Bristol Water
Bristolwater.co.uk
0345 702 3797

BRISTOL WATER

It's what we're made of.

Consultation on measures to reduce personal water use – Bristol Water response
Water Services
3rd floor, Seacole Building
2 Marsham Street
London
SW1P 4DF
By email: water.resources@defra.gov.uk

11 October 2019

Dear DEFRA,

Consultation on measures to reduce personal water use

Thank you for inviting us to provide input on the above consultation. We welcome this opportunity, as we believe that water efficiency continues to be an important theme in the water industry, especially with population growth and climate change leading to progressively greater focus in this area. Our research also suggests that younger generations face more complex and stressful lives than ever before, with potentially less time for and interest in saving water, versus a propensity to use more, for example by taking multiple showers per day. Without intervention this creates a worrying trend for the future. It is our long-term ambition to help customers to help their environment and save money through more choice on water efficiency. Indeed, water efficiency is mutually beneficial as our customers can save money on reduced consumption and our costs to supply can be reduced. We think a balance of cultural change, 'hard' solutions such as water saving devices, and changes in legislation are required.

The city of Bristol is a rapidly developing area and the population in the Bristol Water supply area is projected to grow during the period 2020-2045 from approximately 1.2 million people to approximately 1.5 million. However, thanks to ongoing improvements in domestic water efficiency and a projected increase in (non-compulsory) water metering, we do not forecast a large increase in overall demand for water during this period. Similarly, although we anticipate that climate change will reduce the water we have available for public water supply, the integrated nature of our supply network and the range of water sources we have available both help to mitigate this impact. We therefore anticipate that the impact of climate change on the water available for use in our area over the next 25 years at least is likely to be relatively low. Indeed, Bristol Water has no supply deficit or significant abstraction-related environmental issues to address - and has not imposed supply restrictions for almost thirty years - so public perception of water efficiency in this area will not be at the same level as seen in other supply areas. We also have the capacity and capability to contribute to water transfers to the South East, together with the other water companies in the West Country Water Resources group. Overall demand (Distribution Input) has also fallen by approximately 40Ml/d since peak levels seen in the mid-1990s thanks to reduced leakage, reduced industrial demand and improved household water efficiency.

A large proportion of water efficiency work has historically been carried out through engagement programmes with water users, promoting water efficiency to the public as a socially responsible

lifestyle choice and providing water efficiency equipment on request. However, whilst we believe that traditional promotion of metering and water efficiency should remain a core part of the work done on water efficiency and it is reasonable for this to remain part of a water undertaker's statutory duties, we believe that other opportunities exist which deserve additional attention. Our social contract initiatives look at what more we can do, across sectors, to build the shared connection to society necessary to support cultural change in the way resources are used.

Our preferred approach to maintaining our supply-demand balance is focused on optimising the use of our existing water sources while continuing to drive down leakage and water consumption to achieve a more sustainable use of water resources. Reducing demand, and increasing efficiency, is critical to securing the resources we all need. We do want to help customers to reduce water consumption, through supportive and voluntary measures. However, we recognise that we have to do more to help customers reduce water consumption in line with our long-term ambition to reach 110 litres per person per day by 2045. We will reduce our current water consumption levels by 6% by 2025 to c135 litres per person per day, which in itself will be challenging at a time that evidence suggests there are fundamental shifts, such as smaller household size and showering habits which are increasing water use, particularly amongst the 18-34 age range for consumers.

An important observation, and continued frustration of the water sector with policy, is that it does not address cross-sector issues sufficiently. Water resources, production, transport and its use in the home are closely related to energy use and carbon emissions. A water efficiency policy on its own without closer ties with energy efficiency along the whole supply chain is likely to be sub-optimal. We describe the steps we are taking to explore this topic further in our detailed response, but there is a role for government in addressing this policy gap, which is a long-standing concern.

One of our biggest challenges we face is customer perception and their understanding of the value of water, and in how we work with customers and other stakeholders to educate them on demand management and the benefits of water efficiency. Our future water availability and keeping water in the environment relies heavily on customers, consumers and communities really understanding the value of water and by working with us to make sure we have a better, more resilient future. In order to achieve this aim, we will require collaborative working with other water companies and local authorities as well as action by government over the coming years to:

- Influence customer consumption, culture and behaviour to become more water efficient;
- Modify government policy to better support water efficiency actions, such as mandatory water labelling, more water efficiency standards for water using appliances and enhanced water efficiency requirements for new homes;
- Incentivise manufacturers and innovators to reduce water consumption rates for household and commercial water using appliances; and to
- Link water usage to energy usage and to carbon dioxide production and in doing so, contribute to local and national carbon dioxide reduction targets through reduced water usage
- A government resource efficiency campaign that emphasises the positive local action that people can participate in their local communities, which includes the link between water efficiency, energy efficiency, waste efficiency and climate change. Effective local campaigns, such as exist within Bristol, should be signalled as local initiatives as the cultural approach the government is helping to support.

We have already instigated the creation of the Resource West partnership with Bristol City Council, University of West of England (UWE), Bristol Waste, Bristol Energy and other organisations to enhance the promotion of water efficiency in our supply area, and we aim to work with neighbouring water companies through the West Country Water Resources group on water efficiency promotion. Our other key observations relevant to this consultation are, in summary:

- Government can deliver benefits by making relatively small changes. Modernising existing regulations can make sustainability the rule rather than the exception, empower customers to make informed choices and increase awareness of the value and utility of water.

- We are opposed to any top-down prescriptive attempts to impose universal metering; this approach ignores the views of local customers and circumstances. We would instead urge the following in terms of importance and focus:

- Underpinning all these areas is the importance of partnership working and innovation. Much has been done to promote action on energy efficiency. Water efficiency is beginning to have a similar profile, playing a prominent role but greater links must be made between water, energy, food and building regulations. As an example, in 2018 we became part of an exciting new three year joint research project entitled SUNEX. This project falls under a global initiative called Sustainable Urbanisation Global Initiative which looks at the Food-Water-Energy Nexus. SUNEX in one of 15 projects taking place globally with an overarching aim of bringing together research and expertise across the globe to find innovative new solutions to the Food-Water- Energy Nexus challenge. Understanding this big picture is important; as it might be the case for example that outdoor water usage should increase to support the local growth of food.

- A fundamental consideration that has been overlooked is the importance of local circumstances and of local customer preferences. Social contracts remain an area where water efficiency promotion and collaborative working with local stakeholders can be further explored. For example as part of our 'Citizens for the Future' programme, we are working with local stakeholders to undertake joint action to help to develop a culture of sustainable resource use amongst young people. We believe Bristol Water's unique role at the heart of the local community combined with the region's strong sense of identity places us in a position to develop and build partnerships with a range of organisations such as local government, the Local Enterprise Partnership, housing developers, other water companies and academic institutions. Underpinning this belief is the recognition of the importance of communicating a joined-up message to customers on water efficiency activity, which links

resource efficiency with saving money and environmental benefits.

The city of Bristol is recognised as a leading technology and innovation cluster in the UK. Bristol Water operates as a pro-active member of this scene in order to access the plethora of innovations available locally that will enable our customer outcomes as well as support the company's social contract and contribution to the One City Plan.

Our recent open innovation event held in April 2019 brought together a range of stakeholders across the Bristol innovation cluster for a day of collaboration. This included talks, workshops and networking to formally launch our business incubator. Reducing waste and innovation is a key aspect of our innovation, and linked into local and regional government.

The Workshop Innovation Event

INNOVATION EVENT OUTCOME

One output from the working sessions at the event is that we are now working with Baringa Partners to research and explore how to get resource efficiency and vulnerable support services to the 20-35 age generations and how we engage with landlords in order to support this process.

This rationale for this project reflects the significant challenge which future citizens face in housing – in particular for the next generation who may not own their own home. Vulnerability moves from water affordability, towards time and place. If you are renting rather than owning your own home, it is harder to make your lifestyle resource efficient – you may not be able to change your use of water and energy. The outputs from our Youth Board confirm that this is a new area of vulnerability that requires further exploration, beyond the traditional areas considered "hard to reach" where support is currently targeted.

Our most recent research suggests it is the 18-34 age range where we have most work to do to influence reduced water consumption.[1] Much of this is to do with housing – they will be in the private rented sector for an increasingly long time. Whilst students or at home water is a hidden cost, and even when they move on in life is a relatively small cost issues. But their housing situation makes the big difference – we are keen to explore with our local stakeholders, and then beyond Bristol, what we can do to help landlords to support positive cultural changes to water use. Some of the cultural factors our research shows we will need to tackle include:

- Nearly a third surveyed (31%) admit to having run a tap in the bathroom to cover up "toilet noises" so others don't hear what they're up to. This rises to 37% for women in the region (in or surrounding Bristol) and nearly half (48%) of all 18-34 year-olds. This compares to just a fifth of over 55s;

[1] On the loo and off the record: Campaign reveals water wasting secrets

- Astonishingly, almost half (48%) of 18-34 year-olds also admit to trying to heat a bathroom by running hot water without actually standing under it. Nearly a quarter (23%) say they do this often or very often. In contrast, only 17% of over 55s say they do;
- Taken a shower because it was cold (42%) – this rises to 67% for 18-34s;
- Filling a bucket, sink or bath to cool drinks (29%) – this rises to 42% for 18-34s; and
- Running a hot shower to try and steam creases out of clothes (14%) – this rises to 28% for 18-34s.

So overall whilst we support Government setting water efficiency targets and build standards, there is much more that needs to be addressed locally. For cultural change, targets and compulsory measures will not make a significant change. Behavioural nudges and more data are not enough. We need to widen responsibility and participation in these challenges beyond water companies, and to take a positive message to the current young and next generation about their role in this issue. Targets and measures should be flexible enough to learn from addressing this challenge, rather than being seen as an outcome in itself.

The most important factor will be customer supply pipe adoption, which we strongly support. It will help address multiple societal and water sector challenges. We think alternative options to a policy shift in this direction will create more inequality in service and social provision (e.g. between owner-occupiers and those in rented accommodation). We would be keen to work with DEFRA to help build the evidence base to support this policy decision, through the work we describe in our response.

Having shared our over-arching view here, we answer the specific questions raised in this consultation in the pages overleaf. We would welcome further discussion and exploration of these topics.

Yours faithfully,

Iain McGuffog, Director of Strategy and Regulation

Building regulations for water consumption

Question 1	Bristol Water Response
Do you consider that the current approach in Building Regulations (i.e. a mandatory minimum standard for new homes but with local authorities in water stressed areas having discretion to ask for a higher standard through a Building Regulations Optional Requirement) is effective?	b. No

Bristol remains a city where over half of the housing stock is energy inefficient and because the area we serve is not water stressed; our local authorities do not have the power to ask for higher water efficiency standards. Our view is that the current building regulations lack ambition and miss the opportunity to drive change and innovation. Government should review these regulations (as well as the mechanism for enforcement) and implement far more ambitious and challenging standards to help drive a step-change in efficiency and make sustainable homes the norm rather than the exception. The reference to water stressed areas within the regulations should be removed; the current Regulations can act as a deterrent for some local authorities to promote water efficient homes and there is little incentive for local authorities to opt for the optional requirement standard.

Clear, uniform building regulations on water efficiency – and broader sustainability measures – would not be a barrier to new homes. We therefore believe all new homes should be built to a minimum standard of 100 litres per person, per day.

In addition, the definition of water stressed is flawed. It is targeted at overall supply capacity and long-term resilience. This is important but it ignores the overall carbon footprint the built in water usage has for each new build. Lowering this CO2 level should be an aspect of the goal.

We think standards for the private rented sector are as important as building regulations. Improving housing and positive encouragements to landlords to support tenants change resource efficiency habits we think is vital, given the evidence we have developed. In addition, the potential for significant retro-fit, with pilots of supply pipe adoption and lead replacement should coincide with energy efficiency improvements, such as we intend to explore through the Bristol "City Leap" initiative.

Question 2	Bristol Water Response
Do you consider that the current minimum standard of 125 litres per person per day and optional requirement of 110 litres per person per day should be changed, and if so what might be an appropriate new standard?	a. Yes

The minimum water consumption standard for new homes provides a major and fundamental opportunity for water companies to manage demand, without wider government regulation. The minimum water consumption standards however must be more ambitious. There is also little logic in having two standards because it:

- Gives a mixed message on overall water usage;
- Implies that the higher standard is sufficient; and
- Wrongly places the onus on local authorities, developers and water companies to determine whether more ambitious standards are required.

The goal should be to plan a pathway of lowering minimum standards that reflects both growing customer expectations for help with lowering water usage, the growing impact of climate change on available resources and regulatory and/or governmental expectations of a sustained lowering of PCC over time. We therefore believe all new homes should be built to a minimum standard of 100 litres per person, per day. Once this is achieved, there next needs to be greater visibility of the water efficiency status of the property, via water efficiency labelling.

Question 3
Are there any other issues relevant to using Building Regulations to set water efficiency standards that the government should consider?

It is unclear how effective the overall mechanism within the building regulations is for both checking for compliance and enforcing transgressions. There is, in this regard, an incompatibility with the Water Regulations. Water companies enforce compliance on fixtures and fittings within their remit but are not required to confirm fixtures and fittings from a water efficiency standpoint are compliant with the stated overall minimum aim.

The solution to this conundrum is to remove the reference to water stressed areas within the regulations and to ensure that houses in all areas of England and Wales are based on the same ambitious minimum standards.

Question 4	**Bristol Water Response**
To what extent do you agree or disagree that Government should work with water companies and local authorities to run partnership retrofit and behaviour change programmes in existing homes?	a. Strongly agree

The most effective way to help, advise and effect behavioural change will be through a local and regional partnership approach. However, as explained earlier we do not see homes that are owned by the occupiers as the main challenge. Even so, by this method it will also be possible to broaden the overall messaging so that water companies and water efficiency messaging is integrated into broader resource messaging that is highlighted throughout Government. This messaging is centred on the growing climate change crisis and the actions and behaviour changes we all need to make to help slow the rise and the aspects each of us can do to be more water efficiency, within this context, is therefore likely to resonate more strongly with customers.

Water efficiency labelling

Question 5	Bristol Water Response
To what extent do you agree or disagree that information on water efficiency should be displayed on water using products?	a. Strongly agree

Whilst water plays an important part in all our customers' lives we know for many there is quite a low level of understanding when it comes to quantifying total water usage. From brushing teeth to flushing a toilet, the daily and frequent activities we all do are somewhat mundane and forgettable. At the most basic level, understanding just how all of these individual acts add up and what difference a change of habit or the installation of a piece of equipment might have is a crucial first step in appreciating the benefits that water efficiency presents. But this also requires simple and visible labelling.

We need to give consumers the right information to make informed decisions. Energy labelling for example is universal. Water labelling can have similar effects if the same approach and consistent design is adopted. Customers are more likely to act in a more water efficient way if we help them understand all of the inherent benefits of water efficient behaviours. We therefore believe that information that helps customers easily and accurately understand the running costs and environmental impact of a purchasing choice are important. In this regard, where relevant, water usage should always be displayed.

This will then inform the ultimate goal, which is for consumers to understand their carbon impact as we move towards net zero. Direct use of water and wastewater services is estimated as only c2% of consumer carbon load, but it is a contributor to much larger contributions such as energy. Therefore we would caution against seeing water efficiency labelling, metering and per capita consumption targets as "silver bullet", they are very small parts of a wider goal. They provide information and choices, but may on their own do little to impact on resource efficiency, particularly as the cost of water is of little consequence to most consumers, and prices continue to fall in real terms. Note also this may have little impact on the 18-34 generation, until they become owner-occupiers.

Customers are more likely to react to/read information if what is displayed are the key attributes of the product they are viewing than if this information is hidden away in a manual or on the 'additional details' section of a website. The display will raise the profile and importance/relevance of water usage in the purchase decision. Equally, manufacturers will be conscious that the water performance of their products will be compared to competitors and sales staff will become more aware as they may be asked questions from customer looking to choose a product. We can then gain understanding of water impact on carbon, plastics etc.

Question 6	Bristol Water Response
To what extent do you agree or disagree that providing information about products' water efficiency changes peoples' purchasing behaviour and reduces their use of water?	b. Slightly agree

Customers naturally gravitate to the information options they are given and so a prominent water usage display is likely to impact on the decision making process. This information will likely be used to compare products. The extent to which information will change a purchasing decision will depend

on the a range of factors, not just water use, but a high water efficient rating could a significant contributing aspect in a decision to purchase. The granularity and visibility of the water labelling display will be a factor. Purchasing decision will only be impacted if there is a range of water usage metrics. An indirect aspect would be the impact on manufacturers to align their products not to stand out as being highly water inefficient.

The impact is uncertain, and will depend on the quality of the products and not just water efficiency labelling. For instance, if consumers end up washing clothes or flushing loos twice, the purchase decision may ultimately be counter-productive. Consumers rating the importance of water efficiency, and trusting the information provided are pre-requisites for this measure to have a significant, and lasting, impact. Stronger measures (e.g. such as taken on banning the wattage of vacuum cleaners) can force manufacturing innovation and eventually gain consumer acceptance, which makes labelling less of a priority. We would suggest the Government works with product manufacturers, and particularly innovators, to explore whether shower and washing machine market interventions would have any support in the future, rather than a focus just on water efficiency labelling.

Question 7	Bristol Water Response
To what extent do you agree or disagree that water efficiency labels should be linked to building standards and minimum standards?	b. Slightly agree

In principle we support, but as before there may be more positive options with housebuilder and manufacturers to build consumer demand, including through market intervention. On their own water efficiency labelling is unlikely to have a noticeable impact unless it is introduced alongside other measures, including product quality and information campaigns.

Water labelling is currently voluntary, not standardised and there is little visibility. We agree with the recommendation to introduce a government led mandatory label for all water using products which aligns with building regulations and minimum standards. Carbon impact labelling however may also be an option for the longer-term. A single, understandable and simple labelling scheme should be mandated for all water using products to provide clear information and help consumers make the right decisions. This is an obvious and sensible approach to take. The link between the mechanisms for attributing water efficiency labelling standards and the requirement for a water efficiency standard within building regulations and the likely lowering minimum standards should be linked.

Question 8
How else could government or water companies encourage people to use more water efficient devices/appliances at home?

One option is that the Government could incentivise or encourage the public through wide scale public media campaigns that link water efficiency, and the purchase /use of products with the actions we can all need to take to mitigate against climate change. The government departments of DEFRA and BEIS should coordinate such a campaign, to ensure there are synergies between water companies and energy companies in the messages undertaken.

Our preference is for a resource efficiency campaign that emphasises the positive local action that people can participate in their local communities, which includes the link between water efficiency,

energy efficiency, waste efficiency and climate change. Effective local campaigns, such as exist within Bristol, should be signalled as local initiatives as the cultural approach the government is helping to support.

In terms of our involvement, there is limited specific quantitative information available on the effectiveness of messaging and education around water efficiency in our supply area. In order to begin addressing this uncertainty and to support water efficiency measures across the UK water industry, we have entered into a research partnership programme with the University of the West of England, using consumption data from smart metering installed throughout the University's student accommodation portfolio - with subsequent information and communication trials to investigate the impact of messaging around water efficiency. This research programme provides the largest test-bed of its kind in Europe and will continue to develop and inform the approach we take in the future on water efficiency messaging and the impact of physical water efficiency interventions.

Metering

Question 9	Bristol Water Response
To what extent do you agree or disagree that people should pay for water according to how much they use?	b. slightly agree

We agree that, in principle, metering is the fairest way to charge for water consumption, and offers incentives to customers to reduce their consumption. However, we also recognise that for some customer types, particularly vulnerable customers, charging by meter could lead to a significant increase in their bills and create or exacerbate affordability problems. We therefore need to ensure that any plans to increase the level of metering are accompanied by appropriate support for customers who may be adversely affected.

Indeed, as per our latest research for our PR19 business plan (which also reflects our continuous engagement activities), metering remains a low priority for our customers.

	Rank
Drinking water quality compliance	1
Leakage	2
Waste disposal compliance	3
Compliance with environmental schemes	4
Mains Repairs	4
Untreated water quality in reservoirs and rivers	6
Supply interruptions	7
Customer contacts about water taste and smell	8
Treatment works performance	9
Abstraction from rivers	10
Customer contacts about water appearance	11
Customer experience	12
Unbilled properties (voids)	13
Biodiversity	14
Unplanned maintenance at works and pumping stations	15
Unplanned outage at water treatment works	16
Network resilience	17
Water consumed per person	18
Local community satisfaction	19
Low pressure	20
Meter penetration	21
Developer experience	22

We want to see water metering, however the limited evidence is that compulsion may increase consumption, increase affordability (and the need for social tariff interventions) and ultimately reduce trust in water companies, and the policy regulation. We prefer a positive, cultural approach, and we have not yet built the case for compulsory metering as an acceptable part of our toolkit. This is in part because we do not have a current or obvious future water crisis, but see our role for building resilience to make these changes through more subtle routes, as we describe through Resource West and our social contract initiatives. We encourage government to provide the option for greater compulsory metering where companies believe they have local and customer support for this change, or if the environmental or resilience impact of not doing so is clear. We prefer to retain our optional metering, change of occupancy compulsion, and regional plan contributions as our strategy for now.

Question 10	Bristol Water Response
To what extent do you agree or disagree that the amount of households charged by metered volume should be increased beyond and/or faster than what is already planned by water companies?	e. strongly disagree

We recognise that metering can be a cost effective way of reducing consumption, but without customer support the effects beyond what is currently achieved may be temporary. Despite the clear benefits, not all companies (like Bristol Water) can pursue compulsory metering. We know from continuous engagement activities that our customers on the whole do not wish to see full compulsory metering introduced and we do not have plans to introduce such a programme. Indeed, as per our latest research for our PR19 business plan (which also reflects our continuous engagement activities), metering remains a low priority for our customers.

The continued roll out of metering is an important tool for managing demand, but how and when it is done needs to be handled carefully as part of a wider approach reflecting the needs of different customers; our customers are clear that they do not support an increase in the pace of metering than what has been proposed by Bristol Water. Mandated top-down government targets for metering and/or per capita consumption would ignore the views of local customers, and put at risk the trust that we need to make the positive, cultural changes that in the long term will, we believe, reduce water consumption more.

We have already set a very aggressive target of increasing metering from c59% now to 75% by 2025. The current level due to changes in the housing market and the lower cost of water are already seeing this well behind the c66% we had wanted to reach by now. We are already taking all the promotion steps we can to encourage metering. Any further faster rates in metering can only happen with increased education, joined up information campaigns with the local authorities, local energy companies (like Bristol Energy) etc. to reinforce the positive message of metering, which is that water is a precious resource and that saving water saves the customer money and saves them energy at the same time. A more aggressive target will do nothing unless the government wishes to mandate compulsory metering, which we do not support.

Furthermore, focusing on this area only ignores a more holistic approach to improving water efficiency. A holistic approach needs to take into account customer views, action taken on water resources, the local circumstances/ regional differences and long-term planning.

Question 11
If you agree that the amount of households charged by metered volume should be increased, what do you think would be the best or most appropriate approach? Do you have suggestions for increasing metering other than what is mentioned above?

In comparison to other areas in England and Wales, Bristol Water customers are not in a 'serious water stressed' area and we do not consider increasing beyond this level is necessary within the PR19 period to achieve our water supply requirements.

Question 12
Are there any other issues we need to consider with regard to increasing metering?

A fundamental consideration that has been overlooked is the importance of local circumstances and of local customer preferences. Our starting point for water efficiency is ensuring that our customers remain supportive of the concept and of our long-term ambitions. Customer priorities and preferences should form an essential foundation to any plans to impose reductions in water consumption.

Another consideration is the ability of the population to improve their water habits of their own volition; specifically the role of people who are renters – landlords have a key role to play in this area.

Finally, we would urge government and/ or Ofwat to focus on the sharing of information on successful metering/ consumption campaigns, as opposed to focusing on mandatory targets.

Case Study: Bristol Water's 'Beat the Bill' Campaign

- The Beat the Bill pilot in 2017 resulted in 18% of participants switching to a meter which is a significant number in comparison to similar behavioural change studies in the industry.
- Some customers saved as much as £100 a year and it helped the company find several leaks on customers' supply pipes

Smart metering

Question 13	Bristol Water Response
To what extent do you support or oppose use of smart water meters instead of manual meters?	a. slightly support

In principle, we believe that smart metering offers an enhanced range of tools for communicating with customers, offering insights into behaviour as well as helping companies manage networks. We know that our customers are increasingly aware of the relationship between water usage and energy costs, due in part, to the increased access to high frequency energy usage data through smart energy meters, which allows them to monitor where there power usages costs lie.

Metering is insufficient in itself unless the information derived from the meter is made available to the consumer in a clear and useful way. It is therefore desirable for those manual water meters currently installed to have a visible read-out inside the house—which also helps customers to ascertain whether they have a leak in their supply pipe.

The duration of showers is the biggest discretionary part of water consumption for those in homes without gardens[2], particularly for those renting rather than owning their homes. Smart shower monitors for example have shown their effectiveness, and are aligned to our understanding that younger adults value information about their behaviours, even though younger age groups – who often appear more environmentally savvy – are the most wasteful.[3]

Case Study: the effect of various water efficiency measures on consumption across 10 blocks of student accommodation

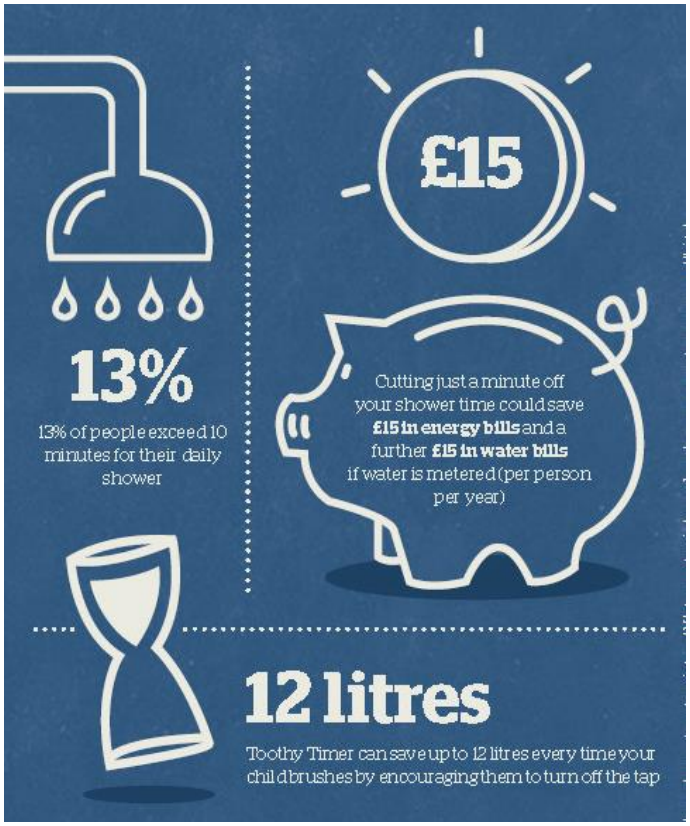
- Showering is 21% of people's consumption
- The most effective intervention was provision of a smart shower device that displays shower duration. This reduced overall consumption by 13%

[2] University of West of England
[3] On the loo and off the record: Campaign reveals water wasting secrets

Case Study: Bristol Water's latest metering messaging research - results show that in all cases 18-34 year olds waste the most water

- Taken a shower because it was cold (42%) – this rises to 67% for 18-34s
- Filling a bucket, sink or bath to cool drinks (29%) – this rises to 42% for 18-34s
- Running a hot shower to try and steam creases out of clothes (14%) – this rises to 28% for 18-34s
- Flushing a dead pet down the toilet (11%) – this rises to 22%for 18-34s
- Disposing of illegal or immoral things people are scared of just throwing away (9%) – this rises to 18% for 18-34s

From our own analysis, significant improvements can be made if people have visible information about their bathrooms habits (particularly their showering habits).



However, any smart metering policy must reflect the views of the local population and we would not support top-down imposed smart metering targets. The experience in the energy sector highlights the problems of such an approach. There is a place for compulsory smart metering beyond the short-term but unless we have the customers and the public on our side, compulsory smart metering may have a negative impact and backfire.

Incentives

Question 14	Bristol Water Response
To what extent do you support or oppose use of incentives to encourage customers to use less water?	a. strongly support

Incentives should be seen as one tool in an armoury of engagement options. It is clear that some customers respond better to incentives than to other tactics.

The key question however, which has been overlooked by this consultation, is incentives for whom? At the household level, there is already a natural incentive through our billing; customers who are metered who use less water receive a cheaper bill.

There should be incentives for manufacturers and innovators, as opposed to water company customers, to reduce water consumption rates for household and commercial water using appliances.

There should also be incentives for landlords to upgrade their properties; incentives could perhaps be applied if water efficiency produces lead to, for example, cheaper insurance.

Question 15
What incentives could water companies use to reduce customer use of water?

At the household level, there is already a natural incentive through our billing; customers who are metered who use less water receive a cheaper bill.

We are currently in the early stages of developing a campaign that focuses on landlords and the incentives that could be put in place to encourage private renters (particularly the younger age group) to use less water in such properties. The campaign is looking at the barriers young renters face i.e. where they have little or no control over what retrofitting or water efficiency appliances can be improved because of the role of the landlord.

We would be happy to discuss this campaign in greater detail with DEFRA and how such a campaign could be rolled-out across the country.

Rainwater harvesting and water reuse

Question 16	Bristol Water Response
To what extent do you support or oppose the use of RWH and GWR schemes at individual level?	b. slightly support

The concept of both RWH & GWR are grounded in good sense. However, the practicalities associated with their implementation, including overall cost/benefit assessment, as well as issues with the potential contravention of water regulations, leads us to having a cautious approach to both.

We would suggest incentives to developers for new builds, so that this can then also consider retro-fit. This evidence base will help convert our support to "strongly support". We have suggested to Ofwat this may be a useful topic for an innovation project across the sector.

Question 17	Bristol Water Response
To what extent do you support or oppose the use of RWH and GWR schemes at community scale?	b. slightly support

See above (question 16).

Question 18
How can government or water companies most effectively encourage people to reuse water in their homes?

This could be achieved via public awareness campaigns, such as those that tie the use and misuse of water into the overall movement and those that are about community-based actions focussed around the circular economy ideal of: reuse, recycle and to reduce waste. There must also be a move away from water as a single issue 'call to action' to a strategy that resonates with customers as part of the range of actions we are all increasingly trying to take to help lower our individual impact on climate change.

Supply pipe leakage

Question 19
Do you have any evidence/views/comments on the potential impacts on water bills for various customers and geographical regions should the management of supply pipes be transferred to water companies?

We do not have such information as to the cost, but Water UK has recently commissioned research to assess views amongst companies on supply pipe ownership.

There was also a previous UKWIR/ Tynemarch review of the issues related to the adoption of supply pipes, which should be considered.[4]

Question 20
Of the alternative options above, which is your preferred? Please explain why or if you have other ideas.

Our view is that none of the alternative options is a sufficient alternative to a Government policy as to whether or not water companies should adopt customer supply pipes. This is analogous to the decisions concerned with private sewer. We agree that the current arrangements for management of supply pipes are not sustainable in the long term.

A mandatory code of practice would not allow for sufficient flexibility for pilots that will be needed to inform the options and approaches for full adoption. Smart metering on its own is at the boundary, so does not resolve the challenge where a customer in vulnerable circumstances cannot afford to replace their supply pipe – rather than creating a new cross-subsidy customer support for full adoption may be preferred. Requiring water companies to assist with maintenance and repair may similarly not deal with the circumstances on the ground where vulnerable customer protection is involved. The challenge for instance where there is a meter and the property is privately or socially rented occurs. We were unsure what a public relations exercise would address – there is clarity on responsibility, the issue is largely for those on a meter who are not owner occupiers.

At present, our household customers receive a free leakage detection and repair service for the first repair under the Leak-stop programme (second repairs are subsidised). We operate an active leakage control (ALC) strategy across the entire distribution network. Effective continued maintenance of this strategy is however impeded by the ownership of supply pipes, to which the transfer of ownership would help to address. Other than co-ordination as housing stock improves, and requirements for lead replacement increase, this is the most active policy in the industry, and is popular with customers.

The scope of the responsibility needs to be considered carefully and clearly defined. For any of the options up to and including adoption, there would need to be a large study to identify what would create an equitable and fair definition of ownership. In the absence of this the current voluntary approach remains the only option. The cost of a study to establish standardised definitions and overcome known issues, such as joint supply pipes, powers of entry, household versus non-household ownership, length of pipes and private networks (such as farms) location exclusions etc. for any further measures are such that we believe the end objection of supply pipe adoption as the

[4] CU-01 – Supply Pipes Adoption Issues (ref: J0831\WP03)

ultimate policy goal would be required. The challenges and social issues are significant, so require a clear Government policy lead to ensure the accountability for the ultimate decision is set out upfront. Otherwise the most efficient policy is the status quo, supplemented by the water industry developing partnerships with local authorities and social housing providers as they improve their housing stock.

As an example as to why the other measures are not sufficient, there are a number of other consequential changes that would need to accompany any transfer of ownership, which ultimately have to be addressed if the alternative options were to make any traction in any case. These include:

1. Requirement to ensure that any legislation provides the necessary authority to enter private/3rd party land to effect a repair/replacement of the supply pipe.
2. Currently the law requires stop-taps to be installed at the property boundary (i.e. where liability between the customer and company changes). In the event of adoption of supply pipes consideration needs to be given to whether this requirement should remain.
3. For meters situated at the property boundary, consideration needs to be given for how leakage on Company pipework downstream of the meter should be treated. Would the meter location also have to move because of the impact on customer charging, increasing the adoption cost significantly? Or do we accept some degree of unfairness because of the wider benefits of the policy decision?
4. If pipework within a building is the responsibility of a water company, the extent of any consequential liability it has for damage from the pipe needs to be considered.
5. Shared supply pipes present increased challenges owing to their potential complexity, and the extent of their historical problems e.g. poor pressure/inadequate supply for customers. The extent and sharing of liability for shared supply pipes needs to be considered carefully. The impact on customers' use of their own property then becomes apparent – do customers have to then pay for the consequential impacts of damaging company pipes on their own property?
6. The recognition and impact of an increase in customer contact, in particular resulting from increased customer expectation once they are no longer responsible for the supply pipe. This could lead to a step increase in costs in the first few years and such costs need to be considered. However, private sewer adoption suggests that this can be managed, and may prove in practice not to be material, as long as there is not an immediate expectation of improvement and that all customer side issues will be instantly resolvable.

Question 21
What other options are available to reduce leakage from customer supply pipes?

We have no further comments to add.

Communications and behaviour change

Question 22	Bristol Water Response
What are the main barriers to changing behaviours to reduce personal water use? Please rank your top three options by order of importance.	i. other – cultural – water use cannot be separated from other things perceived as resource waste which are due to pressures on society (e.g. time vulnerability for families juggling work and childcare, those in short term assured tenancies etc.). j. other - perception (many people do not believe they use water wastefully or that any change they might make would be effective). This results in: f. difficulty in changing habits – in particular because individuals reasons for water use vary and a generic statement that all individuals should reduce their personal water use is damaging – it is the unnecessary waste of water, not the level of use itself for an individual that must be addressed. A general or negative message about reducing water use will socially exclude those for whom high use may be necessary, e.g. for medical or cultural reasons, or for other vulnerability issues such as the quality of rented housing stock. We strongly urge DEFRA to show the leadership by changing this narrative, and those organisations who do not reflect this reality for many consumers in their campaigns for reduced consumption may be having counter-productive impact according to our insight and research. We explain this context further below. b. insufficient information about personal water usage i.e. behaviour change is the wrong framing of the problem. This will have very little impact on water use unless lifestyles and personal circumstances / wellbeing change to support reduced personal water use.

One challenge for companies seeking to carry out specific water efficiency programmes lies in the uncertainty of its effect. Engagement, education and provision of free equipment places the responsibility for implementation with the customer, and uptake is understandably variable as a result. Our customer responses indicate that some people who are fully engaged with the principles of water-saving can and do make very significant changes to their water use. But others (such as those in rented accommodation, as well as the perceptions of Generations Y and Z, as evidence from

studies suggests that they are less likely to be engaged in managing their water use) may remain difficult to engage.[5]

Case Study: Baringa Partners research into customer perceptions of water shortages

- low engagement in 18-34 year olds, but highest interest in information about water use
- there is the opportunity for targeted engagement by demographic, particularly the 18-34 age group and those out of work who say they have the least knowledge of how to save water (or perhaps have the knowledge, but are not in a position to act on it if they are not the homeowner).

Description	18-34	25-54	55+	Comments
Unconcerned about water shortages	**71%**	75%	78%	18-34 are least concerned.
Know how to decrease water usage	**73%**	84%	87%	18-34 say they know the least.
Living with lots of people would prevent me reducing water use	**22%**	14%	12%	18-34 live in larger households.
Relative ranking of need to encourage less water use through in-home information	**2.4**	2.5	2.6	18-34 rank this more highly than other age groups (1-4 scale, 1 being most important)
Interest in understanding how much water used by each home appliance	**61%**	56%	56%	18-34 most interested

Any messaging and/or initiatives designed to encourage citizens to be more sustainable needs to accept lowering personal water usage as an important aspect of this call to action. Water is a precious resource which has considerable environmental cost associated with the entire process needed in delivering it to a home. The reduction in personal use has a positive environmental impact and contributes to reduced carbon dioxide production, but this is not necessarily understood.

A significant area of water efficiency, where reductions in demand can be made without compromising customers' lifestyles or livelihoods, is in helping people to change their water using behaviour. But there is difficulty in changing habits. This remains a less well understood area of activity so we are working in partnership with the University of West England to research how to use new data and data analytics to improve our approaches, supporting our customers' objectives around sustainable, resilient and affordable services. We have already instigated the creation of the Resource West partnership with Bristol City Council, University of West of England (UWE) and other organisations to enhance the promotion of water efficiency in our supply area, and we will also work with neighbouring water companies through the West Country Water Resources group on water efficiency promotion.

[5] How much do people really care about water shortages?

Given the uncertainty which is likely to remain around the effect of implementing water efficiency measures through a "promote" approach, we believe that more direct intervention may be appropriate in some circumstances, through installation of water-efficient equipment and through statutory changes to building regulations. This offers the potential for water efficient fittings such as flow regulators and cistern displacement devices to be installed in homes in order to save water and reduce domestic water bills, and we continue to work with social housing landlords and energy suppliers to develop this work.

Our experience to date does however indicate that this approach, whilst effective, is not always straightforward. Social housing landlords have a range of very pressing responsibilities and can struggle to engage with water efficiency schemes, thus requiring significant input and assistance from the water company. We therefore feel that installation programmes - which are the most likely to provide a significant reduction in water use - are a high-cost approach and the full cost needs to be recognised in the funding provided to water companies to be reviewed if this approach is to succeed.

Question 23	Bristol Water Response
Which organisation(s) (if any) should communicate about how to reduce personal water use? Please select all that apply.	a. water companies b. government c. local government d. environmental non-governmental organisations, for example environmental charities e. other – schools f. other – energy companies g. other – retailers h. other – landlords

We believe that all of the above have some level of responsibility. Whether it is specifically about water or wrapped around the broader messaging of using less resources and recycling more. The aim for all must be to help people understand that reducing personal water usage will have a positive environmental impact.

Water Companies

Every company within the water industry is trying to help customers with water efficiency. Much of the overall work is by the nature of its intent and targeting quite similar and many actions are mirrored across companies. But, there are also significant examples of variations in tactics, messaging and actions as well as variances in research to be found in all supply areas. We are keen to learn from others and share our insights where we can help. As an industry, water efficiency is perhaps one of the best examples of how this more collegiate approach can offer new opportunities and insights we as individual companies might miss. Whilst our unquestioned priority will always be our customers, in many circumstances sharing our collective knowledge and understanding is not only likely to help all of us achieve better results that benefit our customers, but good ideas that are shared will have an overall knock-on beneficial effect for the environment in general.

We recognise we need to help our customers to value water and use it wisely. If customers can improve their water efficiency, this not only helps to reduce water demand (and therefore the impact on the environment), but can also help them to save money on their water bill. Our

household customers have indicated a strong preference for support on water efficiency and we understand that customers primarily look to us for advice and assistance to help achieve these savings. At the same time, our customers have also been clear that they are opposed to universal metering and instead prefer us to focus our efforts on reducing leakage. Our continuing water efficiency programme will help to achieve this balance and will focus on eight key areas:

- Continue promotion of water metering with provision of targeted water efficiency advice
- Continue provision of free water efficiency equipment
- Continue provision of bespoke water efficiency calculations (through our website) to empower customers to choose the most effective way to save water and save money
- Develop new partnerships with stakeholders across our supply area to create new and innovative ways to help customers become more resource efficient
- Develop our evidence base and research programme on the most effective water efficiency measures
- Continue and increase our schools education programme on water efficiency and its links to environmental sustainability
- Work within the industry to share expertise and knowledge and lead development of initiatives like the water label to help customers understand water usage when buying equipment
- Work with retailers to help them help their non-household customers use water efficiently.

Other – Schools

Schools should also be included in the organisations who communicate about how to reduce personal water use. The educational system is crucial in ingraining water efficient behaviour patterns in the minds of consumers. We continue to increase our schools education programme on water efficiency and its links to environmental sustainability.

Our award winning AMP6 programmes “Trout and About” and “Spawn to be Wild” targeted primary schools in socially deprived areas and emphasised the link between the efficient use of water and the environment. For our AMP 7 plans will build on this work as well as developing a more comprehensive education offering based on increasing interaction and building a wide-ranging digital resource base that offers teachers more tools and engages with students at all stages of the curriculum.

Other – Energy Companies

Customers are increasingly aware of the relationship between water usage and energy costs, due in part, to the increased access to high frequency energy usage data through smart energy meters which allows them to monitor where there power usages costs lie. We realise that customers are more likely to act in a more water efficient way if we help them understand all of the inherent benefits of water efficient behaviours and we will therefore highlight the energy link as an additional

and compelling reason to use water wisely. But energy companies also have a role to play in explaining these links.

We are currently working with a local energy company and local waste company (Bristol Energy and Bristol Waste) to develop a joined up, joint education campaign on resource efficiency.

Other – Retailers

Our water efficiency programme is primarily focused on household customers following the advent of non-household retail competition in April 2017. This activity has now become one of the main areas of focus for the new non-household water retailers and has therefore ceased to be the direct responsibility of water wholesalers such as Bristol Water. It is early days in the development of the retail market and consequently our focus has been on building up a good relationship with the new retailers. However, we want to help encourage water efficient practices to all users of the water we supply and we are eager to support all the retailers in their efforts to help their customers save water.

We have a good working relationship with each retailer in the market and provide support and information both in response to their requests and through ideas generated internally where we feel we can relay useful help and advice. A good example of this was a waste efficiency poster campaign we designed and produced that allowed them to brand and use as they felt necessary for their customers. We also provide general water efficiency advice via our web site and retailer portal which we will continue to develop.

Other – Landlords

It is clear from our research (referenced in this paper) that landlords will play a pivotal role in the success of this area, whether that be in terms of education, retrofitting etc. We would welcome the opportunity to meet with DEFRA to explore how we can work together on this potentially ground-breaking area of work.

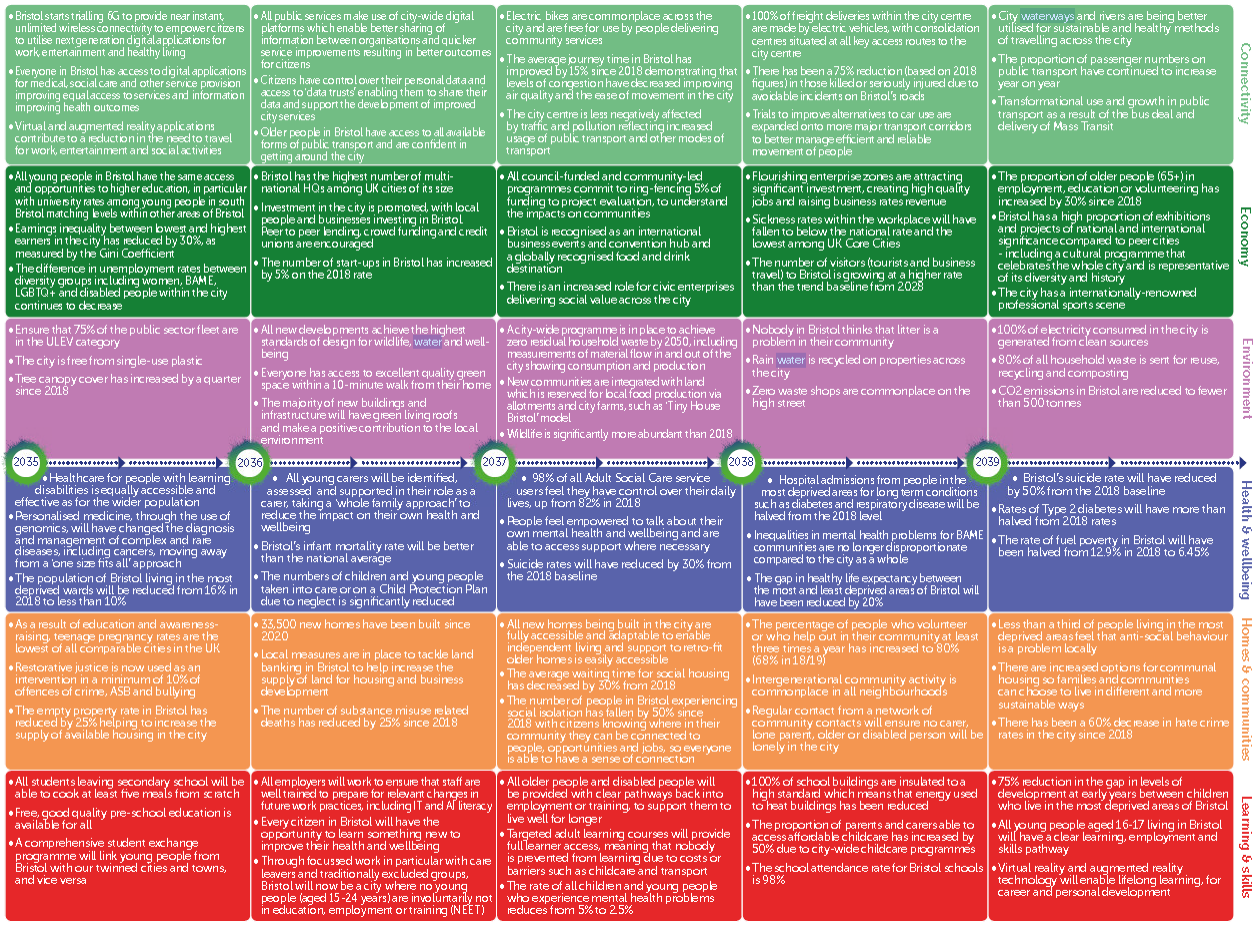
Question 24
If there are any further matters that you would like to raise or any further information that you would like to provide in relation to measures to reduce personal water use, please give details here.

The importance of regional partnerships has been overlooked by this consultation. We have already instigated the creation of the Resource West partnership with Bristol City Council, University of West of England (UWE) and other organisations to enhance the promotion of water efficiency in our supply area, and we will also work with neighbouring water companies through the West Country Water Resources group on water efficiency promotion.

We believe Bristol Water's unique role at the heart of the local community combined with the region's strong sense of identity places us in a position to develop and build partnership with a range of organisations such as local government, the Local Enterprise Partnership, housing developers, other water companies and academic institutions. Underpinning this belief is the recognition of the importance of communicating a joined-up message to customers on water efficiency activity, which links resource efficiency with saving money and environmental benefits. Bristol Water was for example one of the first companies to back the City to Sea campaign with the Refill Bristol campaign back in 2015, which not only promotes water efficiency and precious water, but also reduces the impact of plastic water bottles at the same time.

Given the close geographic match between the Bristol Water supply area and the West of England economic area, we have also been able to work closely with the West of England Combined Authority (WECA) to begin exploring opportunities to promote the principles of environmentally sustainable economic growth. The work on developing this initiative beyond the concept stage has already begun with Bristol Waste, Bristol Energy, the University of the West of England and the West of England Combined Authority and Wessex Water joining us in the formation of a more formal partnership and the subsequent creation of our umbrella organisation 'Resource West' following a workshop with interested members facilitated by and held at the Knowle West Media Centre. This new organisation will aim to help create resilient communities and businesses by bringing together organisations already working on water, waste and energy efficiency, finding the synergies between key issues to increase the opportunity for overall resource efficiency and develop the West of England as a national hub for green growth.

As another example of regional partnerships, we are an active member of the 'One City Approach' and the One City Plan.[6] This brings together a huge range of public, private, voluntary and third sector partners within Bristol. This plan includes specific commitments to water efficiency.



Finally, social contracts remain an area where water efficiency promotion can be further explored. Our social contract social contract acts as a framework that will help us have a positive impact on the

[6] The Once City Approach

wellbeing of society.[7] In particular, the adoption of social contracts can be a major contributor to co-ordinating cross-sector water efficiency messages that can effectively support change in consumer behaviour. There are a number of initiatives we are currently developing as part of our social contract that will benefit water efficiency, including:

[7] Bristol Water For All

Academic Partnerships

- Aim or programme: Linking academic research to business challenges and experience to tackle key issues such as resource efficiency. Providing opportunities for learning through MSc projects and other partnerships.
- Benefits from our social contract approach to water efficiency: working with universities provides us with a particular opportunity to engage with young adults who are either becoming or about to become water customers. This principle of hydrocitizenship enables us to build large-scale links with this important demographic, enabling us to learn about the changes in behaviour that drive water consumption patterns and also the most effective ways for us to engage with this important demographic through social norming approaches, new communications methods and gamification.

Community Engagement

- Aim or programme: Working collaboratively with community groups to address issues that impact the well-being of the community.
- Benefits from our social contract to water efficiency: we have been working with local community groups to develop local campaigns on the environmental and social benefits of water efficiency, with successes such as the festival Water Bar, our ten Bristol city centre drinking water fountains and the Refill campaign.

Education

- Aim or programme: Inspiring current and future customers and providing opportunities for customers and staff to develop skills and experience. Influencing resource efficiency behaviour to bill-payers through harnessing the power of the next generation.
- Benefits from our social contract approach to water efficiency: we are working with local schools to develop educational programmes that go beyond traditional water efficiency and environmental awareness initiatives, to develop our partnership with education organisations in a way that creates greater social engagement with current and future "water citizens", harnessing the power of the next generation.

Resource West

- Aim or programme: Working with local partners to deliver a joined up approach to resource efficiency across different sectors – combining resources and amplifying messages to customers.
- Benefits from our social contract approach to water efficiency: this brings together the key environmental stakeholders in the West of England region. We have launched and developed a partnership that includes Bristol City Council, Bristol Waste, Bristol Green Capital Partnership, Bristol Energy, West of England Combined Authority and the University of the West of England, to develop new programmes on resource efficiency. One initiative included in this programme is the "Waste Nothing Homes" - a collaborative partnership with Bristol Waste working with fifty homes in Bristol to identify the changes we all need to make in order to reduce our waste footprint to zero. In autumn 2019 we will install smart meters in all these homes - all of whom engage strongly with a social media community around the project - to bring the next stage of resource efficiency to life and then use this community as a "trusted third party" to promote the principle of metering to the wider community we serve. The Resource West approach enables us to tap more quickly into initiatives such the Bristol Smart Cities programme, by enabling us to create meaningful partnerships between key players in the region we serve.

Call for evidence

Question	Bristol Water Response
25. Please provide evidence regarding what reduction in personal water use could be made by 2050 by using the following measures, plus any others you believe to be relevant: a. More ambitious water efficiency standards in building regulations for new homes. The government is interested in understanding the impacts of any changes to standards, including on housing development, the costs of meeting the current standard and costs of meeting higher standards. Please provide any evidence which you have on impacts. Retrofitting existing homes. Defra is keen to understand what level of retrofitting would be needed should different levels of water efficiency standards in building regulations for new homes be implemented. We are also interested in views of how this could be achieved. b. Introduction of a mandatory, government-led water efficiency label linked to building standards and fixtures and fittings. c. Changing water fittings regulations to improve water efficiency of homes. Defra is keen to understand what changes would be required. d. Options that deliver an increase in metering penetration. e. More widespread rainwater harvesting and water reuse schemes. f. The use of water company incentives. g. Information provision to customers about water saving measures they can undertake and change to a water-saving culture.	Generally, please see responses to other questions. We do have one additional point to raise; the use of water company incentives should not be considered as the primary regulatory tool on water efficiency. Customers are suspicious of strong rewards and penalties in this area, because it changes the relationship to one with a financial rather than a “value of the water supply” motive. Legitimacy is put at risk by compulsory targets with strong financial incentives, although the point at which “strong” becomes “too strong” for the trust in the customer relationship is inevitably uncertain.