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|  | Request for Information (RFI) Template | Document Identifier | 240-72663051 | Rev | 4 |
| | | Effective Date | 17 June 2025 | | |
| | | Review Date | June 2030 | | |
| | | RFI Number | E3173CXMWP | | |

| PART A E3173CXMWP - REQUEST FOR INFORMATION (RFI) | | | |
|---|---|---|--------------|
| Description of the works/goods/services | E3173CXMWP - Request for the provision of information on commercially available drone-based, fluorescent tracer powder with UV light inspection, thermography, and related leakage detection technologies applicable to flue gas ducting systems in coal-fired power stations. | | |
| Deadline for submission | 20 July 2026 | At (South African Standard Time) | 10:00 |
| Enquiries | Letsibogo Mahlatji MahlatLN@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. Please note it is the responsibility of the supplier to ensure that EOI/RFI submission is submitted before the closing date and time | 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 the provision of information on commercially available drone-based, fluorescent dye, UV light, thermography, and related leakage detection technologies applicable to flue gas ducting systems in coal-fired power stations.. 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

Auxiliary power consumption in coal-fired power stations directly impacts the plant efficiency and the overall net power. A significant portion of auxiliary power is used by fans, pumps, and mills, with Forced Draft and Induced Draft (ID) fans being among the largest contributors. One of the hidden but impactful causes of high fan loading is leakage in duct systems, which leads to increased air and flue gas mass flow, resulting in higher fan power draw.

Currently, duct leak detection in power stations primarily relies on visual inspections conducted when a unit is on outage. However, these methods are often ineffective due to limited access to ductwork, duct operating in vacuum, poor visibility, and the inability to detect small or concealed leaks. Additionally, such inspections are typically reactive rather than proactive, meaning leaks are only addressed after they have caused significant efficiency losses. The absence of continuous monitoring or more sensitive detection techniques allows many leakages to persist unnoticed, contributing to sustained high auxiliary power consumption.

Reducing auxiliary power consumption is a key driver for improving overall plant efficiency, lowering operational costs, and supporting emissions reduction efforts. This research aims to identify practical and cost-effective methods to reduce auxiliary power usage by addressing common, yet under-managed, causes such as duct leakages.

Draught group ducting leakages contribute to excessive ID fan loading and reduced combustion efficiency. These losses result in higher auxiliary power usage, which reduces station output efficiency. A systematic detection of boiler duct leakages and sealing of the leaks will significantly reduce auxiliary power usage and improve net output power.

The first phase of this project is completed, and it was focused on reviewing and evaluating available duct leakage detection technologies. The project now focuses on the viability of the recommended combined use of fluorescent tracer powder, infrared thermography, and drone-assisted inspections for detecting duct leakages

2. Description of Service

Eskom is requesting information on commercially available leakage detection technologies for application in coal-fired power station flue gas path ducting, with particular interest in advanced inspection methods such as drone-based systems, infrared thermography, fluorescent tracer techniques, and ultraviolet (UV) detection technologies.

3. Specification of Product or Goods

The product must be a technology solution capable of detecting leakages in coal-fired power plant flue gas ducting. It should be designed to operate in environments with high noise levels, dust concentration and complex plant layouts. The equipment should feature durable construction and reliable performance under harsh industrial operating conditions.

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4. Scope of work/supply (product that needs to be provided. Use high level and short text format, and if necessary, add a spreadsheet)

Please find below our response to Eskom's questions:

| N o. | Question | Please provide your response in this column |
|---------|--|--|
| 1 | Provide supplier name, product name, and product description. | |
| 2 | Provide details of your experience in deploying duct leakage detection solutions using the following technologies: infrared thermography, fluorescent tracer powder with UV light inspection, and drone-based inspection. Include plant names, utilities, countries, and years of application. | |
| 3 | Which of the following technologies have you actively used in real industrial environments: infrared thermography, fluorescent tracer powder with UV inspection, drone-based inspection. Please specify. | |
| 4 | Provide evidence of deployment of infrared thermography for duct leakage detection in operating power stations or heavy industrial plants. Include equipment used, inspection methodology, and outcomes achieved. | |
| 5 | Provide evidence of deployment of fluorescent tracer powder for duct leakage detection, including tracer application method, UV light or UV camera detection methodology, visibility under operating conditions, and leak identification success rate. | |
| 6 | Provide details of the UV inspection equipment used for fluorescent tracer detection, including UV light source specifications, UV camera capability, inspection distance, visibility limitations, and suitability for power station environments. | |
| 7 | Provide evidence of deployment of drone-based inspection systems for duct leakage detection or gas path inspections. Include operational constraints (temperature, flue gas environment, access limitations). | |
| 8 | Confirm whether the drone can navigate vertically and horizontally within narrow gaps while maintaining stable control. | |
| 9 | Confirm whether the drone is capable of operating without reliance on Global Positioning Satellite System (GNSS) signals. Describe the navigation system used. | |
| 10 | Confirm whether the drone implements autonomous obstacle avoidance. | |
| 11 | Provide details of drone protection systems including collision-tolerant cages, guards, or frames protecting sensors, propellers, and cameras. | |
| 12 | Confirm whether propellers or rotating components are fully shielded to prevent injury during handling and operation. | |
| 13 | Provide details on drone payload flexibility and integration capabilities, including ability to add/remove payloads after acquisition. | |
| 14 | Confirm whether payloads can be interchanged by the user without manufacturer assistance. | |
| 15 | Confirm whether the platform supports integration of additional inspection payloads such as thermal cameras and UV cameras. | |
| 16 | Can any combination of the above technologies (IR thermography, fluorescent tracer powder with UV inspection, and drones) be integrated into a combined inspection methodology? If yes, provide examples from real projects. | |

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| 17 | What types of duct leaks have been successfully detected using your technology (e.g. flange leaks, expansion joints, casing leaks, structural cracks)? | |
| 18 | What is the minimum detectable leakage size or sensitivity achieved in real applications for each technology used? | |
| 19 | Describe the end-to-end inspection process for each technology (mobilisation, inspection, data capture, analysis, reporting). | |
| 20 | Provide details of equipment used for each technology (infrared camera systems, UV light/UV camera systems, drones, sensors, and tracer systems). | |
| 21 | What are the limitations and risks associated with each technology in power station environments? | |
| 22 | Provide case studies or verified results demonstrating actual leak detection performance and corrective actions taken using each technology. | |
| 23 | What is the estimated inspection time per unit (e.g. 600 MW coal-fired unit) for each technology or combined approach? | |
| 24 | What are the cost components associated with each technology? | |
| 26 | What maintenance, calibration, or operational upkeep is required for each technology? | |
| 27 | Provide details of training requirements and knowledge transfer for plant personnel for each technology. | |
| 28 | Is local technical support available in South Africa for any of these technologies? If yes, specify which ones. | |
| 29 | If not locally available, describe how international support is provided and typical response times. | |
| 30 | What are the key lessons learned from real deployments of these technologies in industrial environments? | |
| 31 | What recommendations do you have for implementing a routine leakage detection programme using these technologies in power stations? | |
| 32 | Provide any additional information relevant to Eskom's evaluation of infrared thermography, fluorescent tracer powder with UV inspection, and drone inspection technologies. | |

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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 | | | |
| Tel no | | Fax no and /or e-mail address | |
| From | | Address | |
| Address | | | |
| Sender | | | |
| Description of the works/goods/services | | | |

Yours faithfully

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

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