	Request for Information (RFI)	Template Identifier	240-72663051	Rev	1
		Document Identifier	N/A	Rev	N/A
		Effective Date	01 August 2016		
		Review Date	September 2022		
		RFI No.	MWP1335CX		

PART A REQUEST FOR INFORMATION (RFI)			
Description of the services	Request for Information on the Sub-Transmission Compensating Technologies		
Deadline for submission	30 June 2022	At (South African Standard Time)	10h00
Tender Office address	Retail Centre Megawatt Park 1 Maxwell Drive Sunninghill 2000		


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

- **Request for information (RFI)** to submit information for the services as stated in Table A 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 Request Information about the Sub-Transmission Compensating Technologies.

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
Damela Mathetja	Procurement Manager		28 April 2022
Telephone number	011 800 5611	E-mail address	MathetD@eskom.co.za

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## 1. Background Information

To cater for load growth, power system performance and integration of new conventional and renewable energy sources, Eskom is required to satisfy business requirements as outlined in Eskom Technology Plan for Transmission and Distribution standard [ 240-91559934] and latest Eskom Business Imperatives (i.e., Eight Dimensions).

The conventional methods that are used to achieve better system performance and integration new generation are network expansion and deployment of angle controlling and compensating technologies. The reactance of a power line has a higher influence on power system performance (power flow, system losses, and power system stability). Conventional methods are used to vary the overall reactance of the network.

Network expansion involves the construction of new power lines. However, its disadvantages are that it requires high capital injection, servitudes; there are long lead times to construct a power line. Moreover, constructed lines can be under-utilized, and that leads to low return on investment.

Nonetheless, the concept of angle controlling, and compensating technologies is an alternative solution to power system performance enhancement. These devices are relatively cheaper solutions to improve the system performance than network expansion. The disadvantage of the devices is that, they have complex designs, require skilled personnel to install the device, the reactance or capacitance is lumped in one location. In addition, when the device fails it can affect the overall network performance.


Angle controlling and compensating technologies are potential alternative solutions to power system performance improvement. They range from (e.g., phase shifting transformers (PSTs) and thyristor controlled PSTs) and impedance controlling devices (e.g., Fixed series capacitor (FSC), distributed static series compensator (DSSC), distributed series reactance (DSR), distributed series impedance (DSI), distributed statistic synchronous series compensator (DSSSC), distributed series capacitor (DSC), static series voltage regulator (SSVR), dynamic voltage restorer DVR).

The preliminary investigations and information available shows angle controlling and compensating technologies are potential alternative solutions to power system performance improvement. Literature survey was conducted to establish the existence of various technologies as highlighted within the document. The request for information (RFI) will assist in establishing the devices that has gone beyond the laboratory stage. The ones that are available can be scanned further.

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## 2. Objective of the Compensating Technologies Devices to Eskom

The devices will aim to improve the system stability and performance including amongst others such as:

- Regulate power flow to minimize power line congestion,
- Regulate power flow to improve asset utilization,
- Increase power line available transfer capacity to allow cheaper generation dispatch and reduce the price of electricity.
- Reduction or variation of electricity price signals can influence the demand side management,
- Increase power line available transfer capacity, therefore support the integration of renewable energy sources
- Defer capital spending in the construction of new lines, and possibly eliminate the need for new lines (make funds available for other projects).
- They reduce the power line impedance to reduce total power system losses,
- Inject a reactance to the line, therefore optimise power system stability, and
- Regulate the line reactance to reduce contingency induced overloads.


<b>PART B</b> <b>RESPONSE SHEET IN TERMS OF A REQUEST FOR INFORMATION</b> <b>To be completed by the supplier</b>			
<b>To</b>	Eskom Holdings SOC Ltd	<b>Date</b>	26 April 2022
<b>Attention</b>	Zekhaya Nzima		
<b>Tel no</b>	011 516 7042	<b>E-mail address</b>	NzimaZZ@eskom.co.za
<b>From</b>		<b>Address</b>	
<b>Address</b>			
<b>Sender</b>			
<b>Description of the services</b>			

Please find below our response to Eskom's questions:

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**Table A:**

No.	Question	Please indicate your response in this column
1.	Company name and registration number.	
2.	Contact name and details.	
3.	At what stage of development is the device.	
4.	Description of operation of the device.	
5.	PLEASE PROVIDE THE DETAILS OF WHERE THE DEVICE HAS BEEN USED IN PRACTICAL INSTALLATIONS. THE INFORMATION TO INCLUDE, INTER ALIA, THE FOLLOWING:	
5.1	Year of installation.	
5.2	Level of sub-transmission (i.e., 88 and 132 kV) voltage at the installation.	
5.3	Sizing of the device.	
5.4	Cost of the device.	
5.5	Detailed discussion of the problem that the device was to solve.	
5.4	Why the device was selected as the preferred technology.	
5.5	Availability of models for the device in Power System Simulator for Engineering (PSS/E) and/or	

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	Power Factory.	
5.6	Training required to gain competence in planning studies.	

Yours faithfully

Name	Designation	Signature	Date
Telephone number		E-mail address	

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