



**NAKURU RURAL WATER AND SANITATION COMPANY LIMITED**

**REQUEST FOR EXPRESSION OF INTEREST (EOI)**

**ON**

**SMART METERING SYSTEM**

**Ref No: NRW/34/2021-2022**

**July 2021**

## **SECTION A: SUMMARY**

1. Nakuru Rural Water and Sanitation Company Ltd (NARUWASCO) is a wholly owned water service provider (WSP) company of the County Government of Nakuru. We are responsible for provision of water and sanitation services within the larger parts of Nakuru County except Nakuru and Naivasha Urban Centres.
2. The main objective of this EOI is to prequalify firms that shall be engaged in smart metering project of the company.
3. NARUWASCO now invite eligible firms to express their interest in providing the above services. Interested firms must provide information indicating that they are qualified to perform the services, among them are, brochures, description of similar assignments, experience in similar conditions, availability of appropriate skills among staff, etc.
5. Interested firms should obtain detailed company Terms of Reference for the smart metering project through the company website, [www.naruwasco.co.ke](http://www.naruwasco.co.ke).
6. Complete Expressions of Interest (EOI) documents in plain sealed envelopes clearly marked at the top "Expression of Interest for Consultancy Services for Tariff Study and Filing the Tariff Review Application Ref. No. NARUWASCO 11/2020-2021" should be delivered to the address shown below on or before **Friday, 23rd July 2021 at 12:00 PM**.

**The Managing Director**  
**Nakuru Rural Water and Sanitation Co. Ltd**  
**P.O. Box 386 – 20100, Nakuru**  
**Tel: (+254) 51 2 213 214 / 721 344 898**  
**Email: [info@naruwasco.co.ke](mailto:info@naruwasco.co.ke). Website: [www.naruwasco.co.ke](http://www.naruwasco.co.ke).**

## **SECTION B: OBJECTIVES OF THE EXPRESSION OF INTEREST**

The main objective of this EOI is to prequalify firms that shall be engaged in smart metering project of the company.

## **SECTION C: EVALUATION CRITERIA**

### **1. Firm's Experience and Capacity:**

- Demonstrated experience in rolling out a successful smart metering project in Kenya.
- Manufacturer's authorization to deal with the proposed type of meter and AMR solution

### **2. System Capability**

#### **A. Water meter**

Meter should be a SINGLE JET design, which complies to MID, OIML R49 and ISO 4054 standards. Certification should be from an accredited LNE Laboratory. Meters should be available in composite (15mm) material and can be fitted with programmed radio module for AMR reading to standards and requirements for measuring consumption of cold water and available in a range of standard diameters, lengths and should confirm to the features specified below:

- i. Single Jet meter
- ii. Composite – 15mm
- iii. Dry Dial Register - Magnetic transmission from chamber
- iv. OIML and MID (Measuring Instruments Directive) approved up to R200 by an LNE laboratory
- v. ACS sanitary conformity
- vi. Minimum 2-year manufacturer's warranty
- vii. Meets the metrology standard OIML R49, EN14154 and ISO 4064.
- viii. 360° Rotating register fitted with anti-mist system.
- ix. Installation in horizontal position R 200
- x. Starting flow rate < 6l/h
- xi. Can be fitted with radio reading system or pulse transmitter (IP68) (AMR Ready)
- xii. No straight line required
- xiii. Register with modularity "Ha + Ti"
- xiv. Tamper proof – hot needle, clamp test and anti-magnetic up to 12,000 gauss
- xv. Meter chamber permanently sealed – opening equates to tampering
- xvi. Meter to have a life of over 8 years
- xvii. Pressure rating 16 Bar
- xviii. Please note technical specifications to measure accuracy below

Please note technical specifications to measure accuracy below :

Nominal diameter	<b>ND</b>	<b>Unit</b>	<b>15</b>
Length	L	mm	115
Nominal flow rate	Q3	m <sup>3</sup> /h	2.5
R	Q3/Q1		200
Start flow rate		l/h	<6
Minimum flow rate	Q1	l/h	12.5
Transition flow rate	Q2	l/h	20.0
Maximum flow rate	Q4	m <sup>3</sup> /h	3.125

## **B. Data transmission Radio Module:**

General characteristics:

- i. Module directive : EN 300 220, CE, RED directive, EN 13757-3/-4
- ii. Battery life up to 15 Years
- iii. Operating Temperature Range +5°C / +55°C
- iv. Storage Temperature Range -20°C / +70°C
- v. The transmission power must be a maximum 16mW
- vi. The radio module must be IP68
- vii. Compatible with a modular meter inductive technology (Ti)
- viii. The same radio module must be compatible with all sizes of mechanical water meters from the same manufacturer without any modification required.

Protocol of data transmission has to follow the characteristics below:

- i. Ability to transmit data remotely in real time (12 seconds)
- ii. Radio transmission 868Mhz Mandatory
- iii. Unidirectional transmission mode
- iv. Data transmission OMS Protocol: the certificate is going to be asked (mandatory) <https://oms-group.org/en/about-oms/certified-products/>

The Data transmitted has to fulfil these minimum requirements:

- i. The radio module must be able to transmit 11 historical index values and give detailed information about leakage
- ii. Able to transmit different types of alarms i.e. leakage, battery life, fraud, overflow & underflow, backflow and tampering
- iii. Tamper proof gadgets and ability to send signal if meter is tampered with

The installation and the configuration of the meter has to follow the characteristics below:

- i. Programming Interface Infrared LED / Standard Opto IrDA
- ii. Must be able to program the meter with Opto IrDA on the field without water interruption
- iii. The installation of ONE radio module should not take longer than TWO minutes

- iv. The radio module needed for the meter must fit all meter sizes from the manufacturer. This is to ensure, in case of a strategic decision, NARUWASCO must be able to clip on the radio module to another meter of a different size, without water interruption and without physically removing the meters
- v. The module can be used in mobile and/or fixed networks. - No reconfiguration is required to switch from mobile to fixed network and vice versa. Modes of reading (mobile and fixed) are infinitely compatible.

### **C. Data Mobile Reading (Drive By):**

The solution must be composed of the following element:

- i. A radio receiver, easy to carry and able to receive the radio signal of the module
- ii. A Optical tool to be able to program the meter
- iii. An application to operate the mobile reading (drive-by & walk-by)
- iv. The adequate receiver antenna for the type of reading

This solution should also observe the following condition:

- i. The mobile tour application must be able to host 2000 meters in one tour
- ii. The mobile receiver should be able to pick a signal form a distance of at least 300mm
- iii. The drive-by tour should be able to be done at 50km/h
- iv. In case of a fixed network installation, the bidder should be able to have a Flexible solution: Mobile Reading and/or Fixed network without re-configuration

### **D. Management Software:**

General characteristics:

- i. The application is accessible 24/7 from any place and operating system thus increasing the flexibility of administering metering data, read out processes and supply network.
- ii. ISO 27001 certified hosting platform
- iii. 256 bytes SSL encrypted secured connection.
- iv. Automatic updates

Software compatibility:

- i. Ability to integrate the software with Billing Software and NARUWASCO system
- ii. The results and file generated by the software should be able to be export easily and if necessary NARUWASCO be able to integrate in a 3<sup>rd</sup> party software

Software management capacity:

- i. Software management has to be able to carry out water network analysis: consumption, Unread meter, alarms, night consumption, Instantaneous values, Leakage

- ii. The system must be able to send notification by SMS and email
- iii. The software must be able to show real time data in an ergonomic graphic
- iv. The software must have a dashboard where the data are displayed in a clear way
- v. The software must have the functionalities for the radio reading such as the organization of the reading rounds, the uploading/downloading on the handheld computers, the management of the radiometers and the consultation of the historical consumption data and alarms.
- vi. Offers the view of the GPS location of the meter (map view)
- vii. Ability of creating user and sub user with different login with and access rights managed
- viii. Smart search and multiple filtering options
- ix. Built-in Task Scheduler to automate such imports / exports or reports

**E. Service & Support:**

- i. The bidder should deliver 100 hours support free
- ii. The bidder should have a physical office in the country