



Request for Information (RFI)  
Template


Document Identifier	240-72663051	Rev	4
Effective Date	17 June 2025		
Review Date	June 2030		
RFI Number	E3140CXMWP		

**PART A**  
**E3140CXMWP - REQUEST FOR INFORMATION (RFI)**

Description of the works/goods/services	Request for information on commercially available leakage detection technologies application to coal fired power station flue gas Air Cooled Condensers		
Deadline for submission	20 July 2026	At (South African Standard Time)	10:00
Tender Office address	Tenders are uploaded via Eskom Tender bulletin site on the Eskom E- tendering page.		
Enquiries	Letsibogo Mahlatji <a href="mailto:MahlatLN@eskom.co.za">MahlatLN@eskom.co.za</a>		
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 EOI/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.		
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 upload size per document is 500 megabytes and total submission is restricted to 4 gigabytes).</p> <p>No Zip/condense files can be uploaded No hard copy will be accepted</p> <p>If for some reason you resubmit your EOI, then the latest version of the EOI 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	E-tendering Help Manual attached		

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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 request for information on commercially available leakage detection technologies application to coal fired power station flue gas Air Cooled Condensers. 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.

We look forward to receipt of your response.

Yours faithfully


  
Shamani Padayachee

Corporate Procurement Manager

Date: 02 July 2026

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- B-BBEE Document** –
  - means Broad-Based Black Economic Empowerment.
  - this document which outlines the requirements of Eskom’s further deliberation and development of Oil in water removal by a suitable technology
  
- 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 inspect of the Project or requested information.
  
- RT&D Respondent** –
  - Research, Testing and Development, a business unit in Eskom. 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

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## 1. Background Information

Air-cooled condensers (ACCs) are used in some coal-fired power plants to condense steam from the turbines using air instead of water. They are large structures located outdoors and consist of many tubes, fans, and ducts. Maintaining a good vacuum in the ACC is important because any extra air entering the system deteriorates the turbine back pressure and reduces the efficiency of the turbines. The pressure in the ACC vacuum space is approximately 15 kPa absolute, thus any defect in the vacuum boundary will result in atmospheric air flowing into the system.

The typical dimensions of the ACC platform of one turbine unit are typically 100 m x 100 m at an elevation of 55 m above ground level, thus a very large structure. Air flow is provided by 64 axial flow fans creating very high air velocities around the structure in addition to any atmospheric winds. The cold atmospheric air forced over the heat exchangers is heated by the condensing steam resulting in a hot air plume rising and accelerating into the atmosphere above the ACC. The total length of heat exchanger tube in one ACC is approximately 700 km. The axial flow fans have a diameter of approximately 10 m and the high tip speeds of the fans create significant noise. Thus, any vacuum leak detection system used on load must be able to filter out significant background noise to be effective.


The typical defects to be located is very small, as small as 1 mm<sup>2</sup>, thus the system must be able to locate very small defects to a high degree of certainty and orientation. Considering the number of tubes in one ACC it is not good enough to obtain a general orientation of the defect and detailed information is required. Note that access is very limited and it is not possible to approach the vacuum boundary surfaces in many areas. The heat exchanger tubes and steam ducts which may contain the defects may be at 10 m or more from the walkway, thus the system must be able to detect and pinpoint the vacuum defects from a distance.

The ACC heat exchangers are to be scanned or inspected for defects on both the air inlet side which is immediately above the axial flow fans and the air outlet side since the heat exchanger bundles has more than 1 tube row. Access is limited on both sides of the heat exchangers and the heat exchanger tubes extend to about 10 m above the walkways. In addition, the space between the axial flow fan and the heat exchanger inlets are congested with various beams and maintenance structures.

Air in-leakage happens when outside air enters the ACC through worn seals, gaskets, and joints. Detecting these leaks is difficult. Traditional leak detection methods, like helium testing work well near the turbine but are not effective for the whole ACC structure. Small leaks can go unnoticed but still have a significant effect on performance.

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If air enters the ACC, it worsens the turbine back pressure, which reduces the electricity output and increases fuel consumption. It also puts extra load on vacuum and extraction systems, raising maintenance needs over time. Finding and sealing these leaks can improve turbine efficiency, increase net power output, and reduce operational costs.

ACC air-in leakage remains a significant challenge at power stations such as Matimba, Medupi and Majuba that operate without traditional wet cooling towers. Due to the difficulty of detecting leaks, many leak sources remain unidentified and unaddressed during normal operation and outages.

**2. Description of Service/ product that needs to be provided (Use high level and short text format), and if necessary, add a spreadsheet.**

Eskom is requesting information on commercially available vacuum leakage detection technologies for application on Air Cooled Condenser at Coal Fired Power Stations considering the limitations and complexities detailed above.

**3. Specification of Product or Goods**

The solution must be a technology capable of detecting air in-leakage in air-cooled condenser systems. It should support monitoring of large, distributed ACC structures operating in harsh outdoor environments. The technology must be suitable for conditions with high noise levels, while maintaining reliable and accurate leak detection performance across the full ACC footprint.

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#### 4. Scope of work/supply

Please find below our response to Eskom’s questions:

No.	Question	Please provide your response in this column
1	Provide supplier name, product name and product description.	
2	Provide details of your company’s experience in supplying or applying air in-leakage detection technologies for vacuum systems. Please specify countries, companies, and period of usage.  Provide your experience in condenser monitoring.	
3	What technology or principle does your solution utilise to detect air in-leakage in condenser or vacuum systems (e.g. infrared thermography, acoustic detection, or other techniques)? Please explain the technical basis.	
4	What equipment is required to execute your solution (e.g. drones, thermal cameras, acoustic sensors, pressure monitoring equipment)?	
5	Does your solution include drone-based inspection capability for large structures or large condenser systems? If yes, describe the application and use cases. Please note the high air velocities around the system during operation as mentioned in Background information section above	
6	Can drones used in your solution be equipped with infrared (IR) or thermal imaging cameras for leakage detection and inspection of elevated structures? Please provide details of the camera systems and capabilities.	
7	Which of the following technologies have you used in real industrial applications for leakage detection: infrared thermography, acoustic detection, drone-based inspection, pressure/vacuum monitoring?	
8	Provide details of your experience using drone-based inspections specifically for large industrial structures such as Air-Cooled Condensers (ACCs), including access constraints, altitude challenges, and environmental limitations (wind, heat, plant layout).	
9	Can your technology be applied during normal on-load operation, outage conditions, or both? Please explain per method used and also detailed how background noise is eliminated.	
10	Can your solution detect solution air in-leakages in vacuum systems such places; seals, joints, tube leaks, expansion joints)?	
11	What is the typical detection capability or sensitivity both in terms of minimum defect size and distance of your solution for identifying air in-leakages?	
12	Provide details of your experience using infrared thermography for vacuum system leak detection, including equipment used and outcomes achieved.	
13	Provide details of your experience using acoustic detection methods for identifying air in-leakage in industrial condenser systems.	
14	What is the typical end-to-end inspection process, including mobilisation, inspection execution, data capture, and reporting?	
15	What are the main operational constraints when applying your technology in Air Cooled Condenser environments or similar structures (height, wind, accessibility, safety restrictions, plant conditions, background noise from fans and steam flow in pipes etc.)?	

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16	Does your solution require plant shutdowns, temporary installations, or modifications? If yes, please explain.	
17	Provide case studies or examples where your technology successfully identified air in-leakages in ACCs or similar vacuum systems.	
18	What is the expected equipment lifecycle and associated costs (CAPEX, OPEX, consumables, maintenance)?	
19	What maintenance, calibration, or servicing requirements are needed for your solution?	
20	Is local technical support available in South Africa? If yes, specify capability and location.	
21	If local support is not available, describe your international support structure and response times.	
22	Provide details of training and knowledge transfer offered to operational and maintenance personnel.	
23	What additional information should Eskom consider when evaluating your ACC air in-leakage detection solution?	

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

Yours faithfully

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

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