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# **Guidance** **on water and associated energy efficiency** for the Welsh Housing Quality Standard for retrofit programmes





## Joining up water and energy

Affordability is a very real issue in Wales and reducing poverty, particularly persistent poverty, in some of the poorest areas and communities is at the centre of the Welsh Government's policy agenda<sup>1</sup>. In 2011 OFWAT indicated that 30% of households in Wales spend more than 3% of their income on water and sewerage bills and 14% spend more than 5%<sup>2</sup>. It is likely that a significant proportion of these households are also experiencing fuel poverty.

Heating water for showers, baths, taps and water-using appliances costs the average UK household £200 a year on their fuel bills and represents approximately 23% of household energy costs.

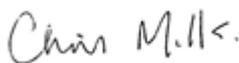
Installing simple water-saving measures, such as water-efficient taps and showers, will save both water and energy by minimising heated water, which could reduce household bills by up to £120 annually<sup>3</sup>.

Social housing accounts for 17% of all properties in Wales. The Welsh Housing Quality Standard is driving a high level of refurbishment activity in social housing across Wales, including kitchen and bathroom replacements, and provides an opportunity to 'piggyback' water efficiency retrofit.

Water efficiency needs to be considered and addressed as core business in energy saving and fuel poverty agendas. It is becoming increasingly important to ensure that water and energy efficiency are considered in tandem so that domestic water efficiency policies complement energy efficiency policies, maximising the home budget benefit.

This guidance is aimed at local authorities and housing associations including estate managers and maintenance teams, outlining the need for water conservation and the benefits. The guidance is designed to help you choose the right products to achieve both water efficiency and energy efficiency and how to deliver these.

We will continue to work with social housing providers to create partnerships and monitor the outcomes of water and energy efficiency delivery through the Welsh Housing Quality Standard.



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<sup>1</sup> Information from Welsh Government Website:

<http://wales.gov.uk/topics/socialjustice/tacklingpoverty/?jessionid=DLzvQthCR9FXPW1pN3Jy3RLVv1sh5KN5PPkk6PRQ8Cd3QVVTPyVq!-259515681?lang=en>

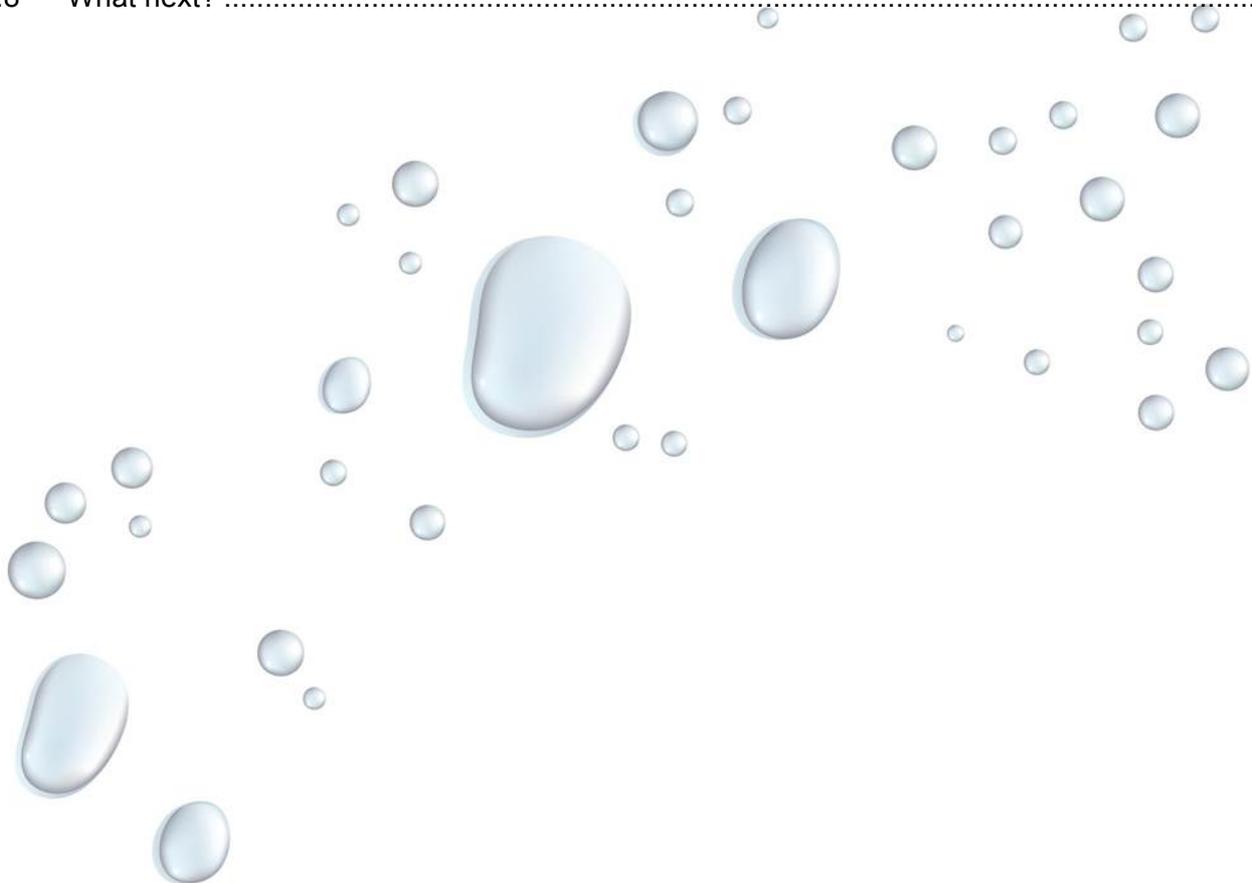
<sup>2</sup> [http://www.ofwat.gov.uk/regulating/charges/res\\_ofw20110704wgwalker.pdf](http://www.ofwat.gov.uk/regulating/charges/res_ofw20110704wgwalker.pdf)

<sup>3</sup> Figure includes savings on metered water usage. Energy savings alone can be up to £25-£46 per household. Higher figures are for homes where hot water is heated by electricity or LPG.



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## 1 Why save water?

### 1.1 “It just makes sense!”

Through retrofitting and refurbishment, social housing providers can help reduce water costs for their tenants. Implementing water-saving initiatives will also preserve Wales’ water resources and reduce greenhouse gas emissions.

Most initiatives to save water are relatively cheap and easy to install which makes them an attractive option to ‘piggyback’ on refurbishment activities. The inclusion of water-efficiency retrofits as part of Welsh Housing Quality Standards (WHQS) improvements and refurbishments or as part of routine maintenance visits is easily achievable.

### 1.2 Water resources

The perception that water is plentiful in Wales is no longer the case and maintaining the balance between supply and demand is an ever-growing challenge.

The new pressures exerted on the water resources in Wales include changes due to climate change, population growth and changing lifestyles. There is a real possibility of insufficient water to meet the full needs of people and the environment in the future. Action to conserve water must be taken now to safeguard the position for the future.

### 1.3 Energy and greenhouse gas emissions

The average person in Wales uses 150 litres of water per day of which around two-thirds is hot water, costing the average household £200 a year to heat. This hot water cost is separate from, and in addition to, hot water used in domestic central heating systems. If we can waste less hot water, we can save water, energy and money and reduce greenhouse gas emissions.

Water-related activities contribute to 6% of the UK’s annual carbon emissions. There are energy and greenhouse emissions associated with water treatment and distribution, but the significant proportion of the energy associated with water consumption is a result of heating hot water in the home as shown in figure 1.

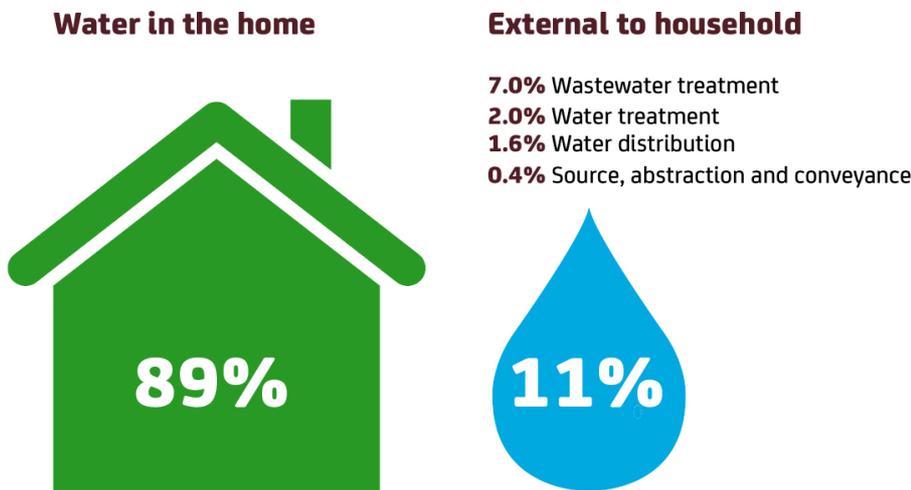
It shows that 89% of the total CO<sub>2</sub> emissions is associated with water use in the home (by heating water), while 11% is associated with the emissions resulting from abstracting, conveying and treating domestic water outside the home<sup>4</sup>.

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<sup>4</sup> Environment Agency (2008a). Greenhouse gas emissions of water supply and demand management options. Science Report SC070010.



Figure 1: Origin of CO<sub>2</sub> emissions associated with domestic water<sup>5</sup>



**Total carbon emissions** of 6.2 tCO<sub>2</sub>e per Ml water for water in the home.  
This equates to 2.2kg of CO<sub>2</sub>e daily per household.

Installing simple water-saving measures, like water-efficient taps and showers, will save both water and energy by the saving of heated water.

## 1.4 Reducing the effects of poverty

Research by the University of York has identified that across England and Wales 63% of those in fuel poverty are also in water poverty and 34% of those in water poverty are also in fuel poverty<sup>6</sup>. Affordability is a very real issue in Wales and reducing poverty, particularly persistent poverty, in some of the poorest areas and communities is at the centre of the Welsh Government's policy agenda<sup>7</sup>.

Social housing accounts for 17% of all properties in Wales. The Welsh Housing Quality Standard is driving a high level of refurbishment activity in social housing across Wales. Between 2012 and 2015, approximately 32% of social housing in Wales will be assessed and refurbished as part of this standard, presenting an opportunity to visit over 70,000 homes and implement cost-effective water and energy efficiency measures. The delivery of water and energy installations during this large-scale refurbishment programme could save up to £120 on household bills annually<sup>8</sup> by specifying water-efficient equipment and installing simple water-saving measures, like water-efficient taps and showers.

<sup>5</sup> Source: Quantifying the energy and carbon effects of water saving. Energy Saving Trust and the Environment Agency, 2009.

<sup>6</sup> Water poverty is when water bills account for more than 3% of household income. Fuel poverty is when a household needs to spend more than 10% of their income to keep their home adequately warm.

<sup>7</sup> Information from Welsh Government Website:

<http://wales.gov.uk/topics/socialjustice/tacklingpoverty/?jessionid=DLzvQthCR9FXPW1pN3Jy3RLvy1sh5KN5PPk6PRQ8Cd3QVVTPVvq!-259515681?lang=en>

<sup>8</sup> Figure includes savings on metered water usage. Energy savings alone can be up to £25-£46 per household. Higher figures are for homes where hot water is heated by other fuels (e.g. electricity or LPG).



Households on water meters will benefit from saving on their energy and water bills. Many households may also be able to save a significant amount of money by taking advantage of special water tariffs designed to protect vulnerable groups or by opting to have a meter installed.

If a scheme is planned to visit and improve a household, then this opportunity must be fully utilised by 'piggybacking' the installation of water efficiency. It is important to deliver both energy-efficient and water-efficient products simultaneously to maximise cost benefit of the refurbishment scheme and to maximise the financial benefit to the consumer. It is likely that the properties will only be visited once, and so it is important to ensure that all the products that can be fitted are fitted during that visit.

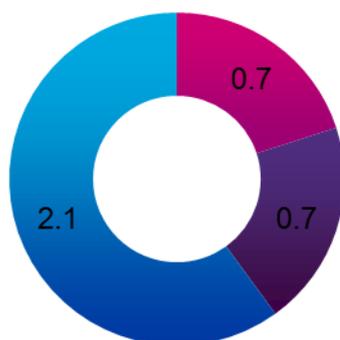
### 1.5 How much could we save?

If every social housing property in Wales had water-efficient taps, a toilet, and a shower retrofitted then combined energy bills could be reduced by a staggering £3.5 million a year. These savings can be achieved by using simple retrofit devices that can be installed quickly and easily without the need for completely new fittings.

This annual saving would increase again with simple water-efficiency behaviour changes in our household routines. None of the recommended water devices included in this guidance should reduce quality of life for a resident.

Figure 2 shows the potential fuel bill savings from water efficiency in social housing in Wales (£m/yr). These improvements could reduce greenhouse gas emissions by 22,000 tonnes CO<sub>2</sub>e/yr<sup>9</sup>.

Figure 2: Potential fuel bill savings from water efficiency in social housing in Wales (£m/yr)



■ Retrofit shower head ■ Install mixer shower ■ Fit tap aerators

<sup>9</sup> EST, 2012



## 1.6 How cost effective is water efficiency?

Water-efficient fixtures and fittings have traditionally been more expensive than standard equivalents. This has resulted from the challenge of obtaining the same or similar performance from equipment while using less water, as well as the small size of the market being less competitive than that of traditional fittings.

However, the price of water-efficient fixtures and fittings has decreased while performance relative to standard has improved. Combined with the increasing cost of water and energy, payback times for investment in efficient fixtures and fittings are shortening and water-efficiency measures are now as cost effective as traditional measures. To choose water-efficient products over non-water-efficient products will not necessarily cost more, and the benefits will be vast.

A retrofit shower head is assumed to cost £18 and save £35 a year on fuel bills every year for 15 years. If a household is on a water meter they will also save money on their water bills (only around 30% of homes in Wales have a water meter).





## 2 What can social housing providers do?

Social housing providers can help to save water, and therefore help their tenants save energy and money, in three key ways:

- procuring water-efficient devices for kitchen and bathroom refurbishment
- retrofitting water efficiency kit at key 'trigger points'
- providing advice on saving water when refurbishing or retrofitting.

### 2.1 Standards for water-efficient devices

Setting specific ranges of water use for each water-using product or device provides a very clear and simple method for procuring and installing water-efficient devices into homes. This still enables a degree of flexibility and choice for device procurement, whilst delivering the key objective to reduce water consumption without reducing quality of experience and performance.

The standards listed in Table 1 have been taken from guidance devised by WRAP<sup>10</sup> to help their clients and developers choose products for water-efficient buildings.

These standards should be used to enable social housing providers to choose which water-efficient products to retrofit for inclusion in the refurbishment works for the Welsh Housing Quality Standard.

There are three levels of efficiency referred to in the table below are defined as:

- **normal practice** – “fittings and appliances that meet basic requirements but do not offer appreciable water savings compared with others on the market”;
- **good practice** – “fittings and appliances offering reduced water consumption *compared with normal* practice products, without materially impacting cost or performance for most types of use”;
- **excellent practice** – “fittings and appliances offering reduced water consumption *compared with good* practice products, without materially impacting cost or performance for most types of use”.

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<sup>10</sup> <http://www.wrap.org.uk/>



Table 1: Indicative practice levels for water efficiency of common fittings and appliances<sup>11</sup>

Fitting / appliance	NORMAL practice	GOOD practice	EXCELLENT practice
Shower (mixer shower)	8-10 l/min	6-8 l/min	6 l/min
	An aeration device or advanced spray pattern may increase user satisfaction at a given flow rate, whilst reduce water use.	As per AECB Water Fittings Standard	As per AECB Water Fittings Standard
Shower (electric)	6-8 l/min	6 l/min	6 l/min
WC	6 l/flush	4.5 l/flush (effective flush)	3.5 l/flush (effective flush)
	6 l single flush is appropriate for male public WCs	Either 6/4 l dual flush or 4.5 l single flush. A low volume single flush may be more appropriate in public buildings.	e.g. 4.5/2.6 l dual flush A low volume single flush may be more appropriate for systems requiring higher flow or in public buildings.
Urinal	1.5 l/bowl/use 7.5 l/bowl/hour during building occupancy period 0 l/hour otherwise with minimal water use in maintenance	3 l/bowl/hour maximum during building occupancy with user-presence activated flush 0 l/hour outside of occupancy and activation period, with minimal water use in maintenance	0 l/hour with minimal water use in maintenance
		Flush within the hour if one person activates the sensor	May be inappropriate for high frequency of use (e.g. schools, sports venues)
Tap (basin)	Up to 6-8 l/min	4-6 l/min	2-4 l/min
		Two-stage taps may help to reduce the effective flow rate	Sensor-actuated taps help to reduce consumption in public buildings
Tap (kitchen)	10-12 l/min	6-8 l/min	<6 l/min
		A higher flow rate is typically required for kitchen use than for basins, since kitchen demand is related more to volume than duration of flow	User acceptability would need to be considered Two-stage or Click taps may help to reduce the effective flow rate and improve behaviours
Bath	<180 l capacity excluding body mass within the bath	<180 l capacity excluding body mass within the bath	<180 l capacity excluding body mass within the bath
	As per AECB Water Fittings Standard	As per AECB Water Fittings Standard	As per AECB Water Fittings Standard. User acceptability would need to be considered;
Washing machine	10 l/kg dry load	8.5 l/kg dry load	7 l/kg dry load
Dishwasher	1.2 l/place setting	1.0 l/place setting	0.7 l/place setting
	Older domestic models may use 20 l/cycle	Equivalent to 12 l/cycle in a domestic dishwasher	

To use this table:

1. choose which standard of water efficiency to achieve (normal, good or excellent)
2. choose products which deliver water within the specified volume for that standard
3. procure fixtures and fittings for these standards

<sup>11</sup> Adapted table, original published by WRAP: <http://www.wrap.org.uk/content/asking-water-efficient-buildings-through-good-procurement-practice>



The values in the table identify what is *technically* possible. The actual flow rate delivered may be affected by water pressure, and can be adjusted using a flow or pressure regulator.

It is important to consider the effectiveness of the device installed in terms of the end user. It is vital that the term ‘water efficient’ does not become synonymous with ‘poor performance’. For example, a shower providing less than 6 l/minute may be more efficient than a 10 l/minute model but in reality, the performance of a shower delivering less than 6 l/minute would be unacceptable<sup>12</sup>.

It is also important to consider the interactions between water use and energy use. There may be a caveat regarding savings onto energy bills due to the ‘fuel factor’, or how water is heated in the home. Mains gas is cheaper to heat water than electricity, and so the installation of an electric shower may have implications on household bills.

However, the installation of showers gives householders the choice and through this choice they are enabled to save water. A recent retrofit scheme in London found that 80% of properties did not have showers<sup>13</sup> (‘Tap into Savings’ (provided on page 14). In Wales, approximately 44% of local authority and housing association homes had no provision of showers<sup>14</sup>. The installation of showers into social homes has an additional social benefit.

Water-efficient product labelling schemes further simplify the task of procurement. The Bathroom Manufacturers Association has a labelling scheme, similar to energy labelling. A procurement or refurbishment contract can be used to require certain levels of performance, as per these labels shown in figure 3.

Figure 3: Water Efficiency Rating labels



<sup>12</sup> Market Transformation Programme (MTP) <http://efficient-products.defra.gov.uk>

<sup>13</sup> Tap into Savings <http://www.tapintosavings.org/>

<sup>14</sup> National Statistics publication: Living in Wales report, 2008 <http://wales.gov.uk/docs/statistics/2009/091130sdr2032009en.pdf>



## 2.2 Key trigger points for water-efficiency improvements

Many of the bathrooms and kitchens in Wales' social housing stock have already been upgraded as part of Welsh Housing Quality Standard improvements (although not necessarily to water-efficient standards) and will not require improvements in the near future.

Social housing providers can put in place processes linked to other routine or planned maintenance, or changes in tenancy, to ensure that showers, taps and toilets are retrofitted with water-efficiency devices wherever possible.

With 22,000 new lettings each year this presents an opportunity to provide simple water-efficiency retrofit devices, to include:

- checking and recording the type of taps, shower, toilet and so on installed
- installing retrofit devices where improvements can be made with ease
- the provision of water butts to enable residents to use rainwater for any external water use.

Water-efficiency measures can be installed by local, day-to-day contractors. A pilot project with Wales & West Housing found there was little extra training required for installing or retrofitting water-efficient devices.

Figure 3 shows a suggested proforma to capture this type of activity and when the opportunity may be present to retrofit piggybacking on other activities.

Figure 3: Trigger points to improve water usage efficiency<sup>15</sup>

Measures to consider	Opportunity														
	Moving in or out	Extending	Loft conversion	Adding a conservatory	New kitchen	New bathroom	Re-roofing	Re-plastering	Replacing windows	Re-wiring	Re-flooring	New heating	Replacement boiler	Replacement hot water cylinder	Re-rendering
Wall insulation			Good	Good			Good		Good						
Roof Insulation				Good	Good					Good					
Floor insulation						Good									
Heating controls								Good		Good					
Cylinder/pipe insulation				Good						Good					
Airtightness improvements															Good
Efficient ventilation															
Windows							Good								
Low energy lighting										Good		Good	Good	Good	
Energy efficient appliances						Good				Good					

Key  
Good opportunity ■ Possible opportunity ■



## 2.3 Stock data

Social housing providers should include information about water efficiency in their stock data. This will allow asset managers and technical staff to quickly and easily assess the need for improvements as part of routine or planned maintenance procedures, or as part of void processes. This data can be built up over time as a result of information collected during these processes and on improvements made as part of the WHQS. It can also help to demonstrate just how much water, energy and money could be saved by making improvements.

Stock data records should include the following information if possible:

Table 2: Suggested pro-forma for stock data records

Item	Specification
Toilet type	Standard; Standard with cistern displacement; Low Flush; Dual Flush
Bath present?	Yes; No
Electric shower?	Yes; No
Mixer shower?	Yes; No
Mixer shower flow rate	l/min
Bathroom taps flow rate	l/min
Kitchen taps flow rate	l/min
Water butt (where dwelling has drive and/or garden)	Yes; No
Equipment	E.g. washing machine, dishwasher

## 2.4 Consumer acceptance of water-efficient devices

As the design and performance of water-efficient products has improved, they now have the same level of experience and look as good as inefficient options. Customer surveys of a United Utilities scheme installing water-efficient showerheads showed that customers found using an efficient showerhead preferable to the previous installation<sup>16</sup>.

It is imperative that any installed device must, at the very least, operate as well as (and ideally better than) the previous device. Any product which adversely affects the household water-using experience will be looked on negatively, affecting the uptake of subsequent water-efficient products in the future.

<sup>16</sup> [http://www.waterwise.org.uk/data/resources/30/water-efficiency-retrofitting-best-practice\\_final.pdf](http://www.waterwise.org.uk/data/resources/30/water-efficiency-retrofitting-best-practice_final.pdf)



## Case study: Tap into savings



The Tap into Savings programme is an innovative community project to help residents in social housing save water, energy and money.

During 2010 and 2011, projects were delivered in Merstham and Redhill (Surrey), Coventry (West Midlands) and the Braintree District (Essex).

These activities have helped thousands of residents make changes in behaviour to make big savings in water, energy and money. Over 4,500 home visits were carried out

during which free water- and energy-efficient devices were fitted and advice provided.

Achievements by May 2012 included:

- water-saving equipment installed in 3,300 homes, each receiving further advice
- articles about installations and EcoTeams in resident magazines, websites and blog (2,100 hits)
- energy and water-saving training for 258 staff and residents
- 150 residents attended EcoTeams meetings
- 699 residents attended showcase activities or other events
- eight residents recruited as Eco Champions for future projects.

The programme delivered average water savings (based on devices installed) of 40 litres per day per home visited. Overall the programme saved more than 57 mega litres of water per year and reduced emissions of climate changing gases by more than 185 tonnes of CO<sub>2</sub>e annually.

The project has helped householders reduce their water use by 15% and save up to £50 on their utility bills. It was the first water-efficiency programme to build in energy efficiency and recycling, and to place an equal emphasis on installing efficient devices and influencing pro-environmental attitudes and behaviours.

Nearly 50% of residents who had home visits went on to talk to their friends and family about saving water and energy. Saving money, helping the environment and simple curiosity were given as reasons for signing up, with residents generally agreeing that it was an easy action: "If you can do your bit without it being difficult then I don't see why you don't do it. We've got recycling bins, easy – chuck your rubbish in there instead of in the other bin – and it was the same with water."

A water company's water-efficiency retrofit programme identified how to increase the uptake of devices and to increase the acceptance of water efficient devices<sup>17</sup>. The importance of providing a range of products and offering the householders a choice greatly improved the acceptance of

<sup>17</sup> Essex and Suffolk Water - 2012



such products. For example, to provide both a white and a chrome shower head will increase uptake, as shown in Figure 4.

Offering a choice will also help to engage the householders as they will feel that they have been involved in the decision-making process and not had one product imposed upon them. The provision of a range of products may marginally increase the overall costs, but the benefits will ensure that payback is achieved quickly.

Figure 5 Showing the same product but in different colours



Similarly, there is a potential issue regarding tap inserts which should be identified. During a retrofit programme, a number of housing providers and water and energy companies have reported dissatisfaction with tap inserts<sup>18</sup>. The problems encountered during this scheme can be rectified by ensuring that the fitter has a full range of devices and having fully tested the flow rate to confirm the suitability of the product for that tap. Taps are very varied and so to maximise uptake it will be necessary to provide a range of products as shown figure 6.

Figure 6: Typical variation on tap inserts required for a retrofit programme



<sup>18</sup> Information from Waterwise following the Green Deal Guidance Report



## 2.5 Advice and behaviour change

Whilst it is possible to specify fittings volumes and flow rates, the way in which the devices are used is much less certain and will affect the potential water and energy saving. The impact of refurbishment or retrofit can be maximised by providing literature and guidance on how to use the devices correctly and to communicate the need to reduce water wastage.

The provision of advice enabling households to maximise their potential benefit is an integral part of a retrofit and refurbishment programme.

Energy Saving Trust's Water Energy Calculator can be used to assess current and potential household water use, and how this links to energy use. The Water Energy Calculator can be accessed here: <http://www.energysavingtrust.org.uk/Water-Energy-Calculator>

Advice can be offered as standard by on-the-ground staff following retrofit or refurbishment. Alternatively, householders could be offered a follow-up visit by specialist advisors to help them make the most of the improvements that have been made to their home.

Figure 7: Image from the Energy Saving Trust Water Energy Calculator





## Case study: Housing association water and energy pilot

Energy Saving Trust Wales and Environment Agency Wales worked with DwrCymru Welsh Water, Valleys to Coast Housing and Wales & West Housing to trial the provision of advice and water-efficient devices to tenants. Over 100 tenants received advice on water use and its links with energy use as part of the project.

- A total of 180 housing association tenants with a water meter in South Wales received advice and/or retrofit on water efficiency and how it links to energy use as part of this pilot project
- Householder-reported actions and retrofit kit installed are estimated to be able to save over 1,700 m<sup>3</sup> water per year (31 litres/property/day on average)
- These water savings could save householders nearly £7,000 in total on their water and energy bills (£39 per household, a year on average)

Some of the key lessons from the project include:

- Delivering advice at the same time as other interventions could help to reduce costs (e.g. an installer or tenant liaison officer who already needs to call at the home could provide advice). Alternatively, households that are likely to be receptive to advice could be filtered out during the delivery of other interventions, and then receive a stand-alone visit. The time already spent in the home or on the phone could influence the choice of approach, although, if visits / calls are already long then a separate visit is probably better than extending an already lengthy process.
- The number of retrofit measures installed as part of this project was relatively small because their installation was linked to the completion of existing planned retrofit activity improving cost-effectiveness. The rate of installation of measures could be increased by including change of occupancy or planned or reactive maintenance visits as a further trigger point.
- Social housing providers' procurement processes should be updated to ensure all water-using devices procured are specified as water efficient, therefore saving water and energy.

## 2.6 Costs

When purchased new, many water-efficient bathroom and toilet fittings do not cost more than standard alternatives. Therefore every social housing provider should ensure that any new procurement contracts or specifications include water-efficient products.

Devices to retrofit to showers and taps are relatively inexpensive and they pay for themselves (in terms of energy savings) very quickly. Typical costs and savings are outlined in Table 3.

Where water and energy efficiency are delivered in partnership, the costs can be shared. In some cases the incumbent water company may provide water-saving products and an energy provider may offer energy-saving products. The cost of installation may be incurred by the local authority. Delivery of a refurbishment programme in partnership will maximise the overall cost effectiveness.



Table 3: Indicative costs for water efficiency equipment

Device	Typical cost	Typical annual saving on energy bills (metered customers will also benefit from water bill savings)
WC dual-flush adapter	£20	£0
Shower aerator	£15	£35
Replacement taps	£25	£10

Depending on the quality and the range offered, a full package of water-efficient taps, toilet and shower products could be provided for between £10 and £50.

## 2.7 Funding

Evidence shows that the delivery of a water-efficiency retrofit programme is best achieved by a concerted action in partnership with various stakeholders. Engaging the local community and working with the local authority, water companies, local organisations, the Environment Agency and Energy Saving Trust will increase the success of a retrofit scheme. Cost effectiveness is increased if a scheme is delivered as a partnership as the costs are shared and the implementation optimised.

There is no overarching funding mechanism to help deliver and finance water-efficiency initiatives, unlike heat and energy. It may be possible to leverage funding from other schemes and programmes. Some housing associations in Wales have obtained funds or have optimised costs by 'piggy-backing' on existing schemes that are complementary.

Securing funding is a key issue that will determine the level and type of action undertaken. Funding needs to offer strong incentives and clear objectives. Maximising funding through working in partnership is likely to have the largest impact.

Opportunities for funding mechanisms in Wales include:

### Water company activities

Water companies have a statutory obligation to promote water efficiency to their customers. In addition to this there are mandatory water-efficiency targets set by Ofwat.

### Joint funding with energy efficiency

There is a high level of compatibility between water efficiency and energy efficiency for inclusion in a retrofit programme. Carbon reduction commitments and the Government's climate change mitigation strategies have increased in profile and the delivery of energy efficiency is the key mechanism to achieve these goals. Many energy efficiency initiatives exist (e.g. warm front grants, interest-free loans from the Carbon Trust (until December 2012), Green Deal) and the leveraging of funds to deliver water efficiency simultaneously may be possible.

### Refurbishment schemes

Many local authorities are undertaking refurbishments of their social housing to achieve better standards (WHQS). Welsh programmes such as Nest and Arbed are also delivering water-efficiency activity as part of their refurbishment works.



## 2.8 What next?

Training sessions can be conducted for your staff to help them implement the advice in this guidance. To find out more, contact the Energy Saving Trust on 02920 475 940 or email [knowledge@est.org.uk](mailto:knowledge@est.org.uk)

More information on carrying out energy efficiency measures during refurbishment works is also available here: <http://www.energysavingtrust.org.uk/wales/Organisations/Local-delivery/Free-resources-for-local-authorities/Reducing-emissions-from-social-housing-guide>





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