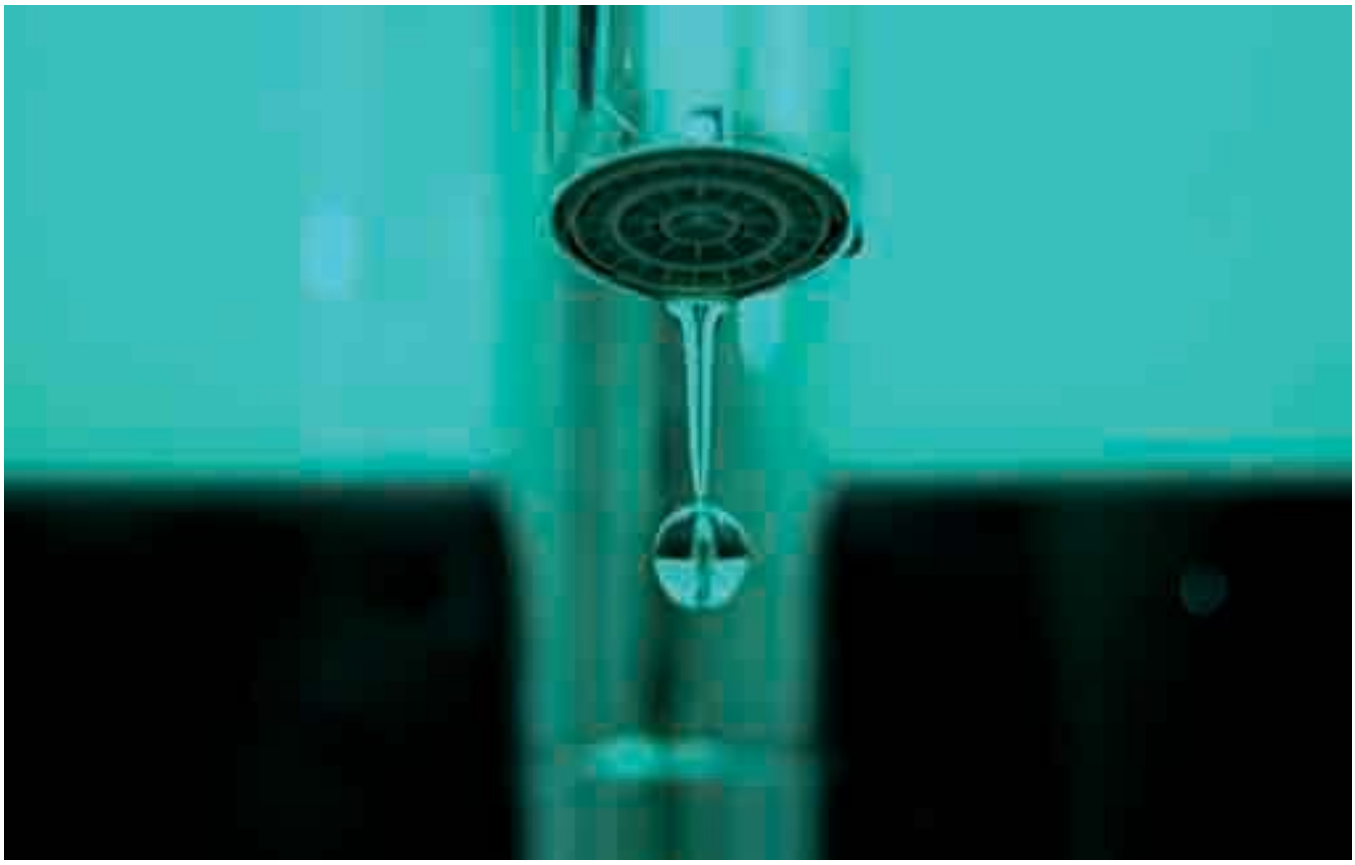

RATING WATER QUALITY
THE AUSTRALIAN EXPERIENCE

Professor N.F. Gray, Trinity College, Dublin writes about the Australian approach to water efficiency labelling.

With low rainfall and high evaporation rates, Australia is one of the driest continents in the world. With a rapidly expanding population and increasing standard of living, the country is all too aware that a serious shortfall between demand and supply of water is developing. The Australian Government has made a significant step towards stabilising and potentially reducing demand by the introduction in July 2006 of a new water efficiency labelling scheme for consumers and manufacturers. The mandatory Water Efficiency Labelling and Standards Scheme (WELS) applies to seven product types that must now be labelled for water efficiency. Using a six star rating system, the labelling scheme is very similar to that currently employed in many parts of the world for energy efficiency of white electrical goods. The new labels give a star rating of between one to six, with six being the best, as well as an actual water consumption figure. The products covered by WELS are washing machines, dishwashers, showers, toilets, urinals, all taps, except those used over the bath, and flow controllers. These must now be tested and rated according to new water efficiency standards, and registered with the National Regulator. Manufactures have been aware of the introduction of the scheme for some time and many have been using a voluntary labelling scheme that has now been replaced by the WELS.

Legal requirement

While the scheme now places a legal requirement on manufacturers and importers to register and label all new products, two transition dates have been set to allow products made or imported before 1 July 2006 still to be sold. These are 31 December 2007 for dishwashers and washing machines, and 31 December 2006 for all other products covered by the scheme. A Regulator has been appointed to enforce the scheme who has been given a wide range of powers to ensure its success. Compliance with WELS is monitored by a permanent team of Inspectors who can impose a range fines and penalties.

The Inspectors have powers of entry and search, and are even empowered to seize documents and equipment from premisies and retain them for examination and testing for up to 90 days. Under the WELS legislation (i.e. the Water Efficiency Labelling and Standards Act 2005) the regulator can compel products to be withdrawn from the market, deregister products and also issue fines for inaccurate advertising claims. Clearly the Australian Government are very committed to the success of the scheme. The WELS label is very distintive and can be reduced in size to suit smaller products, but must be at least 28mm in width. The law requires that the label must be fixed to the product, and if packaged it must appear on the outer packaging. The actual

label or the details contained on the label must also appear in any product specifications such as brochures, magazines, adsvertisements or web site promoting a registered product.

Expectations

So what is expected from the scheme? The majority of water savings will be from white goods, that is washing machines and dishwashers. A water efficient washing machine uses one-third the water of an older model and it is anticipated that by 2016 WELS approved washing machines will be saving about 25,600 megalitres of water per year. The most efficient dishwashers currently use half the water of average models and it is expected that the WELS scheme will save a further 1,200 megalitres per annum from improved water use.
Toilet flushing contributes between 25-30% of normal household water usage with between 6 to 12 litres of water used per flush, depending on design and age of the cistern. Dual flush cisterns are increasingly common with normally 6 litres used for full flush and 3 litres for a half flush. Compared to the more traditional single flush action cistern, this represents an average water usage of just 3.8 litres per flush or a 67% overall reduction in water used for toilet flushing by a family of four. A single flush toilet costs around $76 per annum to operate compared with just $25 per annum for a water-efficient dual flush cistern. WELS sets performance requirements for toilets including a minimum water efficiency targets.
The average water consumption for new toilets must not exceed 5.5 litres per flush. In the regulations, the average water consumption of a dual flush cistern is taken to be the average of one full flush and four half flushes. This means dual flush cisterns of 9 litre full flush/ and 4.5 litre half flush are the least efficient products that can be sold. Urinals are also covered by the scheme, and generally use about 2.2 litres per flush. The most efficient urinals available through the scheme can reduce flush volumes by 30-35% but when used with 'smart control' to reduce uncessary flushing, then savings in water use can be as high as 50%.

Consumption trends

Taps now have to comply with new WELS specifications to reduce flow rates. A typical tap discharges water at a rate of between 15 to 18 litres per minute. Low-flow taps and those fitted with either an aerator or flow restrictor may reduce flow to less than a third of standard taps, with low-flow and aerating models using as little as 2 litres per minute.
Showers are very popular in Australia and are seen as a major consumer of water, with a standard showerhead using between 15 to 25 litres of water per minute.
On average each shower uses between 120-150 litres of water which could be reduced by 40% if a water efficient showerhead is installed that uses as little as 6 or 7 litres per minute. Replacing old showerheads with a water efficient model is estimated to save 14,500 litres per household each year. This could also reduce energy usage by 47%. The new labelling system will allow consumers to easily compare the water efficiency of products before they purchase, and manufactures and specific products can be compared on-line at the WELS website (www.waterrating.gov.au).
The on-line facility contains exhaustive information about an enormous range of products, both Australian and imported, and allows potential customers to calculate water consumption for each product using their own usage data over variable set periods. It is confidently predicted that labelling will be an incentive for manufacturers to continue to improve the water efficiency of their products. This is good news for environmentally conscious customers worldwide.
With the per capita water usage in Australia amongst the highest in the world at 350 litres per day, the Government is hoping to reduce domestic water demand in the 7.4 million households throughout the country by 5% or 87,200 megalitres each year by 2016. It is estimated that half the water savings will come from more efficient washing machines, about 25 per cent from the installation of improved shower heads and 22 per cent from optimum dual flush toilets. The greater efficiency of products will not only save energy used in the treatment and supply of drinking water, but also through more efficient usage of hot water in the home. The WELS scheme will not only be saving consumers money on both their water and electricty bills, it will be reducing their carbon footprint and going a long way towards securing their water supply for the immediate future. Φ

A new revised edition of Professor Gray's book Drinking Water Quality: Problems and Solutions is be published later in the year by Cambridge University Press.