

Universal Water Metering in Trinidad and Tobago - A Concept Outline

January
2021

This document is a summary of the RIC's consultative paper on the possible application of universal water metering as a demand side management measure for water distribution in Trinidad and Tobago.

Summary Document



Purpose of this Document

This document presents a summary of the consultative document *Universal Water Metering in Trinidad and Tobago - A Concept Outline*. The full consultative document is available on the RIC's website at www.ric.org.tt/consultations.

Responding to the Consultative Document

Persons wishing to comment on document are invited to submit their feedback via post, fax or e-mail to:

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All responses will normally be published on the RIC's website unless there are good reasons why they must remain confidential. Any requests for confidentiality must be indicated.

Deadline for submission of comments is February 15, 2021.

Universal Water Metering

The Regulated Industries Commission (RIC) proposes that the Water and Sewerage Authority of Trinidad and Tobago (WASA) implement universal metering. Universal water metering refers to the installation of meters at the premises of all customers, coupled with the implementation of a volumetric tariff structure for the purpose of billing customers for consumption. It is a fair way of billing customers, as they pay for only what they consume. This in turn facilitates the development of cost reflective tariffs and sends the appropriate price signal to consumers about the value of the commodity. Other benefits to be derived from such a system include:

- Conservation of water (which is a valuable resource);
- Reduction of water consumption, typically in the amount of 15-50% of production;
- Improved efficiency in monitoring and managing the operation of the water supply system (e.g. through improved leakage management);
- Accurate projection of future capital upgrades; and
- Reduction in negative environmental impact.

Approximately four percent (4%) of WASA customer's base is metered¹. Additionally, water loss in the supply network is very high, with non-revenue water (NRW) accounting for over 50% of the water produced. The RIC is of the view that universal water metering, coupled with a suitable tariff structure, is a key step towards reducing WASA's high level of NRW, while significantly improving the efficiency and sustainability of the utility, and sending the appropriate price signal to customers.

Over the years, stakeholders (the Government, Utility, Regulator and Customers) have discussed water metering as a crucial demand side management measure. However, universal metering was never implemented as a primary strategy. The lack of action has been attributed to various factors such as:

- The initial high capital costs;
- The magnitude of the project works;
- Anticipated negative reactions by customers;
- High cost to individual customers;

¹ WASA's customer base amounted to 423,904 customers in 2018.

- Intermittent water supply issues;
- Lack of enthusiasm by the political directorate; and
- Loss of revenue under current rates and poor quality of service.

Implementation – Considerations and Proposals

Several major considerations need to be addressed in implementing a successful universal metering programme. These include, but are not limited to:

- Water consumption - universal water metering has led to reduced water consumption when tied to an appropriate pricing regime based on measured use
- Appropriate Tariff Structure - for utilities that employ metering charges for the volume of water used by the customer, pricing regimes are generally set to incentivise the more efficient consumption of water.
- Environmental Considerations – metering and water conservation can lead to the deferment of large new water abstraction schemes and overall reduced water abstraction from rivers etc. make more water available for wildlife and aquatic life.
- Private Sector Participation – can be used as a way to overcome various utility capacity constraints.
- Consumer education and attitudes – Customers can have mixed feelings about metering.

In instances where customers receive a metered supply of water, the following four (4) options can be considered for conveying meter readings from customers' premises to the facility where bills will be generated:

1. Manual system in which meter readers visit each customer's premises to record readings;
2. Remote reading of installed meters (based on Automatic Meter Reading (AMR) technology) with mobile devices and relaying the data to WASA for bill processing;
3. Installing standalone Advanced Metering Infrastructure (AMI) for WASA's sole use; or
4. Utilizing the AMI network of the Trinidad and Tobago Electricity Commission (T&TEC) for the transmission of metering data.

These options may include some level of outsourcing by utilizing contractors to execute capital works and/or operational tasks. Outsourcing the metering service to the private sector can ensure that WASA

does not have to commit large amounts of financial, human and physical resources to execute a metering programme, thereby, allowing these resources to be utilized for other projects and core business. It is estimated also that the implementation phase would be significantly shortened by as much as six (6) years with the use of contracted services.

Metering as a service performed by the private sector will allow for contractual agreements to be established that will hold parties accountable for maintaining a high level of performance of the metering system for its useful life. The RIC proposes the following four (4) components as key to implementing universal metering in Trinidad and Tobago:

1. The adoption of a fast track approach;
2. The outsourcing of the metering function as a service to be undertaken by the private sector;
3. The use of an open tendering process for the selection of an optimal number of contractors/companies; and
4. The implementation and review of a Pilot project before a full metering programme is implemented.

Benefit/Cost Analysis of implementing a Universal Metering Programme

The benefits to be derived from the implementation of a universal water metering programme include the avoided costs, or the incremental savings associated with not having to produce additional units of water or water service. Avoided cost can be used to compare demand management and supply management options and inform the utility as it determines the least-cost alternatives for meeting future water needs.

The following benefits of implementing a universal metering programme in Trinidad and Tobago can redound to significant avoided costs:

- Reduced Consumption
- Reduced Leakage & Theft
- Capital Expenditure Deferral/Avoidance
- Carbon Credits
- Reduction in Security cost when reading meters remotely
- Improved Operational Efficiency

A detailed analysis of the benefits and costs of outsourcing the installation of a universal metering programme (based on the technology employed) versus WASA conducting the programme in house is presented in the main paper.

The RIC welcomes your views on the implementation of a universal water metering programme in Trinidad and Tobago.