**DBOM Progressive Roll-Out Contract**

**Terms of Reference: Explanatory Note**

This TOR is one of four designed to produce innovative types of NRW Reduction Contracts. The TORs are designed to be used as part of an NRW-reduction project being implemented in accordance with the NRW Manual.[[1]](#footnote-2) It is assumed that the consultant will be engaged after an Initial Assessment (and if needed, a Field Assessment) of the utility and relevant networks have been completed (see Section 5 of the Manual). That assessment will have gathered information on the Water Balance, assessed whether NRW control is needed, whether a performance-based contract is appropriate, and what the goal of the contract should be.

Various types of contracts could be developed. Four are listed in Appendix B of the Manual and are described briefly below. Terms of Reference for development of each type of contract have been developed.

1. **DBOM (Physical Loss Reduction) Contract**—these contracts are focused on reducing physical losses. They provide high levels of incentive and risk transfer by making the contractor responsible for all costs, with payment dependent on the volume of loss reduction achieved. They also require construction of DMAs and other physical infrastructure. They can be considered the NRW-reduction equivalent of a Design-Build-Operate-Maintain contract for water production and treatment. This contract type has several variants.
	1. **Traditional** **variants** have required long preparation periods, as the network must be studied in detail, and a well-justified baseline level of losses established, before the utility or the contractor could commit to delivering specified quantities of loss reduction for a fixed price. A Terms of Reference for development of a traditional variant is available at [reference original contract design / Transaction TOR in manual]
	2. **Progressive Roll Out Contracts** aim to reduce the preparation period and as it is established allow faster delivery of results by setting the performance baseline for each DMA, and allowing the contractor to develop the configuration of the network into DMA’s progressively, rather than specifying this at the start of the contract.
2. **24/7 Self-Optimizing Contract (SO24/7)**—this innovative model provides the contractor with incentives based on the value to the utility of key outputs—including customers moved to 24/7 supply, and revenue collected—as well as inputs, such as bulk water used. This design provides for considerable flexibility, and reduces the amount of upfront engineering work required in contract preparation.
3. **Cost-Plus (for use in Competitive Discovery) Contract—**this contract type simply pays the contractor for work done on NRW-reduction at actual cost plus a margin. Actual costs are disclosed though an agreed ‘open book’ process that allows the utility to see the costs the contractor incurred. The ‘plus’ component would be a standard profit element on top of costs, typically less than 10 percent. Modest incentive payments for improvement in specified key performance indicators can also be included. The cost-plus contract is quick to implement, but typically does not maximize value for money.
4. **Incentivized Program Management Contract**—Program management contracts separate the ‘brains’ of the operation (planning interventions such as DMAs and action leak control) from the ‘brawn’ of implementing the works. A program management contract is a professional services contract, in which the utility is paying for a team of experts to design, procure, and supervise NRW-reduction works. Actual implementation is done by third-party works-contractors. The program manager is paid a program management fee—typically around 10 percent of the value of the works—and is also incentivized with performance pay for improvements on specified key performance indicators.

## Reasons to use the DBOM Progressive Roll-Out TOR

The attached TOR are for engaging a consultant to develop the Progressive Roll-Out variant of a DBOM-type NRW reduction contract. This contract would be useful in conditions where:

1. Reducing physical losses is a priority
2. The utility wants its network to be reconfigured into DMAs, as an aid to loss reduction
3. Reliable information on the current configuration of the network and/or the baseline levels of physical and commercial losses is not available
4. The utility want to achieve results relatively quickly.

The advantages of a progressive roll-out contract are that, by leaving the configuration of the DMAs to the contractor, and setting the baseline of losses for each DMA as it is created, it is possible to avoid engaging engineering consultants to:

* + Study the network and develop a network reconfiguration and DMA creation scheme for the entire network
	+ Provide a baseline level of losses (both physical and commercial) against which progress can be measured and payment can be paid.

Such studies have been found to be lengthy and costly, so avoiding them saves time and money. Moreover, much is learned about the optimal configuration of the network as DMAs are established, so allowing flexibility in the program of DMA creation has the advantage of allowing emerging information to be incorporated to create more efficient designs.

An even greater benefit can come from avoiding the inherent unreliability of establishing baselines in a situation where the configuration of the network does not allow reliable measurement of physical flows or hours of service.

Baseline estimates created at the start of the contract are often controversial, as information emerging as the contract is implemented may suggest initial estimates were wrong. As examples, it may become clear the split between commercial and physical loss components is different from what was first thought, or that more water is flowing out of the contract area into other areas than was first estimated. Reliable measurements can be difficult until hydraulic isolation and metered inflows are established. DMAs section the network into discrete, hydraulically isolated areas, each with a metered inflow, and so allow accurate baselines to be established. DMAs also enable more accurate measurement of improvements effected by the contractor.

This TOR are not designed to produce a contract that is focused increasing hours of service, reducing commercial losses, or increasing collections. However, if these goals are desired, and the way to reach them is thought to involve creation of DMAs, the TORs could be adapted to those goals by altering the KPI and payment arrangement provisions.

## Essential elements of DBOM Progressive Roll-Out Contract

The essential elements of a DBOM Progressive Roll-Out Contract include:

1. A focus on decreasing physical losses
2. A requirement to create DMAs, with payment for DMA construction made on a BOQ basis
3. Considerable freedom for the contractor to decide on the DMA configuration
4. Establishment of a baseline of water losses in each DMA after it has been created. Losses are measured by contractor and verified by an auditor
5. Leakage control activities to be carried out by the contractor within each DMA, and the contractor is to be paid based on the reduction of physical losses achieved, to create incentives for efficient physical loss control.

## Process for Using This TOR

This TOR is designed to be used by a TTL at Phase 6 of the Manual. It covers the work of both Phase 6 and Phase 7.

**DBOM Progressive Roll-Out Contract:**

**Terms of Reference DRAFT**

**Project/Assignment Title: Country Support: Preparation of ‘Performance-Based, Self-Optimizing 24/7 Contract’ for [utility/town]**

**Task Team Leader: <XXXX>**

**Manager: <XXXX>**

**Department/Division: GWADR (Water Global Practice)**

**Location: Washington DC**

**Appointment Type: Firm**

**Date of Assignment: <XXXX>**

**International Recruitment: x yes 🞏 no**

**A. Background and Objectives**

**Country, Municipality, Utility**

*[In this section a description on country, municipality and utility background should be described by the TTL]*

**Objective of this Assignment**

The objective of this assignment is to develop a DBOM Progressive Roll-Out Contract. This specific type of NRW-reduction performance-based contract (PBC) is outlined in the Manual.[[2]](#footnote-3) The aim of this contract will be to engage a specialized firm to design and implement an NRW Reduction Program based around the progressive segmentation of the network into DMAs.

**Previous work**

This assignment builds on work already done to investigate the suitability of a Performance Based Contract for NRW reduction as a way to achieve the goals of the utility. In particular, *[describe here the findings of the Initial Assessment and (if one was done) the Field Assessment. These reports will be provided to the shortlisted consultants. Describe any other preparatory work done.]*

**Related work**

*[If the NRW PBC is part of a larger investment or reform project, describe here the other components of the project. Mention useful reports and other documents, and say that they will be made available to the shortlisted consultants.]*

**Supported by a Global Program**

This project supported by a World Bank Program is designed to catalyze increasingly good PBCs for NRW Management. Better practices are identified in the short term as faster and more cost-effective preparation of PBC transactions and a greater number of market participants (suppliers and seekers) active in the market. In the medium-to-long term, better practices are identified by improved efficiency of donor-supported NRW-Reduction Programs. This includes better value-for-money for PBC activities in NRW management and better sustainability of NRW performance improvements in participating utilities after a PBC has been completed. *[For more information on the global program, go to insert reference to website or resource link if applicable.]*

# B. SCOPE OF WORK

# Phase 1: Indicative Technical Strategy

## Prepare Situation Report

Note: the idea here is to record all relevant information in one place and ensure it is all agreed. Only limited research should be required.

The Consultant shall assess the existing situation, using available data. The Consultant should rely on the Assessment Report provided as much as possible. However, the Consultant may need to add information and at a minimum, confirm that information from previous assessments is still current and that objectives are clear and agreed. The information summarized should include the following:

* **Objectives**. What has been agreed to so far that the Contract (together with any associated measures), will seek to achieve.
* **Areas**. A description of the service area of the utility (Utility Service Area) and a description of the area of the network expected to be covered by the contract (Contract Area)
* **Service Levels**. Description of Service Levels currently received by customers in the Utility Service Area and Contract Area, so far as this can be ascertained from currently available or easily collected data. If data is not available, this should be noted, and estimates based on expert judgement used. These Service Levels are to include:
	+ Continuity of supply
	+ Reliability of supply
	+ Pressure at customer premises
	+ Chemical and bacteriological parameters of water being received by customers, and comparison with drinking water standards; as well as
	+ Description of the systems and methods used to assess Service Levels.
* **System Input Volumes** to the Utility Service Area and the Contract Area, so far as this can be ascertained from currently available or easily collected data. It shall also describe the equipment and procedures currently used to measure these System Input Volumes
* **Water Balance**. A Water Balance filled out in WB Easy Calc or a similar system, using information already available from the Assessment and from the utility—that is, without field measurement by the Consultant. Where this was done in the Assessment Phase, it will be supplied to the Consultant
* **Supply and Demand Forecasts**. Forecasts, to the extent that they are available from existing sources, of:
	+ Water Demand in the Areas (i.e. both the Utility Service Area and the Contract Area)
	+ Proposed network extensions in the Areas
	+ System input availability in the Areas—this should include increases in input expected from rehabilitation or construction of production facilities
* **Output.** Situation Report, covering the above items.

## Develop Indicative Strategy for DMA Roll-out and NRW Reduction

The Consultant shall prepare an Indicative Strategy for DMA Roll-out and NRW reduction. Since the actual DMA Roll-out and NRW Reduction Strategy will be designed and implemented by the contractor, largely after the contract has been awarded, this is not supposed to be a detailed or accurate plan. Rather, the plan must:

* Provide enough information to show that feasible strategies for progressive creation of DMAs exist
* Indicate the approximate number of DMAs that would likely be needed
* Suggest where the first few DMAs should be created
* Indicate any other work (beyond DMA creation) that the contractor should carry out to control the system, and to provide information, so that the strategy can be successfully implemented, and contractual KPIs can be tracked. These works may include production metering, zonal metering, retail metering, pressure management systems, SCADA systems, changes in commercial management systems and processes, use of GIS, and hydraulic modelling of the network.
* Develop reasonable estimates of the costs of DMA creation
* Develop reasonable estimates of the cost of loss reduction, based on consideration of appropriate changes in network operating practices, including in areas such as: passive and active leak detection and repair, response to mains burst, and scheduling of supply.
* Develop reasonable estimates of the quantities of loss reduction that would be achievable for the costs estimated.
* Estimate the total cost of implementing the strategy
* Include an indicative timeline, showing the likely phasing and duration of each component of the strategy
* Suggest Key Performance Indicators which can be used to track progress on the NRW reduction plan, and the levels on these indicators that would be expected to be reached at various points in the plan.

**Output**: Indicative Strategy for DMA Roll-out and Loss Reduction, covering the above elements.

## Assess economic and financial viability of the indicative strategy

The Consultant shall provide an economic and financial cost benefit analysis of the proposed program, with the following components:

* A Financial Analysis, showing all the costs of the strategy including both operating expenditures and capital expenditures, as well as expected financial benefits from avoided costs or increased revenue and collections
* An Economic Cost Benefit Analysis, which shall show whether the indicative strategy is cost-benefit justified, and whether it is the least cost way to achieve the intended benefits.

Both the financial and economic analyses shall report the sensitivity of the results to changes in key assumptions, including assumptions on the value of physical water saved, the value of reductions in commercial losses, and the discount rate.

**Output:** Economic and Financial Analysis Report covering the above items.

# Phase 2: Develop Contract, Transaction Structure and Procurement Process

The Consultant is to design a contract and procurement process, and finalize them after considering their financial and commercial feasibility and consulting with the client and others.

## Develop Contract

The Consultant is to design and draft the proposed NRW Reduction Contract.

To design the contract the consult shall consider and advise on the following items:

* **Objectives and scope** of the contract, including the improvements the contract is expected to produce, (by itself or in combination with other initiatives). These may include reduction in NRW (or specific components thereof), improvements in services, and/or improvement in aspects of financial performance. These improvements to be expressed as measurable Key Performance Indicators (KPIs)
* **Scope of the contractor’s responsibility**, which should be defined considering possible elements such as:
	+ Work related to creation of information, such as installation of production meters, SCADA systems, GIS systems, and development of hydraulic models and water balances
	+ Work on the network, such as creation of DMAs, pressure management, pipe replacement, replacement of connections, passive and active leak detection, leak repair, burst repairs
	+ Work related to the commercial function, such as customer cadaster, testing or replacement or installation of customer meters, improvements in meter-reading, billing systems, bill preparation and delivery, and collection of bills
	+ Work that is outside traditional NRW reduction contracts, such as improvements in energy efficiency, collection of overdue accounts, improvements in customer service and call centers, adoption of mobile money, installation of pre-payment metering systems, installation of water dispensers, and the like
	+ Maintenance of the system after the targeted gains have been made
	+ Training, capacity-building, and hand-back.
* **Targets and incentives payments**, which shall include:
	+ Clear description of the performance indicators to be used in the contract
	+ Targets for each individual indicator, and specification of their contractual significance (if any), for example links to contractor remuneration or penalties or contract termination or extension
	+ Specifications for how each indicator is to be measured under the contract
	+ Rules for setting or adjusting baseline values after an initial phase of work, if required
	+ Payment or other incentive mechanisms related to progress on the performance indicators
	+ Other payment formulas
	+ Payment disbursement arrangements.
* **Mechanisms for monitoring performance**, including (as applicable) the use of independent monitoring consultants.
* **Other standard terms** such as conditions precedent and dispute resolution and termination procedures.

The Consultant shall propose an allocation of risks under the contract.

After consulting on the proposed design, and considering the market sounding and other constraints and requirements, the consultant shall draft the Performance Based Contract, as well any other legal documents needed for the transaction. These other documents may include: Guarantees, Performance Bonds, and Implementation Agreements. The Contract and other documents must reflect the agreed Transaction Design, and be consistent with international good practice and local law.

**Outputs:**

1. Report on Objectives, Scope, Responsibilities, and Risk Report, covering the areas mentioned above.
2. Contract and other legal documents

## Carry out a market sounding

The Consultant will sound out suitable potential bidders to see if there is sufficient market interest in the transaction to create competition. The consultant shall:

* Identify potential contractors that it would want to bid on the opportunity
* Develop a suitable mechanism—such as a survey, or a structured interview template—to learn from these potential contractors their level of interest in the transactions, and factors that would make them likely to bid
* Apply that mechanism
* Summarize the findings and share these with the client

**Output:** A Market Sounding Report, summarizing the level of market interest, and detailing any changes to the design proposed, with reasons.

## Assess other constraints and requirements

The Consultant shall examine all other factors likely to have a material impact on the feasibility of the project, and shall carry out the following tasks:

* **Legal and Regulatory Due Diligence**. This shall identify any standards that the contract needs to comply with. Among the legal questions that must be considered are relevant contract law, labor law, delegation of public authority, licenses, utility regulation, and rights of way and access to land and infrastructure.
* **Environment, Safety, and Social Due Diligence**. The Consultant will assess the extent to which the project will have environmental, safety or social implications, and recommend what needs to be done to ensure compliance with local and national standards, and World Bank group requirements, in these areas. Cost implications must also be identified.
* **Financing availability**. The Consultant shall check that sources of finance and funding are available to pay for works under the contract, and to allow the utility to maintain performance after the contract ends.

**Output:** Due Diligence Report covering the above items and any other material risks, requirements, or constraints.

## Design Procurement Strategy

The Consultant shall develop an appropriate set of qualification criteria, and a recommendation for how bids will be evaluated and the winning bidder selected. This shall include:

* Recommending a qualification strategy, including, qualification criteria and whether to do prequalification
* Setting out a proposed transaction timeline and workplan
* Recommending a selection method and bid variable

**Output:** Recommended Procurement Strategy

# Phase 3: Manage Competitive Selection Process for Contractor

The Program Manager shall run a competitive process to select a suitable contractor, in accordance with the Procurement Strategy agreed to in Phase 2. To do this, the Program Manager shall:

* Market the transaction
* Develop and implement qualification criteria and a system for qualifying bidders
* Prepare the Request for Proposals, including:
	+ Instructions to bidders
	+ Evaluation criteria
	+ Information memorandum
	+ Any other legal documents required for the conclusion of an effective transaction
* Manage the bidding process for the client, including a bidders’ conference (if appropriate), dealing with requests for clarification, and receiving bids and keeping them confidential
* Assist the client in evaluating the bids
* Assist the client in any negotiations needed to reach commercial close
* Assist the client in managing the relationship with the contractor for the first three months after the client team starts work
* Assist the client in managing stakeholder relationships and communication throughout this phase.

**Deliverables** from this phase will be:

* Qualification Report
* Request for Proposal
* Evaluation Report
* Wrap-up Report at the completion of the assignment. This shall describe the development and implementation of the contract, describe strengths and weaknesses of the approach, offer lesson for similar initiatives in the future, and suggest next steps for the client.

# C. SPECIFIC INPUTS TO BE PRESENTED BY THE CLIENT

The World Bank will make available all relevant documents provided by its Client and other organizations. All information and background documents provided as part of this RFP are for the sole purpose of preparing the Technical and Financial proposal for this assignment. All information should be treated as confidential and not used for any other purpose.

# D. SPECIAL TERMS & CONDITIONS / SPECIFIC CRITERIA

**Language**

All reports should be prepared in English, unless otherwise specified, and delivered in Word format. The financial model shall be delivered in Excel format.

An executive summary of the various documents may be provided in the primary language of the Client.

**Reporting**

The Consultants will report to the TTL based in <XXXX> who will coordinate with the other members of the World Bank Task Team.

**Payment Schedule**

<XXXX> To be included by the TTL / procurement advisor

Required Qualifications and Experience

The Core Team will have the following qualifications:

* **Team Leader**—Must have demonstrated experience in leading the design and implementation of successful utility improvement projects involving performance based contracts. S/he must have at least 10 years of experience in structuring and implementing performance based contracts in water supply in similar country contexts, with demonstrated experience in NRW issues. Specific expertise on designing and implementing PBC for NRW will be a plus. (*One of the other specialists may fill the Team Leader role also*.)
* **NRW Reduction Specialist**—Must be a qualified engineer and have at least 10 years of experience with NRW projects and operations. Must have experience in developing baselines and have knowledge on both apparent (commercial) and technical (physical) loss reduction, including in developing countries [as well as experience dealing with NRW under conditions of intermittent supply (to be included if intermittent supply is characteristic of the client utility)].
* **Contract Design Specialist**—Must be qualified in law or economics (or preferably both) and have at least 5 years of experience in designing performance based contracts for infrastructure. Experience with water utilities, and NRW reduction, is desirable.
* **Financial and Economic Specialist**—Must have at least 5 years of experience with financial modelling of infrastructure, with proven experience with water projects in developing countries. Specific experience in modelling NRW projects—whether PBC or traditional programs—will be a plus. Must also have completed at least three economic cost benefits analyses of infrastructure projects, including at least one water project. Should have a degree in economics and/or finance. (The economic and financial roles may be split between two people, one of whom meets the economic requirements and another who meets the finance requirements, if desired).
* **Utility Commercial Specialist**—The Utility Commercial Specialist will have at least 10 years of experience dealing with commercial aspects of utility management of utilities (customer metering, billing systems, control of illegal connections and thefts, tariff structures and demand management programs, bills collection) including in developing countries *[This position may be deleted if commercial improvements are not a goal of the project.]*
* **Legal Specialist**—Must have 5 years’ experience advising on complex commercial contracts related to infrastructure, and must be familiar with the laws of the country concerned particularly, utility regulation and licensing, contracts, and labor law. *[May be combined with contract design specialist role.]*
* **Environmental and Social Specialist**—Must have at least 5 years of experience advising on environmental and social impacts and compliance for infrastructure projects, including on World Bank projects, and in the country in which the project is located. *[This position may be deleted if economic and social aspects have been adequately dealt with in preparing an overall project of which NRW reduction is just a component.]*

Potential Downstream Work (if applicable)

Downstream work is possible following this assignment for the repetition or scale-up of the approach, or contract monitoring work

1. “Operational Manual: Global Program on Developing Good PBC Practices for Managing NRW,” The World Bank, December 2016. The Operational Manual describes the process for planning and implementing non-revenue water (NRW)-reduction projects, specifically through Performance-Based Contracts (PBCs). It focuses on the process and key decisions to be made. It outlines how the national government, the water utility, the World Bank, and the consultant should work together to improve water service quality and sustainability by correctly assessing when NRW PBCs will be useful, and implementing them well. [↑](#footnote-ref-2)
2. “Operational Manual: Global Program on Developing Good PBC Practices for Managing NRW,” The World Bank, December 2016. The Operational Manual describes the process for planning and implementing non-revenue water (NRW)-reduction projects, specifically through Performance-Based Contracts (PBCs). It focuses on the process and key decisions to be made. It outlines how the national government, the water utility, the World Bank, and the consultant should work together to improve water service quality and sustainability by correctly assessing when NRW PBCs will be useful, and implementing them well. [↑](#footnote-ref-3)