3.10.6 Technical research report detailing procedure and results obtained.

3.10.7 Training of Eskom staff to enable inhouse application after the project (entire period).

3.10.8 Give an estimated cost and time frame

3.11 Road stabilisation

3.11.1 Formulation of optimal coal ash-based stabilisation material based on various road surface types

3.11.2 Laboratory verifications of strengths

3.11.3 Ability to procure and supply mixing and pumping equipment

3.11.4 Placement of contract with initial road stabilisation company

3.11.5 Obtain ash and non-hazardous activators for trial

3.11.6 Demonstrate application of technology

3.11.7 Technical research report detailing procedure and results obtained

3.11.8 Training of Eskom staff to enable inhouse application after the project (entire period).

3.11.9 Give an estimated cost and time frame


4. FORMAT, METHOD, AND PLACE OF DELIVERY

Format of Submission

The response must be submitted as **1 (one) printed original** submission, plus **1 (one) printed copy**. Eskom may also require one (1) additional complete soft copy (USB) of the original tender in electronic format.

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Method and place of delivery

All responses must be sealed and delivered before the closing date and time to the tender box located at:

- Eskom Megawatt Park
Tender Office, Retail Centre
1 Maxwell Drive
Sunninghill
2000

Please find below our response to Eskom's questions:

No.	Question	Please indicate your response in this column
1.	Company name and registration number	
2.	Contact name and contact details	
3.	Give a brief description of previous experience	
4.	Indicative prices	
5.	Description of the solution that you can offer	

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Yours faithfully

Name <i>[insert your full name/s]</i>	Designation <i>[Insert your full designation]</i>	Signature	Date
Telephone number		Fax and/or e-mail address	

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