

Waterwise White Paper

Water used wisely, every day, everywhere

June 2010

Mainstreaming water efficiency in the UK: helping to meet the challenges of climate change through wasting less water



Waterwise is a UK NGO focused on driving water efficiency. It is the leading UK authority on water efficiency. Waterwise is developing the Evidence Base for Large Scale Water Efficiency in Homes. Waterwise sat on the Water Minister's Water Saving Group for England and set up the Saving Water in Scotland Network. Waterwise informs and influences policy development, develops quality research, drives coordinated water efficiency campaigns and leads water and energy efficiency retrofitting partnerships, across the UK.

Introduction

This White Paper has mainstreaming water efficiency at its core. In it Waterwise sets out strategic proposals for climate change adaptation and mitigation, resource efficiency, the green economy and the big society, over the five years from 2010 to 2015. This includes some particularly important steps by 2012, to ensure maximum multiple benefits from these measures through linking them to the next regulatory price reviews for water across the UK. The White Paper covers the whole of the UK – it calls for measures and clear leadership which can specifically be delivered by the UK government.¹

The White Paper recommends:

- a more efficient, sustainable and flexible regulatory framework for water
- links between the regulatory frameworks for water, energy and housing
- using water efficiency to develop the low carbon economy
- a set of incentives to encourage people and businesses to waste less water across the UK economy and improve the affordability of water
- the delivery of water efficiency through local partnerships as part of the big society

Waterwise is already developing the *Evidence Base*² for the cost-effectiveness of water efficiency, and best practice guidance on implementation. Waterwise has also shown in practice the benefits of the partnership approach. Water efficiency has no downside, and is an economic, social and environmental opportunity. Its potential stretches well beyond issues of scarcity. Delivering this full potential will require new ways of working across the public and private sectors.

Waterwise's specific proposals can be found on pages 17 to 22

The White Paper builds on the 2009-2010 *Waterwise UK Manifesto*³, responses to the autumn 2009 *Waterwise Stakeholder Consultation on Scaling Water Efficiency Up*⁴, and 2010's *Walker Review on Charging for Household Water and Sewerage*⁵ and *Cave Review on Competition and Innovation in Water Markets*⁶, both of which Waterwise made a significant contribution to. It also builds on the NGO coalition's *Blueprint for Water by 2015*⁷ in which Waterwise plays a key role and which is currently being updated for the Coalition Government and the new Parliament.

¹ It will be developed for each of Wales, Scotland and Northern Ireland in the context of 2011 elections.

² http://www.waterwise.org.uk/images/site/Policy/evidence_base/evidence%20base%20for%20large-scale%20water%20efficiency%20in%20homes%20-%20phase%20ii%20interim%20report.pdf

³ http://www.waterwise.org.uk/reducing_water_wastage_in_the_uk/policy/uk_manifesto.html

⁴ http://www.waterwise.org.uk/images/site/Consultation/consultation%20document%20on%20water%20efficiency%20final%20_%20design_910.pdf

⁵ <http://www.defra.gov.uk/environment/quality/water/industry/walkerreview/documents/final-report.pdf>

⁶ <http://www.defra.gov.uk/environment/quality/water/industry/cavereview/documents/cavereview-finalreport.pdf>









⁷ <http://www.wcl.org.uk/blueprintforwater.asp>

Vision

The vision set out in this White Paper is of a UK in which all homes and businesses are water-efficient and energy-efficient; smart regulatory and legislative frameworks for the water, energy and housing sectors complement each other to ensure that wasting less water is in the interest of every link in the chain; water efficiency plays a full role in the low carbon and green economy, through manufacturing and services; the full value of water for health and life, the economy and the environment is reflected in how we all use it, from source to tap and back again; and the third sector and communities are helping to deliver this as part of the big society.

The White Paper will help deliver the Coalition Government’s *Programme for Government*⁸, and the Secretary of State for Defra’s commitment to “an integrated strategy across Government, and across the public, private and third sectors, to tackle the loss of biodiversity, address the way that we use resources, adapt to climate change and grow a greener economy that provides the clean, green jobs and industries of the future” and to be the greenest government ever.⁹

The following Coalition Government priorities and commitments are referenced in the proposals set out in this White Paper, using the characters marked alongside. The multitude of characters alongside White Paper proposals illustrates the multiple benefits of mainstreaming water efficiency:

	Examine the conclusions of the Cave and Walker Reviews, and reform the water industry to ensure more efficient use of water and the protection of poorer households ¹⁰		A Big Society matched by big citizens, offering the potential to completely recast the relationship between people and the state: citizens empowered; individual opportunity extended; communities coming together to make lives better ¹¹
	Use a wide range of levers to cut carbon emissions , decarbonise the economy and support the creation of new green jobs and technologies. Implement a full programme of measures to fulfil our joint ambitions for a low carbon and eco-friendly economy ¹²		Immediate action to tackle the deficit in a fair and responsible way, ensure that taxpayers’ money is spent responsibly, and get the public finances back on track ¹³
	Encourage home energy efficiency improvements paid for by savings from energy bills, through the “Green Deal”, take measures to improve energy efficiency in businesses and public sector buildings ¹⁴ and increase households’ control over their energy costs ¹⁵		An integrated strategy across Government, and across the public, private and third sectors, to address the way that we use resources, adapt to climate change and grow a greener economy that provides the clean, green jobs and industries of the future ¹⁶
	Protect the environment for future generations , make our economy more environmentally sustainable, and improve our quality of life and well-being ¹⁷		Be the greenest government in the country’s history ¹⁸

⁸http://www.direct.gov.uk/prod_consum_dg/groups/dg_digitalassets/@dg/@en/documents/digitalasset/dg_187876.pdf

⁹ Rt Hon Caroline Spelman MP, Secretary of State for Environment, Food and Rural affairs, Queen’s Speech Debate 27th May 2010 <http://ww2.defra.gov.uk/2010/05/28/581/>.

¹⁰ Coalition Programme for Government page 17 (<http://programmeforgovernment.hmg.gov.uk>)

¹¹ Coalition Programme for Government page 8

¹² Coalition Programme for Government page 16

¹³ Coalition Programme for Government page 15

¹⁴ Coalition Programme for Government page 16

¹⁵ Coalition Programme for Government page 13

¹⁶ Rt Hon Caroline Spelman MP, Secretary of State for Environment, Food and Rural affairs, Queen’s Speech Debate 27th May 2010 <http://ww2.defra.gov.uk/2010/05/28/581/>

¹⁷ Coal Gov Prog page 17

¹⁸ Rt Hon Caroline Spelman MP, Secretary of State for Environment, Food and Rural affairs, Queen’s Speech Debate 27th May 2010 <http://ww2.defra.gov.uk/2010/05/28/581/>

The political case for water efficiency: why is water efficiency important in a changing climate? How does it fit into the low carbon and green economy and the big society?

In a nutshell

Water efficiency – wasting less water – is an essential part both of adapting to climate change and building resilience into our systems, and tackling climate change. Water efficiency is an economic, social and environmental opportunity – it has an important role to play in the green economy, the big society and safeguarding the environment. It can also help reduce the deficit.

Adapting and building resilience

Water efficiency is vital in adapting to the climate change we are already seeing and cannot avoid, despite action now – underpinning the statutory National Adaptation Programme for England. Both hot and cold water efficiency measures are important even once the electricity grid is fully decarbonised, because there can be no such thing as a zero water house, and because gas, on which there is a huge reliance for water heating, cannot be fully decarbonised.

In the last few years the UK has seen widespread floods and devastating drought, and both of these have led to water supply challenges in homes. The UK Climate Impact Projections published in 2009¹⁹ show greater unpredictability in rainfall and longer, drier summers in coming decades. Some areas of England are already classified by the Environment Agency as seriously water-stressed. Even Scotland and Wales have experienced pockets of drought or water stress in recent years²⁰. And it is known that in coming decades there will be more people and less water in the UK, so less water will need to go further. There is already an increase in single-person households, which use more water per person, and water companies are predicting increases in outdoor watering and personal washing. Population growth will be larger in already water-stressed areas like South East England.

So homes, buildings and people will need to be water-efficient: and not just new homes, but existing homes, because two thirds of the UK's 2050 homes have already been built²¹. Water efficiency should play a central role in any organisation's climate change adaptation strategy – alongside flood risk management – because every section of the economy is dependent on water. Drought risk management for homes and communities is essential alongside flood risk management. These measures will build resilience to climate change impacts.

Tackling climate change

Wasting less water in homes and businesses can help meet the UK's legally binding goals of a reduction in greenhouse gas emissions of 34% by 2020 and 80% by 2050. Heating water in homes for cooking, personal washing and cleaning produces 5% of the UK's greenhouse gas emissions and a quarter of CO₂ emissions from homes²³ – it is the second biggest use of energy in homes, after space heating, and before gadgets and appliances. So wasting less hot water in homes – through more efficient fixtures and fittings and more efficient use of hot water from taps and showers by people – can immediately impact on carbon targets. Wasting less hot and cold water

A daily 15-minute shower offers the chance – through a shorter shower with a more water-efficient showerhead – to save half a tonne of water a year: equivalent to a return flight from London to Madrid²².

¹⁹ http://www.ukcip.org.uk/index.php?option=com_content&task=view&id=163

²⁰ see page 10 – The environmental case

²¹ <http://www.sd-commission.org.uk/publications/downloads/Sustainable%20Buildings%20R3.pdf>

²² http://www.theecologist.org/reviews/books/504486/whats_the_carbon_footprint_of_a_text_message_having_a_child_the_world_cup.html

²³ <http://www.environment-agency.gov.uk/business/topics/water/109835.aspx>

will reduce the carbon footprint of the water industry, which would as a result need to pump and treat less water and wastewater (in turn making the sector more resilient to climate change). The water industry produces 1%²⁴ of total UK greenhouse gas emissions, with Scottish Water Scotland's largest user of electricity²⁵. Wasting less hot and cold water will tie in with the Coalition Government's commitment²⁶ to use a wide range of levers to cut carbon emissions, decarbonise the economy and support the creation of new green jobs and technologies.

Opportunity

So it is clear that water efficiency needs to play a principal role in the climate change show. But this does not require a hairshirt agenda, nor one of prohibition. **Water efficiency is an opportunity – economic, environmental and social.** Wasting less water in the end comes down to kit and behaviour – taps, toilets, showers, dishwashers, washing machines and industrial equipment which consume less water, and people who reflect the value of water in how they use it. The opportunities lie in the framework to drive this. Developed strategically, such a framework will mean that homes and businesses save money, new products and services are developed within the low carbon and green economy, long-term planning ensures we don't abstract too much water from the environment, and new community partnerships for delivery are developed. **Water efficiency therefore offers a significant political opportunity to deliver wider priorities.** It also offers specific political opportunities, for example in securing value for money for UK taxpayers from EU funds.

The EIB's water sector lending policy²⁷ explicitly refers to water efficiency as a key element for financing projects – the EIB will support “hard” (retrofitting) and “soft” (behaviour change) water efficiency measures undertaken by water service providers and will grant loans to support water efficiency in buildings. EIB funding could be used to fund a water element of the Green Deal for homes or for programmes to increase the energy efficiency of buildings. There are also EU regional funding programmes which explicitly or indirectly include water but which are currently being used in the UK for energy efficiency projects alone.

²⁴ <http://publications.environment-agency.gov.uk/pdf/GEHO0508BOBS-E-E.pdf>

²⁵ <http://utilityweek.co.uk/features/interviews/scot-waters-richard-ackroyd-wa.php>

²⁶ http://www.direct.gov.uk/prod_consum_dg/groups/dg_digitalassets/@dg/@en/documents/digitalasset/dg_187876.pdf

²⁷ http://www.eib.org/attachments/strategies/water_sector_lending_policy_2008_en.pdf

The economic case for water efficiency

In a nutshell

Water efficiency has an important role to play in reflecting the full, long-term value of water in the UK economy. It can reduce the deficit – cutting costs across the public and private sector and developing the low carbon and green economy through manufacturing and services. It can reduce household energy and water bills and help affordability.

Reflecting the cost and value of water to UK plc

Every sector of the UK economy is dependent on water. In a 2005 report, the National Audit Office pointed out that “Many [of these] industries would not be possible without the use of water. To replace a supply of one million litres of water a day would typically cost about £2 million. The Agency’s regulation of abstraction, therefore, protects resources worth some £72 billion to licence holders. Clearly, water use is of such importance that its value to the economy as a whole is incalculable.”²⁸ The *Cave Review* also points out that, although the cost of the abstraction licensing regime is relatively low (around £124 million in 2007), the value of water in the economy is significantly greater. And, as both the *Cave* and *Walker Reviews* clearly identified, the full long-term value of water is not reflected in the current regulatory framework in England and Wales - and tightening up of the abstraction framework may be necessary. Most stakeholders agree.

Cave Review p8 “While such a [current] framework supplies water at low administrative cost it fails to ensure that water goes to those who value it most (including the environment) or that it is used efficiently.”

Walker Review p47 “Given the pressures of climate change and population growth, the value of water in future will be higher than it is today. Yet this future scarcity and its likely impact is not fully reflected in the current assessment of costs and benefits. This requires urgent action. The environmental and social benefits and costs of taking more water from the environment need to be factored into the water industry’s management and investment decisions. Valuing water properly will help to deliver more efficient decisions on investment. Crucially, the legacy of decisions made in the next decade will play a material role in shaping the environment left for future generations.”

In addition to its value not being reflected, there are resource constraints surrounding water. In some areas of the UK water is already scarce – and even beyond areas of water-stress there is a great deal of over-abstraction²⁹. As it becomes more challenging for water companies to balance supply and demand, the water they do supply will become more expensive to source – and more carbon-intensive.

It therefore makes sense to incentivise the water industry to deliver water efficiency services to **their consumers, both domestic and non-domestic. This would save business and the wider economy money.** Saving one million litres of water a day through water efficiency would cost as little as £1.6 million³⁰ – less than the cost of new supply mentioned above. Abstraction reform could also increase catchment management approaches, which have been shown to be less cost-intensive and less carbon-intensive than traditional engineering methods.

Deficit reduction

Water efficiency can play an important role in the Coalition Government’s deficit reduction this year and beyond – it can actively reduce running and procurement costs for central government and public sector bodies, on both water and energy, freeing up costs for frontline spending for example in the National Health Service and the Ministry of Defence. Simple measures can cut running costs by up to 20%, and water efficient procurement does not increase capital costs.

²⁸ http://www.nao.org.uk/publications/0506/efficiency_in_water_resource_m.aspx

²⁹ see page 10 - The environmental case

³⁰ Waterwise’s Evidence Base

Water efficiency can also help central government meet its 10% carbon reduction target within 12 months – reducing wasted hot water in showers, taps, dishwashers and washing machines.

Cutting costs across the economy

Most UK businesses, schools, hospitals and other public sector buildings are metered for water. This means that **if they waste less water** – through “domestic” processes such as taps, toilets, urinals and showers, and dishwashers and washing machines, as well as in industrial processes such as cleaning and cooling, **they will see immediate reductions in their water bills.** For example, many workplaces still have urinals which flush constantly, but there are now UK-manufactured products which flush only when a sensor is triggered, or less frequently, or not at all. **Wasting less hot water in workplaces would also cut energy bills.**

The top 40 water-consuming hospitals in England consume about 20 megalitres a day which is equivalent to the water used by about 50,000 homes. Water savings of 15 – 25 percent could be achieved through retrofitting water-efficient equipment and working with staff and patients to change behaviour³¹. These savings could supply enough water for 12,500 families in areas such as the South East and East of England which are under pressure from increasing population and climate change³².

Low carbon economy

The UK produces a wide range of water-efficient equipment for domestic and non-domestic use – these products are innovative and increasingly “aspirational”, with the white plastic water-efficient showerhead now largely a thing of the past, replaced by large chrome showerheads which are still efficient. **Targeted investment and support as part of the green economy**, linked with public sector procurement standards, **could develop this manufacturing sector** through a mass market approach. This could mirror the development of mobile phones which began as an expensive “niche” product but are now cheaper and mainstream. Product standards for homes and businesses, and partnerships with retailers, manufacturers and the third sector would make products which waste less water cheaper for consumers. Including water in energy retrofitting programmes³³ would **increase the number of green services jobs.** The Coalition Government’s Green Deal will retrofit homes for energy efficiency at a cost of up to £6,500 – a water retrofit of taps, toilets and showers could be included for £40, and for metered homes would payback within two years³⁴.

Cutting household bills

Households will save money through wasting less water. Waterwise research³⁵ shows that the average UK household could save up to £100 a year on their energy bills from wasting less hot water in baths, showers and taps – £76 a year just by replacing a daily bath with a three-minute shower. This will help deliver the Coalition Government’s commitment to increase households’ control over their energy costs. A third of homes in England and a quarter in Wales are already metered for water, and half will be by 2015 – through wasting less water those homes will also see an immediate reduction in their water bills.

³¹ Thames Water, water efficiency in Hospitals study – August 2006

³² Waterwise estimate

³³ See page 13 - Homes

³⁴ Waterwise estimate

³⁵ Waterwise estimate

The social case for water efficiency

In a nutshell

Water efficiency can reduce household energy bills, make homes more comfortable, make water bills affordable for vulnerable households, increase sustainable consumer behaviour and develop the big society.

More comfortable homes

Waterwise research³⁶ revealed that 80% of social housing has baths but not showers – this is in part because much of the stock was constructed before showers were considered a standard fitting, and in part because social housing standards such as Decent Homes do not require installation of showers as part of refurbishment. Waterwise fitted showers and other water-saving devices in a social housing partnership project of 200 homes³⁷, through a home visit, and there was a clear social benefit – residents were delighted with their improved lifestyle at no extra cost – as well as 25% water savings with no financial incentive. The same research shows that, in terms of the water-saving opportunities in homes subject to the Decent Homes standard, the installation of showers would be of greatest value in terms of saving water, energy, carbon dioxide, and utility charges to the property. **Quality of life and homes would be improved for social housing residents, and costs cut.**

Helping vulnerable households with bills

Water efficiency, combined with metering, gives people greater control over their water bills. As the *Walker Review* sets out, affordability of water varies hugely between regions (from 6 to 72% on a definition of 3% of disposable income being spent on water bills) and the current system of rateable value support for low-income families is very poorly targeted. There is justified concern about potential bill increases for vulnerable groups under full metering, but this can be addressed through tariffs and payment systems. In fact there is an impact on affordability characterising the current system: as England and Wales move piecemeal towards greater metering, through a combination of optants and, in some areas, compulsory metering, the cross-subsidies by non-metered vulnerable consumers of metered consumers are being reinforced. A survey of social housing residents³⁸, carried out as part of the Waterwise-led *Tap into Savings* South East project, showed that 36% of people (sample size 400) felt worried about paying their water bill – despite all of these residents paying a standard charge as part of their rent. **Clear leadership by the Coalition Government and a roadmap to full metering, within a regulatory framework which incentivises large-scale water efficiency, and enables the use of innovative tariffs, would have a clear social benefit.**

Helping us use water wisely

There is a growing and identified trend in the UK towards resource-efficient behaviour. Defra's recent surveys³⁹ have shown an increase in the proportion of people who report making an effort to cut down on water use – from 52% in 2007 to 69% in 2009. In recent years advice programmes and incentives have targeted energy efficiency, but Waterwise research indicates that **people are also keen to be more efficient with water.** In research by Waterwise East and Savills⁴⁰, 65% of households surveyed liked the idea of having an overall water-saving package in their homes and 48% said they would be willing to pay more for a more water-efficient home. With water, wanting to waste less extends beyond the financial incentive of reduced bills – during the Waterwise-led *Tap into Savings* programme⁴¹ participants who have signed up for water efficiency home visits have done so because they want to save water to help the environment, reduce their bills, cut waste or feel as if they are doing something “good”. There are opportunities for engagement at both the household and community level in order to help people use water wisely – contributing to community cohesion and citizen empowerment.

³⁶ <http://www.waterwise.org.uk/images/site/Research/water%20efficiency%20in%20greater%20london%20housing%20sept%202009.pdf>

³⁷ <http://www.waterwise.org.uk/images/site/Research/preston%20water%20efficiency%20initiative%20-%20final%20report%20-%20march%202009%20-%20waterwise%20with%20partners.pdf>

³⁸ Report not yet published

³⁹ <http://www.defra.gov.uk/evidence/statistics/environment/pubatt/download/report-attitudes-behaviours2009.pdf>

⁴⁰ http://www.water-efficient-buildings.org.uk/?page_id=43

⁴¹ www.tapintosavings.org

Big society

Partnership retrofitting projects such as those being carried out by Waterwise in Swindon⁴² (with WWF and Thames Water) and through the *Tap into Savings* programme increase engagement beyond solo approaches. Waterwise's *Evidence Base* shows that such projects also reduce costs and increase uptake rates. The *Tap into Savings* programme includes the development of community EcoTeams, and social housing providers, local authority and community groups all working together for more water-efficient homes and people. **Water efficiency can be a very visible and effective element of the big society.**

Water efficiency and the big society

Waterwise's research⁴³ suggests that a partnership approach to water efficiency is the most cost-effective. Partnership retrofitting and behaviour change campaigns tend to show greater uptake, engagement and water, carbon and financial savings, and to be more innovative than solo approaches. This could be an important outcome of the Coalition Government's big society – creating a more balanced economy, increasing the role of social enterprises and co-operatives and communities coming together to make lives better. At the same time it would drive the more efficient use of water and could inform the development of new trusts to help communities provide local housing.

⁴² www.savewaterswindon.org.uk

⁴³ http://www.waterwise.org.uk/images/site/Policy/evidence_base/evidence%20base%20for%20large-scale%20water%20efficiency%20in%20homes%20-%20phase%20ii%20interim%20report.pdf

The environmental case for water efficiency

In a nutshell

Water efficiency will help us stop taking too much water from the environment - protecting wildlife and natural resources. It will also reduce carbon emissions and help tackle climate change. The environmental case for water efficiency is central to the Coalition Government's commitment to protect the environment for future generations, make our economy more environmentally sustainable, and improve our quality of life and wellbeing. It is also fully supported by customer research – 89% of people in the UK think that the government should do more to protect our rivers⁴⁴.

Drawing too much water

The Environment Agency for England and Wales has already classified some areas of the UK as under serious water stress⁴⁵. **Even beyond areas of water stress there is a significant amount of over-abstraction** – 15% of river catchments in England and Wales are classed as “over-abstracted” and 18% as “over-licensed”⁴⁶. Many wetlands have been lost. According to the Environment Agency's Catchment Abstraction Management Strategies⁴⁷ there are a number of Welsh rivers that are over-licensed and over-abstracted – for example the river Usk and areas around Angelsey are particularly stressed. Scotland has seen pockets of drought in recent years, with a Drought Order and hosepipe ban in place in Dundee in 2004. Unsustainable abstraction, with other factors, means the UK faces an uphill challenge in meeting the quality requirements for rivers set out in the Water Framework Directive – which also requires water efficiency and metering - by 2015.

Environmental protection

The water environment sustains us all in life and leisure, as well as supporting the economy. It also sustains all of our biodiversity. Waterwise's work with WWF⁴⁸ is designed, including through a partnership retrofit covering the whole of Swindon, to help preserve three of England's iconic chalk streams. These rivers are only found in England and parts of Northern France, and host an abundance of native wildlife that, if lost through over-exploitation, will be lost to the world for ever. Diffuse pollution of the water environment can also be addressed by new regulatory frameworks to encourage water efficiency - for example, by reflecting the full long-term value of water in incentives for water abstractors, at a catchment level.

Tackling climate change

As set out on page 4, **wasting less water in homes and businesses can help meet the UK's carbon targets by reducing emissions from homes and from the water industry.** It ties in with the Coalition Government's commitment⁴⁹ to use a wide range of levers to cut carbon emissions, decarbonise the economy and support the creation of new green jobs and technologies.

⁴⁴ http://www.wcl.org.uk/bfw_public_opinion_poll.asp

⁴⁵ <http://publications.environment-agency.gov.uk/pdf/GEHO1207BNOC-e-e.pdf>

⁴⁶ <http://publications.environment-agency.gov.uk/pdf/GEHO1208BPAS-e-e.pdf>

⁴⁷ <http://www.environment-agency.gov.uk/research/planning/33376.aspx>

⁴⁸ http://assets.wwf.org.uk/downloads/rivers_on_the_edge.pdf

⁴⁹ http://www.direct.gov.uk/prod_consum_dg/groups/dg_digitalassets/@dg/@en/documents/digitalasset/dg_187876.pdf

Meeting the challenge – defining the problem

Waterwise’s White Paper vision for the next five years (set out on page 3) can be delivered through innovative policies, as well as more strategic development of existing policies in separate sectors. In other words, **some of this isn’t rocket science, it’s just about joining up – although some of the proposals in this White Paper are more radical.** And there is an **urgent need for government leadership** to draw these threads together – both within and beyond the water sector. The next two years will be particularly crucial in influencing the development of the regulatory framework for water in the context of the next price determinations across the UK – as well as those of other sectors such as energy and housing. In addition to policy and regulatory change, there will need to be further development of the knowledge base.

Below, Waterwise sets out the need for change and a series of proposals. This section is divided into two – policy change needed on water specifically and policy change to help meet wider national priorities. Proposals are marked according to the specific Coalition Government commitments and priorities they will help deliver – using the key in the Introduction (page 2).

A smarter policy and regulatory framework for water

Defining the opportunity – what needs to change?

In a nutshell

The Coalition Government is committed to reforming the water industry to ensure more efficient use of water. Undertaken in the right way, this could lead to a water industry, across the UK, which is incentivised and structured to reflect the full value of water, and - with partners – to help address national challenges, such as climate change mitigation and adaptation and housing and population growth. Changes to the regulatory framework for water can also drive the low carbon and green economy.

Incentives in the wrong place

The regulatory framework for water currently incentivises the water industry in England and Wales towards supply-side measures. As such, the full long-term value of water, in economic, social and environmental terms – for example its value in different places at different times - is not reflected, as noted by *Cave and Walker*. There is a strong bias towards capital expenditure because this contributes to the regulatory asset base. This bias acts as a barrier to large-scale water efficiency – this is despite the Revenue Correction Mechanism which Ofwat has introduced, which is welcome, but will only bite every 5 years, so does not drive year-on-year supply-demand investment decisions. The water companies are undertaking excellent work, retrofitting tens of thousands of homes at no extra cost to the customer, including in conjunction with large-scale metering programmes, and encouraging customers, schools and businesses to waste less water. But this is a very small proportion of the amount they spend on supply-side measures. As Severn Trent Water set out in their Changing Course document⁵⁰ in April 2010, “In order to equalise incentives, there needs to be scope for initiatives involving operating expenditure to earn a return”. A bias towards capex also acts as a barrier to sustainability in other sectors, such as transport, energy and communications - and in the public sector - where investment in new capital projects is easier to fund than alterations.

⁵⁰ <http://www.stwater.co.uk/server.php?show=nav.6402>

More barriers

The current structure of the water industry in England and Wales raises further barriers to the more efficient use of water. The regulatory framework for water features at the same time an excess of regulation in terms of layer upon layer of requirements (Water Resource Management Plans, the Price Reviews, Strategic Direction Statements, Catchment Management Strategies (CAMS), River Basin Management Plans, Notified Items, Drought Plans....), often with different timescales and “owners”, and significant gaps, for example in terms of making the links with other sectors to drive efficiencies in households, and Water Resource Management Plans not including sewerage. The current five-year cycle for water pricing does not adequately address the long-term challenges – the delay in the UK Climate Impact Programme 09 scenarios by several months meant that water companies were unable to incorporate the scenarios into their final business plans for the next five years. Innovation does not play a big enough role. International comparisons and learnings are not applied. Competitive new practices are often required to take place outside the regulated business of a water company. Diverse patterns of ownership can mean conflicting priorities where regulatory drivers are unclear. The UK water industry is now subject to the Carbon Reduction Commitment but this is not driving sufficiently widespread mitigation effort. This combination of factors makes long-term, sustainable financing of the industry more challenging. **More flexible, smarter regulation would address these issues, as well as affordability – and could be undertaken alongside increased competition.** It could also drive the delivery of new services by water companies to their consumers, such as rainwater harvesting and consumer information linked to new technologies.

People

There is a question as to whether the regulatory framework enables the industry to be responsive enough to customer demand. The role of individual choice and habit in water use and efficiency is increasing, and behavioural and attitudinal change now recognised as essential alongside retrofitting programmes and product development. But current mechanisms struggle with reflecting support for this by the water companies in the investment process. It is also important to ensure that frameworks incentivise consumer satisfaction with products (as well as water savings) – so that, when later replacing entire bathroom suites, they are more likely to do this with water-efficient fittings. A further example of the need to work closely with people lies in hosepipe bans - the Flood and Water Management Act (2010)⁵¹ updates the regulations but is not supported by a universally understood code of practice, and now includes a potential ban on paddling pools. Engagement with consumers is very important in this context.

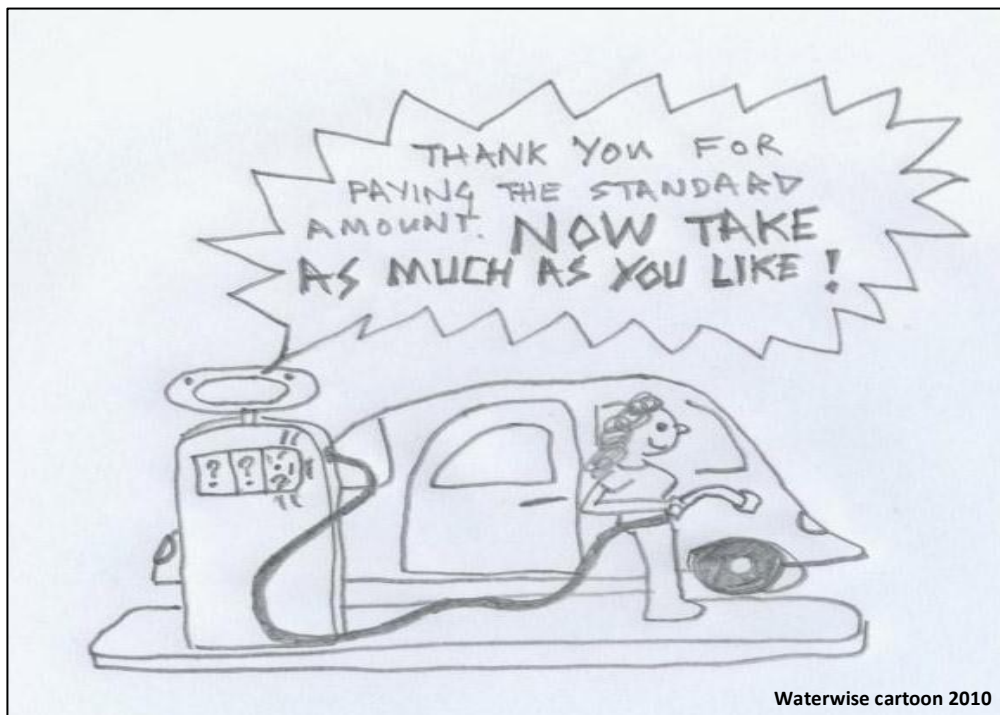
Ofwat is undertaking a fundamental review of its own regulatory framework and whether it is fit to address the long-term challenges of climate change and population growth, and is committed to addressing these issues. But **there is a wider role for government in providing the leadership and legislative framework, and making the strategic links with other sectors.**

Paying for what we use

Only a third of homes in England and a quarter of homes in Wales, and less than 1% in Scotland, currently pay for their water according to how much they use. This makes us almost unique in the EU and in developed countries across the world. Under the price determinations set out in 2009⁵² metering in England and Wales will move to 50% of homes (and 57% in areas of serious water stress) by 2015 – and two companies will move to universal metering within that period. **But it makes no sense that in a world where the climate is changing, and where water efficiency is a key tool in managing the impacts of climate change and tackling it, most of us could leave the taps running all day and still pay a fixed amount. It is inconceivable that such a principle would apply to other goods such as energy and fuel – paying a set price regardless of how much is consumed – and neither of these is essential to life. Metering helps people to manage their water bills and water companies to manage peak demand.** Every home in Britain will receive a smart energy meter in the next few years, and this provides an opportunity to link with water metering.

⁵¹ http://www.opsi.gov.uk/acts/acts2010/ukpga_20100029_en_1

⁵² http://www.ofwat.gov.uk/pricereview/pr09phase3/prs_web_pr09fd



Water efficiency and wider national priorities

Defining the opportunity – what needs to change?

In a nutshell

When the regulatory framework for the water industry in England and Wales was designed, at privatisation over twenty years ago, the challenges (such as ensuring continuity of supply, securing capital for investment and addressing leakage) **were specific to the water sector. Now the long-term challenges – of climate change, population growth, and economic stability – are common to all sectors.** The regulatory frameworks for water, energy and housing need to work together to help address these shared challenges. In some cases this may mean joint mechanisms. At the very least it should mean that, as the frameworks for each are redesigned over the next couple of years, this is taken forward strategically and not in sectoral isolation.

Adaptation and mitigation

As set out on pages 4 and 5, there are substantial climate change drivers for mainstreaming water efficiency within homes, buildings and people. These include adaptation and mitigation, through building resilience, carbon reductions, greater control over energy bills (and water bills for metered consumers), increased customer engagement and greater take-up of retrofitting programmes.

Homes

Alongside regulatory reform, policies and strategies to make homes more energy-efficient, warm and “decent” need to include both hot and cold water efficiency measures – the over-focus on energy is contrary to wider Coalition Government objectives. This includes standards for new homes and zero carbon. The Green Deal national energy retrofitting scheme of up to £6,500 a house could include water efficiency (taps, toilets and showers), at an average cost of £40 a house. A supplier obligation on the water industry in England and Wales, building on the current water efficiency targets, could help fund the water efficiency element of a national retrofitting package. For metered homes,

this would payback within two years.⁵³. New green financial products in the green investment bank and European Investment Bank funds could also be used to fund such a programme.

Buildings

Adaptation and energy efficiency advice programmes do not currently include water efficiency. Large and small businesses, schools, hospitals and other workplaces, most of which are metered for water, could save up to 20% on their water bills through simple measures such as installing water-efficient taps, toilets, urinals and showers, and staff behaviour change. In the MOD and the NHS, simple procedures such as fixing dripping taps could potentially result in significant savings which could be invested in frontline services (see the box on page 7). The Federation House Commitment⁵⁴ aims to help reduce overall water usage across the food and drink industry by 20% by the year 2020, but other sectors have not yet followed suit.

Planning

Water efficiency currently plays a minor and patchy role in planning, even in water-stressed areas. The Coalition Government's commitment to creating a presumption in favour of sustainable development in planning, incentives for local authorities to deliver sustainable development, including for new homes and businesses, and a fundamental rebalancing of the planning system towards local people, through an "Open Source" system, offer substantial opportunities for partnership retrofitting projects. Innovative planning policies such as water neutrality would help drive the water efficiency of existing homes – two thirds of the UK's 2050 homes have already been built⁵⁵ - by retrofitting existing homes in the area of new build, to ensure total water demand doesn't increase.

People

It is now generally accepted that individual behaviour and attitudes are fundamental to tackling the causes and consequences of climate change. Consistent, multi-stakeholder messages across the UK are key to any change in what people think and do, on a scale similar to public health campaigns. **Water efficiency barely features in most of these programmes and messages** – it should play a prominent role in them, to increase both their environmental and economic impact and the range of advice offered to prompt changes in behaviour across the use of resources.

Low carbon economy

- In a nutshell

UK plans to deliver the low carbon and green economy need to include water. Water efficiency can help make the UK more attractive to investment, reduce carbon emissions and increase green jobs. Water efficiency did not feature in the previous government's strategy for a low carbon economy, nor is it reflected within the framework of carbon budgeting. Including water efficiency will further stimulate growth and employment.

- Jobs

Developing the UK manufacturing base for water-efficient products should be an essential part of the Coalition Government's sustainable growth and enterprise strategy. **There is a strong manufacturing base in the UK for these products, but as they are not included in targeted green growth plans** there are already cases of new products going out of the UK to seek investment. Including water efficiency in energy retrofitting programmes will increase the number of green service jobs. This could lead to developing new infrastructures, social innovation, and building on regional and national examples of good practice to deliver water efficiency at the UK level.

Within regional sustainability clusters - covering water, energy and waste - businesses, higher education institutions and research organisations across the public or private sector could work together to implement innovative economic development projects. With government support, these could make regional and local economies more competitive, creating jobs and attracting investment.

⁵³ Waterwise research

⁵⁴ www.fhc2010.co.uk

⁵⁵ <http://www.sd-commission.org.uk/publications/downloads/Sustainable%20Buildings%20R3.pdf>

- Products

Only toilets are subject to water efficiency standards in the UK – and existing standards only influence new homes or those being refurbished. There are no product standards for taps, showers and urinals - these would help drive the market in water efficient products, making them cheaper for both individual and business customers. Water-efficient products and supply chains also help reduce the impact of the “embedded” water in products we import from water-scarce countries, such as meat and clothes.

- Incentives

The Coalition Government is committed to a Green Investment Bank which will create green financial products to provide individuals with opportunities to invest in the infrastructure needed to support the new green economy. This is an **important opportunity to mainstream water efficiency in the low carbon and green economy**, through linking the green financial products with water efficiency measures in homes and buildings. A green mortgage could be linked to water efficiency measures in the home.

Toilets: a case study

An England wide toilet scrappage scheme could deliver significant water savings and cuts in household bills, and stimulate the manufacturing element of the low carbon and green economy. Within a year this would supply additional water equivalent to building a new, large capacity reservoir⁵⁶.

There are an estimated 900,000 toilet cisterns still in use in England alone with flush volumes of 13 litres (pre 1960s) compared to dual flush toilets being manufactured in the UK now which flush at less than a third of that volume⁵⁷.

56% of the most inefficient toilets are in owner occupied properties where owners are likely to replace the bathroom suite, so a large proportion of the most inefficient toilets could be replaced by incentivising homeowners to refurbish their bathrooms.

22% of the most inefficient toilets are located in local authority housing, offering the opportunity to piggyback on energy efficiency retrofitting and other local authority maintenance activities. Local and national partners, including retailers, manufacturers and community groups, could help design, promote and deliver a programme.

The next water company price review process, beginning in 2012, provides a chance to integrate toilet scrappage into water efficiency targets for water companies.



⁵⁶ Waterwise figures

⁵⁷ <http://www.bathroom-association.org/pdf/01-2010trends.pdf>

Regulation across sectors

- Common barriers

The **capex bias** which acts against large-scale water efficiency programmes in the water sector is also an issue in other sectors such as transport, housing and energy, and in schools and hospitals, where ease of securing funding leads to prioritising of new capital projects over adjustments to existing ones. This bias is a **barrier to sustainability across the UK economy**. It is counter-intuitive – in our own lives we would be unlikely to build a new home when our existing one (or another existing one) could be improved.



- Water, energy and housing

The policy and regulatory framework for energy across Britain, including the Green Deal and the current energy supplier obligation (the Carbon Emissions Reduction Target), at worst does not include water or at best disincentivises joint working on water and energy efficiency. Joint working of this kind was recommended by the *Walker Review* and would deliver maximised water and energy (and financial) savings in households, through a single visit, increased consumer engagement, and a cost-effective budget. **There is an over-focus on carbon savings from some measures at the expense of others: this does not currently represent smart regulation. Standards to drive energy efficiency in new homes and buildings, and for zero carbon, do not include water efficiency despite its important role in both mitigation and adaptation. Nor do social housing standards include water efficiency measures or the installation of showers** – Waterwise research⁵⁸ shows that 80% of social housing does not have showers.

Respondents to Waterwise's 2009 Consultation on Scaling Water Efficiency Up⁵⁹ were asked whether water efficiency should become a national priority alongside energy efficiency: they were broadly in agreement that it should, and that this should be supported by an increased focus on evidence.

- Big society

If a big society means bringing together local needs, skills and communities, then mainstreaming water efficiency in existing and new energy and housing policies will help develop and deliver it. New partners and funding sources will deliver multiple benefits – and engagement with local people – at community level.

⁵⁸ GLA study (see footnote 36 on page 8)

⁵⁹ http://www.waterwise.org.uk/images/site/Consultation/consultation%20document%20on%20water%20efficiency%20final%20_%20design_910.pdf

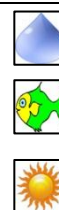
Meeting the challenge – proposed solutions

A smarter policy and regulation framework for water

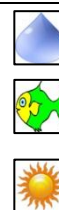
The Coalition Government is committed to examining the conclusions of the *Cave* and *Walker Reviews*, and reforming the water industry to ensure more efficient use of water and the protection of poorer households. There are a number of potential models which would meet both these criteria and tie in with the wider Coalition Government objectives of creating jobs in a low carbon economy, environmental protection and the big society.

The Coalition Government is committed⁶⁰ to the creation and expansion of mutuals, cooperatives, charities and social enterprises, and enabling these groups to have much greater involvement in the running of public services. Could this be an opportunity to remove or redirect the profit incentive in the water sector in England and Wales, to reflect the full, long term value of water, and the big society?

-
- The regulatory framework for water should reflect the full, long-term **value of water** – not only its immediate price, but also its wider value to society, the economy, the environment, wellbeing, health and community cohesion, including scarcity value. Abstraction licensing should be reformed to reflect this, and trading considered, as well as time-limited abstraction licences. The map of water-stressed areas for England and Wales should be updated to reflect abstraction pressures. Cost benefit analysis should be wider than the current Average Incremental Social Cost



-
- Reform of the water market should incentivise the development of **water service companies** through retail competition, focussed on providing water efficiency services as well as water supply services, such as rainwater harvesting, greywater recycling and IT linked to consumption information. This framework could even include a short-term stimulus of water service companies competing for a share of a regulator-approved budget to drive innovation and water efficiency. It should enable strategic trading between neighbouring companies to address time-specific local shortages, supported by a virtual grid



-
- The market alone will not deliver water efficiency. A renewed regulatory framework should reflect national and regional priorities on climate change mitigation and adaptation and resource efficiency. It should enable longer-term investment – and sustainable financing - alongside shorter-term flexibility to respond to climate, market and other pressures. The profit incentive should be turned on its head so that water companies are incentivised to sell less water rather than more – **the bias towards capital expenditure should be removed**. This should promote working between companies and beyond water-stressed areas, and the sharing of knowledge, as well as competitive delivery of innovative measures, such as a spend-to-save scheme for schools. As in Australia, retrofit would then come higher up the scale of investment priorities than large supply-side measures such as desalination or new reservoirs



-
- Future benefits of increased water efficiency should be taken into account, and the payback period increased to allow companies to keep the rewards over a longer period. This would drive a **long-term investment framework** as well as reflecting the full value of water. Innovation within the water sector and with other sectors should be rewarded – for example through allowing a higher risk level for investment in new, “demonstration” activity, similar to the Ofgem model for energy efficiency. There should be a return from investment in innovation, including that to drive water efficiency partnerships

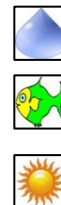


⁶⁰ Coalition Programme for Government page 29

- **The new regulatory framework for water should be developed alongside that for energy and housing** so that wider national priorities can be efficiently taken forward. See Homes on page 19 for further details



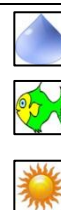
- With other measures, reform of the regulatory framework should be linked to an **overall per capita consumption reduction target** set by government for England. This could be supported by regional equivalents set on a water company, water stress or catchment basis. This should also be the case for Wales, Scotland and Northern Ireland



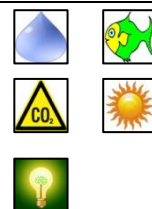
- The regulatory framework should recognise the increasing importance of on-the-ground, face-to-face **engagement with people** to help them waste less water – and incentivise this, including delivering it in partnerships which stretch beyond the water sector



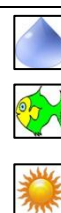
- There should be a political commitment to a **water meter in every home** in England and Wales by 2020, set out in a roadmap which includes the use of tariffs to protect vulnerable groups. This should be based on a much wider cost-benefit analysis than at present - including the full value of water, abstraction pressures and carbon emissions. The roll-out of smart energy meters for every home in Britain by 2020 should be linked with water metering



- **Carbon targets** should be developed at water company level and water companies able to trade the carbon they save through water efficiency measures in homes and buildings as well as through their own processes



- **A Code of Practice to support the updated hosepipe bans legislation⁶¹** should include not only the water industry but also **the relevant manufacturing sectors**



Should a shadow price of water be developed to help deliver the full value of water in the current regulatory framework, in advance of wider regulatory reform? This worked in the carbon market. Regional differences in price and scarcity would need to be reflected, unlike in energy.

⁶¹ http://www.opsi.gov.uk/acts/acts2010/ukpga_20100029_en_1

Water efficiency and wider national priorities

This section contains more proposals to mainstream water efficiency than in the section specific to the water sector - illustrating the vast opportunity for the Coalition Government to increase the effective delivery of its priorities by mainstreaming water efficiency.

Adaptation and mitigation

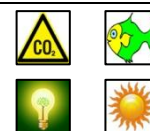
Water efficiency best practice should be included in public sector adaptation strategies and resilience programmes



Water efficiency should be included in carbon budgets



Government guidance on adaptation and good business practice should require a water efficiency audit and measures – these would lead directly to reductions in bills, as well as increased climate resilience



Homes

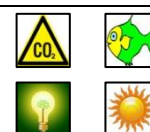
The Green Deal energy retrofitting scheme should include water efficiency. This should be reflected in the Energy Bill. It could be funded by a supplier obligation on the water industry, European Investment Bank funding and other measures such as new green financial products



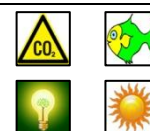
There should be **incentives for households to move from retrofitting to replacement by water-efficient and energy-efficient products** – including dishwashers and washing machines – building on product standards and a co-ordinated approach and advice, leading to savings on energy and water bills



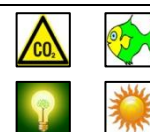
Water efficiency in new homes should follow the trajectory of energy efficiency, including through the Code for Sustainable Homes and zero carbon ratings



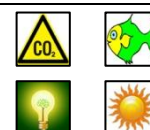
Social housing residents should receive showers and other water efficiency measures in upgrading programmes and newly-built homes. New community trusts for housing could build on this



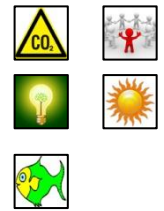
The Energy Performance Certificate should be used to support energy and water efficiency measures, to help drive sustainability in the homebuying process



New green financial products from the green investment bank should be linked to product standards and changes to the Energy Performance Certificate, to drive water efficiency and energy efficiency

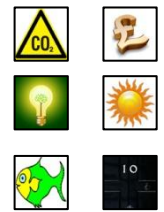


Government should support third sector coalitions to deliver retrofitting and behaviour change to homes and communities, for water, energy and waste – to ensure greater value for money, these should be supported by seedcorn funding for the third sector rather than through government-funded bodies

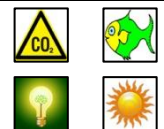


Buildings and workplaces

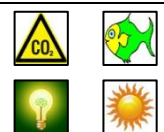
Public sector procurement should mandate the most water-efficient products currently available on the market, and be regularly updated



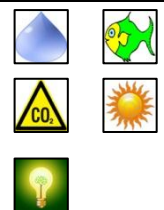
Water efficient product standards for buildings should be developed across water-using products. These could be linked with Display Energy Certificates (DECs)



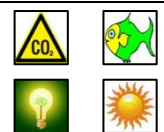
Insurance discounts for climate change resilience should apply to water efficiency measures taken by businesses as well as flood risk management



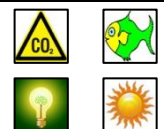
There should be a **spend-to-save fund for schools through which savings on water bills from retrofitting measures pay retrofitting bills.** The water industry could control the bill manipulation, but this would be beyond their regulated business so could need incentives and regulatory support



The Enhanced Capital Allowances scheme for water-using products should be revamped to ensure it drives business practice and procurement

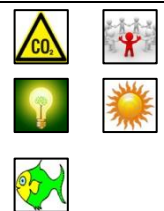


More sector-specific water efficiency commitments should be developed through the third and private sectors working together, supported by government and regulators

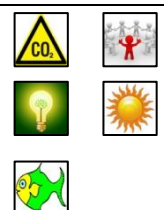


Planning

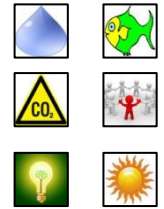
New planning frameworks with an increased role for local people should take forward water neutrality partnerships – with homes, businesses, schools and hospitals in the area receiving a water efficiency retrofit to avoid an increase in overall demand as a result of new local development



Any replacement for Local Area Agreements should require water efficiency in local planning policies

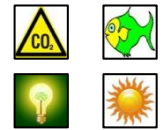


Pilots and incentives should be developed to provide community-scale water provision and sustainable urban drainage – building resilience to flooding and scarcity, and the big society. These could be implemented through new mutuals within water companies, with the third sector

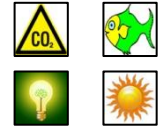


People

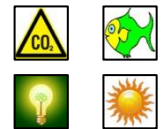
There should be a **single, voluntary, cross-sector-supported water efficiency label** for all water-using products



Product standards should be set for water-using products in homes and buildings, and linked to public sector procurement – cutting public sector costs and driving the market towards cheaper water-efficient products for householders

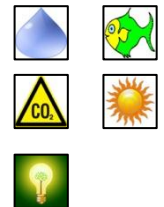


There should be a **multi-sector, targeted UK-wide water efficiency campaign** to help drive changes in behaviour and cut household bills

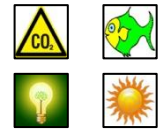


Low carbon and green economy

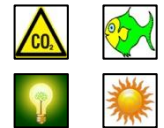
As set out above, **water efficiency should be included in energy efficiency retrofitting programmes**, increasing the number of green service jobs



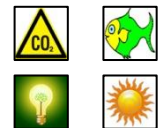
The potential contribution of water efficiency to the low carbon economy should be quantified, and reflected in incentives and programmes to deliver it



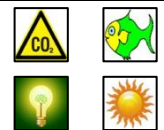
Incentives for water-efficient manufacturing should be developed: cutting red tape, reducing the administrative burden, increasing access to loans, and creating the right business environment



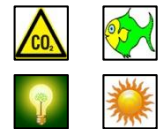
Training, education, research and development should target water efficiency, to deliver jobs and lower bills for SMEs, other businesses and people



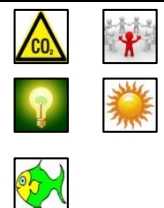
There should be a **single water efficiency plumbing standard and certification**



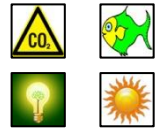
Clusters of environmentally responsible areas should be developed within regions, covering water, energy and waste, to drive competitive advantage – these could be supported by the new scheme to help businesses in targeted areas of the UK



A toilet scrappage scheme should be considered. This could be a government-sponsored scheme, implemented at local level, including the third and private sectors, which provides incentives for homeowners, local authorities and social and private landlords to replace the most inefficient toilets with the most efficient toilets (see box on page 15)

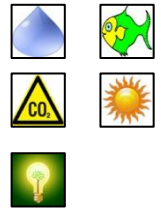


Product standards should be set for taps, showers and urinals, to help drive the market in water-efficient products. These should be linked with public sector procurement, a single, voluntary, cross-sectoral water efficiency labelling scheme, incentives such as council tax rebates and new green financial products, social housing standards and retrofitting schemes and a cross-sector water efficiency campaign to help people waste less water

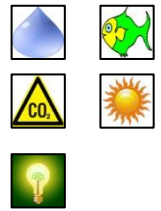


Regulation across sectors

The barrier to sustainability created by the bias towards capital expenditure in the regulatory framework should be analysed across the economy, and a strategy developed to tackle it

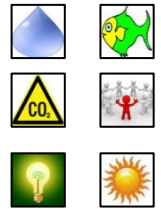


Any successor to CERT (Carbon Emissions Reduction Target) on energy suppliers should work with water regulation rather than against it



Big society

Practical issues which arise in the development of partnerships to drive water and energy efficiency and sustainable and decent housing need to be addressed (see the box on page 23). These include issues of contrary incentives, infrastructure (for installation and provision of advice), accumulated knowledge, liability, and training



Should the focus of the UK economy shift from a bias towards capital expenditure, to drive sustainable financing and investment? This would address barriers to sustainability across many sectors, such as water, energy, transport, communications and even for schools and hospitals.

Now is not the time for VAT reductions. But VAT reductions to drive sustainable products have been considered for energy efficiency. In the long-term, this subject is likely to be returned to, and should include water efficiency. The third and private sectors could help build consensus in the EU.

A big society project – addressing the barriers

The Waterwise-led Tap into Savings⁶² partnership retrofitting and behaviour change programme covers 10,000 social housing units in three areas of England. It is delivering water and energy savings and developing community teams. However, it has identified some early barriers to big society partnerships:



- in some cases water companies are incentivised to retrofit in water-stressed areas only, and not in partnership with neighbouring water companies. There is a disconnect between social housing providers' or local authority territories and that of the water company, with the former wanting to work across their entire areas but the latter not supplying those entire areas
- water company incentives (water efficiency targets) focus them on the water (and energy) savings from a product rather than its savings and performance – sometimes encouraging the distribution of one product that may not be performing to customers' satisfaction, potentially acting against behaviour change and how keen they are to “refurbish” with water-efficient kit in the future, beyond “retrofit”
- there is no standard approach to water metering amongst social housing providers – some are in favour and some opposed
- there is a lack of trained installers to deliver simple water efficiency devices into homes, alongside help and information on behaviour change
- water companies and social housing providers do not currently keep their records in a compatible way – in part, because legislation does not provide for a named water company customer per household – and there are issues of data protection involved in partnership delivery
- small gaps in explanation to householders can have significant impact on uptake of retrofitting and behaviour change – for example, a) that, where there were several options on offer, this was not an “all-or-nothing” programme, so that those who didn't want product X were still encouraged to apply for products Y and Z, and b) that the grey appearance of water from a new aerated tap was due to bubbles, not poor performance
- there is a lack of published knowledge on the best water-efficient products for retrofitting, and linking this to user experience – Waterwise has much of this information, but is not resourced to publish and disseminate it
- some social housing providers struggle to provide the human and financial resources for partnership retrofits because these stretch across all their programmes
- water companies are required to make a case to Ofwat for large-scale water efficiency spending and the parameters for this are currently quite tightly defined (so some is not awarded), as the regulatory framework does not at present reflect the “full” value of water
- the infrastructure for shared services does not exist – for example, if a water company and social housing provider are providing a partnership service, there is an issue around whose customer service contact details should be provided
- the “additionality” issue in CERT - currently blocking some joint energy and water efficiency work - means it is hard for joint water and energy projects to source free energy-efficient kit
- managing different audiences is key – a social housing retrofitting programme cannot be offered to private tenant neighbours, making “refer-a-friend” programmes challenging
- and finally – learning from other Waterwise partnership projects and research - the Decent Homes standard does not allow for other than like-for-like replacement, and most social housing does not currently have showers

⁶² www.tapintosavings.org – part-funded by Defra's Greener Living Fund

Evidence – building the knowledge base

Why is it important to build the knowledge base?

In a nutshell

Evidence is needed to underpin policy. This will ensure efficient, cost-effective delivery, and drive behaviour change. Waterwise is building the economic case for partnership retrofitting in the water sector. **But there is a great deal which is not yet understood about how people in the UK use water, and a need to quantify the potential contribution of water efficiency to the low carbon and green economy.**

Making water-efficiency cost-effective

Building on existing knowledge, **the nature of the interaction between multiple measures such as retrofitting, metering and tariffs needs to be further explored, as does evidence on the most cost-effective way to reduce water bills in schools, hospitals and SMEs through water efficiency.** This will support policy moves towards a sustainable, long-term investment framework for the water industry. Waterwise is building the economic case for large-scale water efficiency⁶³ – when undertaken alone, and combined with other measures. Further research will be needed to underpin and quantify this potential, including in the context of the behaviour of individuals.

How people use water

There are many gaps in our knowledge of how people in the UK use water. For example, not enough is known about why two identical and neighbouring homes, with the same occupant composition, could have radically different water consumptions; why consumption varies so much, and why it varies regionally; how water savings from leaflets, school visits and events can best be quantified; how uptake rates of retrofits can be maximised, and what messaging works best; or what are the triggers of behaviour change. But it is clear already that water efficiency has a significant role to play. Existing research points to behaviour as the key driver: examining what drives these differences in behaviour is key to understanding, and influencing, water use.

Waterwise research⁶⁴ shows that little evidence exists concerning why people use baths and showers the way they do.

Differences in water and energy use

There is evidence to show that people behave differently with water than with energy (for example seeing beyond the financial incentive to a general wish to help the environment and generally to do “good”), so the models cannot be directly mapped onto each other. Unlike energy consumption, water consumption across the UK varies considerably between water company areas: both by region, and within regions. In addition, unlike energy, where consumption has been linked to issues such as affluence, in water there are clear variations between households of similar socio-economic status.

Low carbon economy

As set out elsewhere in this White Paper, **water efficiency has a considerable contribution to make to the development of the low carbon and green economy, through manufacturing and services. Information is needed on the scope of this to enable targeted measures to be effective.**

⁶³ http://www.waterwise.org.uk/images/site/Policy/evidence_base/evidence%20base%20for%20large-scale%20water%20efficiency%20in%20homes%20-%20phase%20ii%20interim%20report.pdf

⁶⁴ <http://www.waterwise.org.uk/images/site/Research/final%20water%20and%20energy%20implications%20of%20personal%20bathing%20-%20for%20est%20apr%202009.pdf>

Further research as listed below would help deliver Coalition Government priorities and commitments (according to the key on page 3):

Making water efficiency cost-effective – research needs

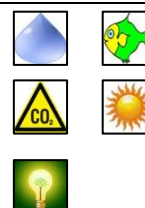
More actual water efficiency projects to inform the evidence of the impact of metering and tariffs on the cost and benefits of large-scale water efficiency



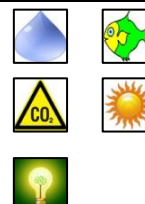
The potential for water, energy and cost savings - and payback times - from water efficiency measures in schools, hospitals and SMEs, as well as the wider public sector



The impact of existing mechanisms on driving water efficiency in large businesses, such as the Enhanced Capital Allowance scheme and the Carbon Reduction Commitment



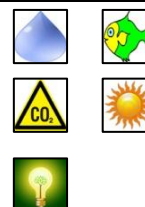
For areas in the UK where per capita consumption is unknown, the current level of water use, including hot water



The optimum per capita consumption to relieve pressures on the water environment

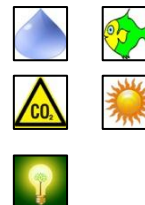


The incremental saving in drainage costs from water efficiency retrofitting measures in homes

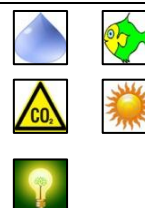
































How people use water – research needs

How water savings from leaflets, school visits and events can best be quantified; how uptake rates of retrofits can be maximised, and what messaging works best; what the triggers are of behaviour change and how this can most effectively be linked with retrofit



Drivers of showering and bathing behaviour



<p>“Acceptable” levels of shower performance</p>	    
<p>Further detail on the links between water use and carbon intensity – including field studies to establish average shower length and product impact, and to inform the costs and benefits of water efficiency even once the grid has been de-carbonised</p>	    
<p>The impact of current and potential fiscal and financial incentives for water efficiency, such as the effectiveness of the Enhanced Capital Allowances Scheme, VAT and council tax reductions, and market-based pricing signals</p>	    
<p>Low carbon economy – research needs</p>	
<p>The potential water efficiency element of the low carbon and green economy, in terms of both jobs and services</p>	    
<p>The level and type of standards for water-using products for domestic and non-domestic use which would transform the market and impact on bills</p>	    
<p>The impact of spot-carbon footprinting, for example focused on high-selling products within retail chains</p>	    

Financing water efficiency

This White Paper sets out several mechanisms for financing water efficiency. In a renewed regulatory framework, primed to tackle the long-term challenges of climate change, population growth and economic constraints, water efficiency could be financed through the regulatory framework. Retrofitting measures could be funded through financial mechanisms within the water industry – including via the European Investment Bank - and piggybacked onto existing energy and housing programmes. Many of the other measures set out here would not include additional finance as they would be delivered through partnerships as part of the big society, in many cases maximising cost-effectiveness of

existing programmes. Mainstreaming water efficiency within the government's carbon budgeting programme, for the water sector as well as non-domestic consumers across the economy, will also help drive its cost-effectiveness. Water efficiency measures in the public sector and for other non-domestic water consumers pay for themselves through savings on water and energy bills. Untapped EU funds could also help finance water efficiency – Waterwise will explore these opportunities.

Next steps

This White Paper sets out a framework for mainstreaming water efficiency to ensure it fully delivers its potential in mitigating and adapting to climate change, and developing the low carbon and green economy and the big society.

Regulatory, legislative and policy measures taken by the UK government over the next two years are the key to developing such a framework and to ensuring the UK is in the best shape possible to meet the long-term challenges of climate change. In the short term, there is an urgent need for leadership from the UK government to build on the political, economic, social and environmental opportunities offered by water efficiency.

Waterwise looks forward to the priorities and measures contained in this White Paper being reflected in policy and legislative proposals from the Coalition Government.

Waterwise is considering the development of a UK-wide Water Efficiency Forum, building on the success of the Saving Water in Scotland Network it set up in 2006, to drive best practice in policy and delivery, and establish partnerships in the context of the big society and other opportunities.

What could happen if we didn't mainstream water efficiency?

Homes and businesses would not be as energy-efficient as will be required to meet targets, because energy would still be wasted heating water.

Five years into energy efficiency programmes for every home, increased water scarcity and more frequent drought would mean a similar retrofitting programme for water being considered, but consumers unlikely to favour a second visit and programme.

Wasted water would still be gushing out of fixtures and fittings in homes and businesses while consumers focussed on carbon and energy efficiency.

Three new regulatory frameworks would be in place – for water, energy and housing – which act in isolation, even though the challenges and the consumers are the same.

The water environment would be drying up, and species dwindling. While the energy sector would be incentivised to deliver energy efficiency services, the water sector would remain incentivised towards supply. Water, carbon and money would be being wasted across the economy.

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