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Science and Innovation  
REPUBLIC OF SOUTH AFRICA

## TERMS OF REFERENCE FOR A DIRECTED WRC PROJECT

<b>KEY STRATEGIC AREA</b>	KSA 9: Business Development and Innovations
<b>THRUST</b>	N/A
<b>PROGRAMME</b>	Business Development and Innovations
<b>TITLE</b>	Consolidation and gap analysis of non-revenue water tools, guidelines, technologies and solutions

### ***General context:***

South Africa continues to face significant non-revenue water challenges, despite various attempts to revitalize “No drop” and raise awareness about this issue. Many municipalities continue to grapple with issues relating infrastructure maintenance, effective billing and revenue collection, accessing budgets to undertake effective maintenance, and the skills needed to hold this suite of dynamics in balance.

The most comprehensive non-revenue water modelling study available in South Africa is still the McKenzie et al 2012 report which puts NRW nationally at 37% and at an estimated R 7 billion cost per year. We know that in real terms these losses are even higher in specific parts of the country and in many space this problem has deepened over the last decade.

Non-revenue water is receiving renewed attention in the Department of Water and Sanitation Director General which is clearly signaled in the Water Services Improvement Plan and draft National Water Resources Strategy III. The need to effectively support non-revenue water challenges and opportunities is also firmly embedded in the National Water and Sanitation Master Plan and the National Water Research, Development and Innovation Roadmap.

### ***Rationale:***

The need to find ways to support municipalities to address non-revenue water challenges remains a high priority to many partners (including DWS, DSI, WRC, SALGA, MISA, and others).

The research and innovation ecosystem continues to fulfil the role of developing and refining a portfolio of tools, guidelines, and technologies to support the most optimal management of non-revenue water. Investigative studies that put in place baselines, analyze policy, skills and other dynamics also remain important.

The task of keeping these tools updated, on relevant software platforms, making them available to relevant stakeholders and assessing the need for refinement/ updating is ongoing work. There is also the need to explore how best to connect these tools to training materials and providers.

In parallel to this, various partners are looking at ways to set up innovative financing mechanisms that would help to fund better operations and maintenance and deal with the commercial/non-payment and physical loss aspects of non-revenue water. Financing mechanisms need to be complemented by effective guidance from the above-mentioned guidelines, tools and technologies.

This makes it timeous to take stock of the existing tools, guidelines, technologies available in the sector to support non-revenue water management and make these available in a consolidated manner to all



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organizations and partners collectively tackling this challenge. Through the Water RDI Roadmap partnership between the Department of Science and Innovation (DSI) and the WRC, DSI has made funding available to undertake the task of consolidating the existing knowledge base relating to non-revenue water and analyze the gaps that need to be addressed from a knowledge and technology perspective to support the way forward.

**Objective:**

Consolidate and package the existing advisory packages, solutions, guidelines, reports, innovations and technologies sitting in the proven and emerging pipeline related to non-revenue water.

This will need to be accompanied by a research and innovation gap analysis to inform the NRW investment strategy from an innovation perspective. All outputs must be packaged in a way that meets the user requirements of core partners such as DWS, municipalities, SALGA, MISA and others.

**Specific Sub-objectives:**

1. Source and consolidate the body of existing work that supports implementation partners to address non-revenue water challenges. This must include software solutions, guidelines, reports, innovations and technologies sitting in the proven and emerging pipeline related to non-revenue water (commercial and physical loss aspects).
2. Undertake a gap analysis of the research and innovation derived knowledge products (what is being used, what has been well tested, what needs further refinement/repackaging, what new things need to be developed).
3. On the existing process and technological solutions part of the analysis, determine what next steps will be required to position the public sector to be able to adopt or implement the solutions and tools base and provide way forward (e.g. demonstrations, etc.)
4. Identify and develop a series of illustrative case studies that provide practical insight into how different municipalities are implementing the identified tools, technologies, or processes to more optimally manage non-revenue water (provide practical insights into how interested municipalities could improve their own processes)
5. Develop an online data/information/knowledge portal that creates a 'one stop shop' for all existing solutions that can support municipalities (and organisations working with municipalities) to deal with non-revenue water. At a minimum, the following categories of information will need to be included: technologies, guidelines, tools, applied research and baseline reports, technical briefs, training material, and practical case studies. The site must have the capacity to host video content for training/ other video material that may be uploaded. The portal will need to be tailored for different categories of users (planning, implementation, etc).
6. Define a process and governance/partnership arrangement for long term ownership, updating and maintenance of the portal.

These outputs will need to be strongly underpinned by timeous, focused, systematically structured engagements with a range of stakeholders (the WRC managed reference group, DWS, DSI, SALGA, and MISA, etc). This is key to getting the understanding of the issue right, and to enabling the right strategic buy-in of the portal and gaps that need to be addressed.

A close out workshop which will be combined with the launch of the portal must be included in the proposal. This will be co-planned with WRC and supported by the Reference Group to ensure the appropriate positioning of the event.



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This project will be funded through DSI-funded Water RDI Roadmap contract implemented by the Water Research Commission.

### ***Outputs and Products:***

The following need to be provided at a minimum:

- Database of existing tools to be featured into a portal and identified case studies
- Non-revenue water online Portal, including case studies
- Gap analysis Report
- Strategic implementation and toolkit guide for portal and its associated resources to tackle NRW
- Communication piece and/or policy brief to support dissemination of the portal

### ***Requirements***

The appointed team will need to work with a Reference Group that will provide input at key decision points in the project.

### ***Time frame***

10 months

### ***Total funds available***

Maximum of R 800 000 including VAT.

### ***Closing date***

The closing date for submission of proposals is two weeks from date of release.

### ***Proposal Template***

Please apply on the standard WRC template, via the BMS system, details attached.

### ***Contact***

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