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## The Procurement of a Non-Domestic Water Metering Service

*The Government of Ireland's National Water Pricing Policy Framework requires the charging of non-domestic customers of water services so as to recover the full costs of providing such services to these customers. This is in accordance with national and EU policy on the application of the "polluter pays" principle, including the EU Water Framework Directive (2000/60/EC). Kevin Murray reports on the procurement of a non-domestic water metering service that is intended to provide Irish local authorities with the necessary tools and guidance to implement national water metering policy. This paper was first presented to a joint meeting of the Institution of Engineers of Ireland and CIWEM at 22 Clyde Road, Dublin on the 21<sup>st</sup> October 2002.*

### **Water Services Pricing Policy**

The water services in Ireland are delivered generally by local authorities to both the domestic and non-domestic sectors within their geographical functional areas. It is required that local authorities should move to apply charges to the non-domestic sector that reflect the marginal capital costs and the average operational costs of providing it with water and waste water services. The charge is to be applied on the basis of the "water in / water out" principle, i.e. recovery of the full cost of all water services provision by means of a unit charge in respect of metered water supply.

In March 2002, the Department of the Environment and Local Government launched a set of "Model Agreements and Guidance on the Implementation of Water Services Pricing Policy". These documents were prepared to assist in the development of a comprehensive and transparent system of charging for water and waste water services to the non-domestic sector. They were developed as a guide to local authorities in the preparation of agreements with non-domestic customers for the provision of these services.

It is considered by the Department of the Environment and Local Government that general non-domestic customers of water services (water and waste water) should pay a single local authority-wide consolidated charge. The Model Agreements provide guidance (inter alia) on the approach to be used in the determination of the costs of providing water and waste water services to the non-domestic sector. Where the water services being provided to a specific non-domestic customer represent a significant proportion of the capacity of a treatment plant, the local authority should normally require that such a customer enter into a reserved (in the case of waste water) or an assigned (in the case of water supply) capacity agreement.

The Model Forms of Agreement have been prepared in order to address a number of objectives in addition to the application of national water pricing policy. They offer a means of prescribing the volume and characteristics of waste water that may be discharged by non-domestic customers, and the capacity of water treatment assigned to a significant customer. They also make provision for appropriate insurances and indemnities between the parties, termination of the service and dispute resolution. These agreements were developed out of contracts that were negotiated in Clonmel, Co. Tipperary between Clonmel Borough Council and significant local non-domestic customers for the provision of waste water collection and treatment services at the Clonmel Waste Water Treatment Plant which was completed in 1999.

## **Action Plans**

In order to implement the national water services pricing policy, local authorities are required to achieve universal metering of the water supplied to the non-domestic sector by 2006. Government policy in this respect has been described in a series of circulars since March 2000 and has now been consolidated into a single circular L16/02 "Water Services Pricing Policy", issued in September 2002.

Local authorities are now required by the Department of the Environment and Local Government to develop an action plan, to include the following steps:

- **Identify Customers:** Initiate a process for the comprehensive identification and charging of all non-domestic customers with full water and waste water services cost recovery. Gather data on the existing and known non-domestic customers, and the existing meter stock, and compile this information into a database.
- **Identify Costs:** Develop and/or refine mechanisms that clearly identify and effectively segregate non-domestic and domestic costs. Determine the annual operating costs and marginal capital costs of providing the water and waste water services for the non-domestic sector across the functional area of the local authority.
- **Develop a Rate:** Develop from the foregoing, a volumetric rate (per cubic metre) for the provision of water and waste water services for the general non-domestic customers, including an allowance for unaccounted-water losses (inter alia).
- **Install Meters:** Review metering requirements and prepare a schedule for the implementation of universal non-domestic metering. Let a contract to install meters, to probably include the reading of the meters and the issuing of bills to the non-domestic sector.
- **Communicate:** Introduce procedures that advise domestic customers of the cost associated with the provision of their water service.

## **Sligo Water Metering Project (Objectives)**

Following the publication of the Model Forms of Agreement for Water Services, Atkins (in association with H2O Water Services) has been engaged by Sligo County Council and Sligo Borough Council, to procure a water metering and billing service through a Design, Build and Operate (DBO) form of contract.

The Sligo Water Metering Project is a demonstration project and is not necessarily intended as a template for implementation by other local authorities. Indeed, several other local authorities have made progress in this respect, and non-domestic metering coverage averages 37% (April 2002) and is as high as 90% in some administrative areas. However, all local authorities are required to identify their own requirements in this matter and initiate a process that will lead to universal water metering of non-domestic customers in their own functional area by 2006.

It is the primary objective of the Sligo Water Metering Project to procure a comprehensive water metering and billing service of the non-domestic sector for Sligo County Council and Sligo Borough Council. A Preliminary Report was issued last year (2002) and it is envisaged that a DBO contract will be let shortly. Pre-qualification commenced in December 2002 with the publication of a contract notice in the Official Journal of the European Union, and submissions are being assessed at present (Feb 03). It is envisaged that the meters will be installed in a 12-15 month capital works programme following the appointment of the private service provider after Easter 2003.

The second objective of the project is to report upon the Sligo Water Metering Project in a manner that will assist national rollout of water metering in the non-domestic sector. In pursuit of the second objective an interim set of Notes for Guidance was issued to all local authorities in Ireland in July 2002, followed by updated guidance in January 2003. Further updates will be produced over the life of the Sligo Project and a Customer Services Manual will also be produced, to assist local authorities in the implementation of water pricing policy.

The Notes for Guidance are not intended to be prescriptive and each local authority is expected to evaluate the information contained within the Notes for Guidance in the context of its own local circumstances.

It has become apparent that that local authorities in Ireland have further related objectives that are likely to impact upon and influence the delivery of a water metering project. These objectives are primarily concerned with the efficient management of the water service, the networks and treatment systems, and the conservation of the water resource. While these objectives are not at the core of the Sligo project, they have been addressed and accommodated within the Notes for Guidance.

However, at the outset of a water-metering project, the local authority is expected to identify and recognise those objectives that are concerned with water pricing policy and those that are associated with network management or water conservation. In the former case, there is clear authority to recover costs from the non-domestic customer, and this is not necessarily the case for the remaining objectives. In summary, the client must identify the “needs” and the “wants” of the project separately, because the customer may be charged for the “needs” but not for the “wants”, where the “needs” are those tasks that are required to deliver on the core objectives of the project and the “wants” are the added value (cost) services.

### **Procurement Issues**

The method of procurement of a non-domestic water metering service is a matter that will be evaluated by each local authority with regard to its own circumstances. While the Department of the Environment and Local Government has stated that “...consideration should be given to outsourcing...” (Circular L16/02), a particular local authority may or may not wish to involve the private sector in a greater or lesser part of the delivery of the water metering and billing service. The decision may be influenced by the extent to which an authority has already implemented water metering within its own functional area.

The Sligo Water Metering Project is proceeding as a Design, Build and Operate (DBO) type contract, with a private service provider contracted to install and operate the water metering system for a period of 10 years. In this instance, the tasks are substantially new (or significantly expanded) in the functional area of the authority and the contract will involve the provision of new services rather than the replacement of existing services.

Where a DBO form of contract is proposed for the delivery of a water metering service, the client (or his representatives) should consider whether the project meets the “suitability criteria” as detailed in section 2.2 of “A Policy Framework for Public Private Partnership Projects in the Water Services Sector” (August 2001), available from the Department of the Environment and Local Government.

The Design, Build & Operate process allows the tendering of innovative solutions with newer technologies if these are more economically advantageous. DBO should offer advantages with regard to the reliability of equipment and the ongoing maintenance of the metering equipment, and should offer a better allocation of risk between the client and the private service provider. In the case of DBO, the client prepares a performance specification that defines the “level of service” standards rather than a prescriptive list of particular technical and operational requirements.

Where the local authority procures the water metering service through a DBO form of contract, the minimum scope of the service should include:

- Validation & maintenance of the database of customers;
- Detailed pre-installation surveys;
- Determination of suitable meter locations;
- Meter Sizing;
- Installation & maintenance of meters;
- Meter readings;
- Supply of meter readings to the client.

In some cases the local authority may wish to include the issuing of the bills to the non-domestic sector and debt collection in the service to be provided by the private service provider.

It is unlikely that a local authority would choose to follow a “Design & Build” route without the “Operate” component, as the risk of poor installation and faulty meters would fall back upon the authority. Such an approach is likely to result in low capital costs and high operational costs.

It may be feasible for a local authority to link its metering programme with an adjacent authority or authorities, or unite on a regional basis to procure a single water metering service for their functional areas.

The form of contract for the Sligo Water Metering DBO Project will be a modified form of the FIDIC “Conditions of Contract for Plant and Design-Build” (1<sup>st</sup> Ed., 1999), more commonly known as the “New Yellow Book”. This document has been modified to reflect Irish market conditions, works in the public sector and the provision of a service phase in the contract.

## ***Project Methodology***

In order to progress what represents a new form of project in the Irish market the consultants chose to use the following strategy:

- The preparation and presentation of an initial Working Paper to identify a range of issues germane to the project;
- A Brainstorming Workshop in Sligo (based on the Working Paper) involving Sligo County Council, Sligo Borough Council, the Department of the Environment and Local Government, the Local Government Computer Services Board, and representatives from local authorities that had expressed an interest in water metering;
- A Two-day Workshop and Site-visit to the operations centre of Yorkshire Water and the headquarters of H2O Water Services in Yorkshire, to inform the process in the context of existing water metering service delivery in the UK;
- Risk Management Workshops;
- A Payment Mechanisms Workshop.

These workshops allowed the consultants to gain an understanding of the needs and wants of the client and to both identify and discuss issues that might impact upon the project. Detailed sets of minutes were prepared after each workshop that highlighted the issues to be addressed in the contract.

Arising from the first risk workshop, a Risk Management Report and a preliminary Risk Register were produced by Atkins Faithful & Gould. A further risk workshop was arranged to develop payment mechanisms for incorporation into the contract documents. The risk assessment at the Option Appraisal Stage was conducted broadly in accordance with the recommendations given in "A Policy Framework for Public Private Partnerships" by PricewaterhouseCooper et al (April 2000) on behalf of the Department of the Environment and Local Government.

In parallel with the workshops described above, the consultants undertook a pilot survey of between 50 and 60 non-domestic customers in the functional areas of Sligo Borough Council and Sligo County Council in April 2002. The purpose of the survey was to gain a clear appreciation of the difficulties that would face a contractor if asked to validate and populate the database of customers.

The pilot surveys were greatly assisted by the level of information made available by Sligo County Council about their non-domestic customers; a significant proportion of whom were already metered or paying flat-rate water charges. Sligo County Council has compiled a database of its known non-domestic customers in Microsoft Access format.

Trained and experienced technicians, supported by engineers, undertook the pilot surveys. The teams used customer survey forms that have been used successfully by H<sub>2</sub>O Water Services in the UK and they were able to identify the difficulties that would face a private service provider in the installation of meters in a variety of non-domestic situations.

The consultants brought together the outputs from the workshops and the pilot surveys into a Preliminary Report that was delivered in draft format to the Steering Group in June 2002. The preparation of contract documents was begun on the basis of the findings of the Preliminary Report. A pre-qualification procedure commenced in December 2002, with the publication of a contract notice in the Official Journal of the European Union, and a short-list of tenders is currently (Feb 03) being prepared.

## ***Technical Issues***

In accordance with the principles of a DBO form of contract, it is intended that the selection of the particular meter and the associated technologies will be a matter for the private service provider, in accordance with the performance specification provided by the local authority client. When deciding upon the performance specification the local authority must take care to ensure that the specified requirements are commensurate with the service that is required. The client should also be aware that a performance specification must not be unnecessarily restrictive, such that the market would be limited and result in a less competitive price being obtained.

Meter technology has advanced markedly in recent years and the meter supplier can offer a wide range of different products. The traditional mechanical meters continue to be used widely, but are now challenged by a range of meters that do not have moving parts. While all types of meters will have their proponents, the use of a DBO form of contract allocates the risk of technology choice largely to the private service provider. However, while the meter would be purchased and maintained by the private service provider, it would be owned by the local authority client.

There has been extensive investigation into the ability of AMR (Automatic Meter Reading) technologies to deliver practical and cost-effective meter reading services; not least a pilot study in Midleton, Co Cork, which has been promoted by Cork County Council. If the private service provider is satisfied that AMR can deliver savings or provide opportunities that will make his tender more competitive, then he or she will propose those technologies, provided that the "Employer's Requirements" allow such technologies to be tendered.

The performance of meters will deteriorate over the lifetime of a contract and this will impact adversely upon the accuracy of the meter readings. The private service provider will be held responsible for the maintenance, calibration and replacement of meters, and the payment mechanisms must be structured to ensure that specified levels of accuracy are maintained.

Experience has shown that the cost of external meter installation is significantly greater than internal installations, due to the costs of excavation and reinstatement. However, it is suggested that local authority clients will wish to require the external installation of meters as close as possible to the property boundary, where possible, for reasons associated with the management of water leakage on the customer side.

Other issues associated with meter technology and installation are dealt with in the Notes for Guidance that have been prepared as a part of the Sligo Water Meter Project.

### ***Payment Mechanisms***

Over the course of the Sligo Water Metering Project, the consultants have been developing payment strategies for a Design, Build & Operate form of contract. These have evolved out of a series of workshops and have developed through the risk assessments. It is seen as essential to ensure that the payment mechanisms are fair and equitable to both parties to the contract. It is also important to avoid payment mechanisms that could be used as negative drivers against any of the objectives of the project.

Certain key payment drivers were identified at an early stage. It was envisaged that drivers should not be introduced that would act against the principle of water conservation. Hence, payment mechanisms related to quantity of water read on the meters were excluded. It was determined that the drivers should encourage the identification by the private service provider of new non-domestic customers, the full recovery of costs in a fair and equitable manner and should encourage appropriate levels of service.

It is envisaged that the private service provider would be paid for the design and installation of the capital works on a regular basis through the installation phase. These payments would cover the costs of customer pre-installation surveys, meter installations, customer database development, office establishment and billing system development.

Following the commencement of the Operate phase, the private service provider would be paid for the supply of meter readings to the local authority, including the issue of bills. These meter-read payments would include for all ancillary costs associated with the regular maintenance and calibration/replacement of the meters and network. The private service provider would also receive payments for the identification of new customers.

In order to maintain appropriate levels of service, there should be "services performance payments", based on the achievement of pre-determined targets on key performance indicators. These payments (or reductions) may be linked to the timeliness of the issue of bills or the time taken to attend to a call from a customer.

Finally, it is envisaged that a combined Maintenance and Replacement Fund would be established to ensure the timely replacement of meters over the life of the service contract, and that the value of the asset stock is not allowed to depreciate unreasonably over the final years of the contract. It is proposed that the private service provider should submit a meter replacement schedule with his or her tender, which will form the basis of a maintenance and replacement programme. The regular payments to the service provider should contain a retention element that can be allocated to a separate account in the joint names of the service provider and the client, and from which the service provider can draw in accordance with the maintenance and replacement schedule.

## **Summary**

This paper on the procurement of a non-domestic water metering service is drawn largely from the experiences of the project team on the Sligo Water Metering Project, which is currently at tender stage. This is a new form of service contract in the Irish context and has required the investigation of methods of service delivery that would not be common in Ireland or elsewhere. By choosing a Design, Build and Operate form of contract, the project team has sought to allocate risk to where it can best be managed and ensure that the client receives a service commensurate with the core objectives of the project.

(Note to Editors: Kevin Murray is a Group Engineer with Atkins Water, based in Cork, Ireland. He is a Chartered Member of the Institution of Engineers of Ireland and is the Project Manager for both the "Model Forms of Agreement for Water Services" and the "Sligo Water Metering Project". Atkins would particularly like to acknowledge that this article has been written with the kind permission of the Water Services Policy Unit of the Department of the Environment and Local Government, Clonmel Borough Council, Sligo County Council and Sligo Borough Council.)

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## **NOTES TO EDITORS:**

Atkins is one of the world's leading providers of professional, technology based consultancy and support services. Atkins operates from 175 offices around the world and employs over 15,000 permanent staff. In recent years, it has expanded from its historical base in traditional engineering, management consultancy and property services into related technological consultancy and the management of outsourced facilities. Atkins has enormous expertise, providing both breadth and depth of knowledge in an extremely diverse range of disciplines. Our clients are varied and include governments, local and regional authorities, funding agencies and commercial and industrial enterprises. We help our clients to realise their objectives by developing and delivering practical solutions, adding value to their businesses through the application of our experience, innovative thinking and state-of-the-art technology.

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**Ends**