

Please let me pay for Water.

Universal Water Charges and Water Metering must be introduced in Ireland without delay, write Kevin Murray (Chartered Engineer). Water is a precious resource and it is devalued in a regime where the charges are hidden in central taxation. Worse still, those that provide wholesome drinking water are demeaned in the absence of direct payment for a quality service.

Water Charges have been much in the news in recent months and have been debated by politicians, economists and the “commentariat”. Surely no other sector of our society is better placed than Engineers to consider the arguments and determine the path forward.

We have a perception problem with water services in Ireland. The general public has forgotten what it was like to rely on the village pump; or to have no indoor toilet facilities. We have forgotten what miracles are worked every day to produce clean wholesome public drinking water and to deliver it to over 1.25 million domestic dwellings every minute of every day of every year. We have chosen to “flush and forget” and never consider what it takes to clean that water so that we can bath safely in our rivers and bays. A service that is provided for free is defined as “slavery”; and the quality of the service will degrade.

Please let me pay for water. Then I know who to blame if the service is poor; and who to thank for the good service. ***To prevent me paying for water is a denial of my human rights.***

In paying directly to the local authority for water services, we can start to rebuild an awareness of the value of water among the community. We may then have a better chance of communicating the message that water is a precious resource. I am willing to pay €10 a week to have clean drinking water pumped into my house for my family and to have the waste water taken away and cleaned for me. It is a lot better value than a couple of pints of stout on a Friday night.

How much should we pay for Water?

For reasons that will be explained later in this article, we have to start with a flat charge for water. We don't have water meters today and we won't have them tomorrow. Even if we did embark on a water metering programme it would take a long time and some properties will never be metered.

We have a very good idea of the costs of water services in Ireland because the non-domestic sector has been paying metered water charges for several years. In 2009, the typical water charge for a non-domestic customer is €2.25 per cubic meter. This is a consolidated charge for both water supply and waste water collection and treatment. We also know that the typical consumption of a family of four (unmetered) is probably about 220 m³ per annum. ***This suggests that a family of four in Ireland should be paying an annual water charge of almost €500.*** The rate may be 25% higher or lower depending on the costs in each local authority.

It has been suggested in the media in recent weeks that a charge of €175 per household is being considered by the Department of Finance. The simple figures above suggest that such a rate would be unrealistic and would not fund water services. Furthermore, the rate of €2.25 would be normal for Western Europe, and would be significantly lower than the UK (€2.57) and Germany (€3.93) where full cost recovery is sought from the customer (2007 figures).

Obviously the same flat charge can't be applied to all 1.25 million dwellings that are supplied with public water in Ireland. However, we know that almost 85% of dwellings have occupancy of four persons or less, so

it would be reasonable to cap the water charge at €500 per dwelling. We also know that almost 50% of properties have occupancy of two persons or less. It is proposed that there be two bands of water charge; either the lower band (€300) or the upper band (€500). All customers would be charged at the higher band, but would be provided annually with the opportunity to self-declare for the lower band.

This is simple and straightforward and could be introduced tomorrow. Why wait?

Naturally there are those that will have difficulty paying any water charge; and will already have a difficulty paying other utility bills. It is right and proper that these customers should be protected, but this must be done through the social welfare system. It is not sensible to give free allocations of water. We don't get free allocations of electricity or gas.

What is the argument for Metering?

It is largely accepted that a metered charge is preferable for the consumer. Although this presumes that the consumer accepts that he or she now has to pay for the cost of a meter and having it read; and this may not be offset by savings in personal consumption. This may explain why the voluntary meter "opt-in" in the UK has had a slow take-up among customers.

Nevertheless, there is a prima-facia case made that the introduction of water charges in the domestic sector should be accompanied by a programme of domestic water metering. Indeed, it is suggested that charges might be postponed until water meters are in place for everybody. This is not a sensible argument, because local authorities need revenue **now** for water services.

It is argued that water meters will be fairer and will change the behaviour of the consumer, i.e. they will use a lot less water. ***This is largely a myth.***

It has been shown that the installation of a water meter leads to a short-term reduction in water consumption of 15% to 20%. However, this reduction soon narrows again as customers realise that water is not an expensive commodity. OFWAT (UK) recommends an estimated water consumption of 150 l/hd/day for unmetered customers and 135 l/hd/day for metered customers – a difference of just 10%. One would expect to get equivalent reductions through education programmes, and indeed it could be argued that it is those that are most aware of the value of water that elect to go on a metered supply.

It can be easily calculated that, based on 1.25 million water-supplied (80% on public sewer) dwellings in Ireland with an average annual consolidated charge of €2.25 /m³, the savings per annum brought about by water metering changing behaviour would be €38.25 million.

However, we can also calculate that the cost of a universal water metering programme for 1.25 million households, based on an average installation cost of €400 for an external meter and box, would be at least €500 million, and possible a lot more. Does this stack up? It might take Ireland 10 to 15 years to complete universal metering, but the annual capital investment is likely to exceed the savings made through altering customer behaviour.

The myth is not the full story. Water Conservation is the reason for metering.

In reality, the impact of water metering is not going to be found so much in the normal daily consumption of water. It is more in the reduction of losses through customer-side leakage. Recent experience in Ireland suggests that between 55% and 85% of unaccounted-for-water may occur on the customer's side of the stop-cock. For many years it has been realised that an unacceptable proportion of the potable water

produced by local authorities does not reach the consumer's tap. Unaccounted-for-water (ufw) remains over 50% in many local authority water schemes nationally. This is an unconscionable waste of a precious and costly resource, but water conservation programmes are largely directed at fixing the leaks in the public network not the private service connections.

A simple analysis of the costs of "wastage" on the private-side of the stop-cock suggests that the potential **value of the water that might be saved could be €100m per annum** nationally. This would be achieved through the identification of leaks as meters are installed and then the early repair of new leaks as they are identified through regular meter reading. Furthermore, the elimination of so much wastage would have equivalent savings in the deferral of capital schemes to increase the supply of potable water.

Therefore, the real reason for water metering is not to alter personal consumption behaviour, but rather to control wastage through leakage. That is also why **water meters must be installed at the property boundary** and not inside the property. All of the customer-side leakage must be captured by the meter.

What is the route to Implementation?

Water charges must be introduced as quickly as possible to give a revenue stream for local authorities and to reinstate in the public mind an appreciation of and accountability for the service.

Local Authorities must move quickly to validate their databases of domestic customers. This is a water conservation task that is essential for the implementation of water charges initially and water metering to follow.

Central Government must now review non-domestic water charge policies and domestic allowances to ensure consistency with incoming domestic charges.

Domestic metering should be progressed on the basis of a risk analysis that identifies those classes of domestic dwellings that are most likely to have above-average water usage and wastage. Those that are most likely to either waste water or use water for non-domestic purposes (swimming pool, irrigation) should be among the first to be metered.

It is worth noting that those properties built before 1960 are likely to have lead pipes from the public connection to the kitchen sink. These lead pipes in many cases may be paper-thin and are a prime source of hidden leaks between the road and the house; in addition to being a source of lead in the drinking water. Therefore, the age of the property is likely to be a significant risk factor for a metering programme.

Water metering is an activity that may be organised at a national or regional level but must be implemented at a local level. Each individual installation is likely to be most successful where local knowledge is involved; however, the overall management of resources has to be taken at a strategic level. Resources will dictate how the programme is to be implemented.

The Model for the Future.

Universal water metering in both the domestic and non-domestic sectors will offer tremendous opportunities for network management in Ireland. The Dublin Region leads international best practice already in the implementation of an automatic meter reading system for the non-domestic meters. Those involved in the implementation of domestic water metering in Ireland should be mindful of the opportunities to use smart meters in conjunction with the pilot smart metering studies that are being undertaken by the gas and electricity utilities in Ireland.

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