

Southern Water's Universal Metering Programme

'intelligent' water meters employ Automatic Meter Reading (AMR) technology

by Jon Crooke

With the South East classed by the government as an area of water stress, metering, alongside tackling leakage and developing new water resources, is an important part of Southern Water's long-term strategy to manage water resources for the future. As part of the 25-year Water Resources Management Plan, all the options for managing water resources were considered on how much water they would provide, how much it would cost customers, the impact on the environment and how sustainable they would be in the long-term. Using a desalination plant to treat seawater for drinking water uses a lot of energy, is expensive and creates more carbon emissions. Building new reservoirs is also an expensive option which would increase customer bills, as well as have a significant impact on the environment. Metering is the most cost effective and environmentally friendly option.



Installation of an AMR meter

Courtesy of Southern Water

On average, households with a water meter tend to use 10% less water. By 2015, the installation of meters across Southern Water's region will reduce the amount of water people use to the extent that it would take until 2035 to return to current levels of water use, even allowing for population growth and the additional demand on water resources. The programme will save 17.6 million litres of water each day – enough to supply daily the population of Worthing in West Sussex, or Chatham in Kent, or Winchester in Hampshire.

Southern Water's five-year programme to install half a million new 'intelligent' water meters is progressing well having started in late 2010. More than 50,000 new Automatic Meter Reading (AMR) meters have been installed so far, with a further 150,000 to be in the ground by April 2012. The rollout is being phased in, having started with the most water-stressed areas of Southampton in Hampshire, Horsham in West Sussex and the Medway area in Kent. It is now extending to places where there is the greatest opportunity to reduce leakage, and after that will be driven by efficiency.

Once the metering programme is completed, 92% of households in the Southern Water region will be metered, compared to the current rate of about 40%. It is difficult to measure how much water is used in some properties, due to the fact that some properties have complex plumbing systems, or that more than one flat or house may have the same supply pipe. These make up about 8% of households and these properties will not get a water meter in this programme, but instead the households will be moved on to assessed charges based on the number of bedrooms in the property. The aim is to fit meters in these households after 2015.

What's involved?

Southern Water are keen to stress that they are not implementing an installation programme; they are, in fact, overseeing a 'customer journey'. Whilst getting the meters in the ground on schedule is obviously important, a key priority is to help customers understand why meters are being installed, offer advice and support to help them reduce their water use and make the most of the opportunity



Customer liaison

Courtesy of Southern Water

to reduce their water and energy bills. Heating water for day to day tasks, such as taking a shower, makes up about 20% of the average home's carbon footprint. This can add up to about £200 a year on gas and electricity bills.

In most cases meters are fitted in the public footpath outside properties, so there is no need to enter customers' homes. Customers are given lots of written information, both before and after installation, about their new meter and metered bill. The installation teams work on a street by street basis and when they are in a particular area a Mobile Exhibition Unit (MEU) is parked in the street so that customers can talk to Southern Water's advisors directly. An ongoing comprehensive public awareness campaign, including radio and newspaper advertising, media coverage, and community and schools liaison, is also in place to ensure that our key message of 'Save water, save energy, save money' is further emphasised.

Undertakings

The main contractor for the metering programme is Balfour Beatty Utility Solutions. As well as installing half a million new water meters, the Balfour installation teams are exchanging a further 100,000 'old' meters over the course of the project. The installation process can vary from simply screwing a new meter in, to having to dig a hole (typically 80cm deep), put in a plastic meter box and meter, and then reinstate the ground.

A further option is the 'no-dig' technology offered by the Melco adaptor unit. The Melco screws directly into the top of the stop tap, allowing a meter to be fitted without the need to excavate around the pipe. The adjustable flow tube enables the adaptor to be fitted to old and new stop taps without the need to turn off the mains water supply. It can be used when the stop tap is reachable from ground level – i.e. no deeper than around 75cm. For customers, the major benefit is that the installation is much quicker and there is no interruption to the water supply. As there is no excavation, disruption is reduced and no reinstatement works are needed. The process is also much safer for those fitting the meter and reduces the need for safety barriers and traffic control.

'Intelligent' meter technology

The new 'intelligent' Gladiator meters are supplied by Arad and are the most advanced to be used in the water industry. They employ Automatic Meter Reading (AMR) technology so they can be read remotely using 'drive-by' equipment installed in a vehicle. We estimate that this will enable 20,000 readings to be taken a day, as opposed to the 200 or so per day which can be done manually. Monthly readings will be collected twice a year and presented to customers through a special internet 'portal' so they can clearly see the detail of their monthly consumption.

The signals from the meters are transmitted constantly and picked up by receivers inside meter reading vehicles which are integrated with navigation and route optimisation software. This

enables efficient coverage of large areas. The collected reads are then transmitted to a central database which feeds into our billing system.

One of the Gladiator's features is a leak alarm, enabling quick detection of any leakage on customers' supply pipes and within their households, thus reducing water loss. As the meter's starting flow is only 1 litre/hour, even the smallest leaks can be easily identified.

Following customer feedback, Southern Water have deferred implementing a seasonal tariff for the foreseeable future. However, to enable the implementation of different tariffs, the meters do have the ability to transmit reads as they are recorded over the space of 10 months. In addition, each meter can log 4,000 reads with programmable intervals. These reads are downloaded remotely in less than one minute, enabling SW to analyse the daily, weekly, or monthly consumption. Arad's Dialogue 3G system is a two way system, enabling not only remote reading of the water meters, but also programming and controlling of the water meters remotely.

Since the programme began in earnest in late 2010, Southern Water have been 'ramping up' the number of meters being installed each week and are aiming to install an average of more than 2,500 meters a week during 2011/12. The feedback received from customers, both on the overall programme and the experience they have had in having a meter installed, has been very positive and we continue to build on the significant progress that has been made to date.

For further information

For further information regarding Southern Water's metering programme, please visit the dedicated metering website: www.southernwater.co.uk/metering. You can also contact Joel Hufford, Public Relations Manager (Metering) on 01273 663105 or e-mail joel.hufford@southernwater.co.uk.

The editor and publishers wish to thank Jon Crooke, Field Installation Manager with Southern Water for preparing the above article for publication.



AMR Water Meters

Courtesy of Southern Water

MELCO STOPCOCK ADAPTOR



www.mwmdistributorsltd.co.uk

The award winning Melco Stopcock Adaptor has been designed to enable the installation of concentric water meters into existing stop taps without the need of excavating or fitting of meter boxes.

MWM Distributors Ltd is registered to BS EN ISO 9001:2000 - Water Companies that have approved MWM Distributors Products include Anglian Water, Bristol Water, Dwr Cymru Welsh Water, Northumbrian Water, Severn Trent Water, Southern Water, Thames Water, United Utilities, Yorkshire Water

MWM Distributors Ltd

M W M Distributors Ltd, Unit 52-53 Enfield Industrial Estate
Redditch, Worcestershire B97 6DE

Tel: +44 (0)1527 68200

Fax: +44 (0)1527 67100