Response to Consultation on Reducing Personal Water Use

Background to Water UK

Water UK represents all major water and wastewater service providers in England, Scotland, Wales and Northern Ireland. Our vision is of a water sector that provides customers and communities with world-class services and enhances the UK's quality of life.

We welcome the opportunity to respond to this consultation on behalf of water companies in England.

Policy Position

The water industry strongly supports the need to reduce personal water consumption as part of an overall approach to increasing resilience in the water environment. Water is a precious and limited resource that is under pressure particularly from increasing population, but also from climate change and the need to meet society's increased expectations that those drawing water from the environment will protect its ecology.

Water companies in England are already projecting (through their Water Resource Management Plans) sufficient action for meeting the National Infrastructure Commission's recommended ambition on demand of around ~118L/person/day. However, because much of that effort involves changes to behaviour – which is inherently difficult to predict and get right – we support going even further than that to protect water supplies.

Improving water efficiency will need a number of groups to play their part, so we welcome the ambition and clarity afforded by Government's ambition to set a clear national target, which will help set a national direction.

To deliver that ambition, our evidence demonstrates that the best approach is by:

- **setting a target at a *national level* and on *Government*.** Only Government can ensure that all those with the ability to act on water demand have the right incentives in place. By setting a target at the Government level, we are able to use all possible levers for achieving reductions in a way that makes most (and most cost effective) sense, setting the overall direction for water companies, manufacturers, Government departments, developers, charities, regulators and others
- **setting a target on the basis of evidence and an impact assessment**, at a level that ensures that our approach to balancing supply and demand is (i) cost effective and (ii) accounts sufficiently for uncertainty and risk.
- ensuring all of Government plays its part. A fe**asible target level could be set at a lower level (~100L/person/day national average by 2050) if Government acts robustly** (including through minimum products standards and labelling). However, the analysis shows that, in the absence of robust Government action, a target cannot be set at a level below about 110-115L/person/day if it is to remain feasible due to the relatively high probability that interventions fail to deliver as expected (for example, despite significant existing water efficiency programmes, PCC has actually increased over the last few years)
- **taking some 'no regrets' choices now**, especially where savings accrue slowly over time. As well as product labelling and standards, water efficiency must be hard-wired into new homes to build market scale as well as future-proof homeowners

- companies continuing to play their part. This will need to involve a **significant expansion of metering over coming decades**, with a sharply increasing 'smart' proportion of new meters. Our research shows that over coming decades, a progressive metering approach, supported by voluntary switching, could make a very significant difference
- ensuring that any regulatory translation of the target to water companies **accounts for regional differences**. Different areas have varied water use characteristics, physical building stock, and starting points
- **tackling the critical policy gap around 'non household' users** like businesses. Up to about a quarter of water is used by these organisations, but existing incentives and regulations are insufficient for dealing with this important component of demand

Underpinning Analysis

In response to Government's intention to set a national PCC target, Water UK commissioned a consortium led by Artesia Consulting to analyse the feasibility, costs and benefits, and implications of different levels of PCC ambition. This looked at 18 different kinds of action we, Government, or others could take in order to meet a given ambition, and the implications. Its findings, which have been peer reviewed by WRc and draw where possible on Treasury 'green book' assumptions, are that:

1. Based on the latest Water Resource Management Plans (WRMPs), companies roughly achieve the NIC's recommended national average of 118L/person/day by 2050 without additional action. This saves around 1,400 million litres per day.

2. Ambition should (and could) stretch *beyond* the NIC's recommendation, but this is massively enabled by Government action. To produce truly enduring demand reduction needs a multi-dimensional approach with a wide range of stakeholders playing their roles. However, national policy changes are much more powerful than actions available to companies alone. For example, a Government-backed scheme on product efficiency labels, plus minimum standards, returns a very high £64 in benefit for every £1 in cost.

3. Government actions look attractive regardless of whether prioritising by cost effectiveness, or marginal cost, or achievable savings. In particular, it is not possible to cost effectively reduce average PCC below 100L/person/day without Government action.

4. The analysis suggests that a *maximum* technical reduction (central case) would be to ~85L/person/day by 2050 (equivalent to a ~2,300 million litres per day). This relies on mandatory water labelling; product standards; building regulation changes; and smart metering alongside voluntary switching[1]. This scenario has a negative cost/benefit of £391million based on water efficiency benefits alone (but excluding any leakage detection and meter-reading benefits). For comparison, approaching those levels of demand reduction without support from Government regulation has an equivalent cost/benefit of -£3.34billion and doubles the cost of each litre saved.

5. The uncertainty range around central-case estimates is very large and asymmetric (biased towards under rather than overachievement); even the most comprehensive Government/company programmes have uncertainty ranges that continue to stretch well above 100L.

[1] This assumes installation of smart meters in 63% of homes by 2050, with customers encouraged (but not required) to switch to a meter using bill comparisons over a two-year period. It assumes costs for enhanced customer support and some safeguards for vulnerable and low-income customers. It assumes retrofitting of existing meters as 'smart'.

6. Given that uncertainty, it is vital we establish national systems for tracking and responding to any underdelivery of efficiency improvements in a region, so that there is enough time to use alternatives to maintain supply/demand balancing.

Response to Consultation Questions

Part 1. Building regulations for water consumption

1. 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?

a. Yes
b. **No**
c. No view

Please give reasons to support your answer: Whilst standards are set within the Buildings Regulations, we consider that they are less than effective for a number of reasons:

1) There is no recognised methodology for measuring how the standard has been achieved, nor does it cover the full envelope of the property e.g. outside taps;
2) The Regulations are viewed as guidance rather than mandatory requirements with no process to audit and confirm standards are met. This means that in practice they are ineffective. Consistency in approach is needed across local authorities;
3) On completion of the building phase there is little or no visibility of the water efficiency status of the property or awareness that subsequent changes to plumbing or appliances will affect this;
4) Improvements need to be made to the method by which compliance with the regulations is assessed. We would support a fittings-based method as the calculator method is based on assumptions on the behaviour of subsequent property owners that are not under the builder's control,

2. 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**
b. No
c. No view

Please give reasons to support your answer: Since the Regulations came into force the general expectations on per capita consumption have changed. The Regulations should reflect that all new builds have 'A' rated fittings. Existing standards are not consistent with reducing demand consistent with a risk-based, cost-effective approach to managing a finite resource. A level closer to 100L would be much more consistent with the analysis of the National Infrastructure Commission and other bodies.

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

Please give reasons to support your answer: The extent to which Building Regulations can be used to drive water efficiency in non-household or commercial is unclear. Whilst non-household properties can not have a specific PCC target in the same way that domestic premises can (due to changing populations and water use that will tend not to include large water users such as clothes

washing or showering for example) it should be stipulated that new development commercial premises should demonstrate the installation of water efficient products. This would clearly need to be accompanied by a national mandatory water efficiency labelling approach.

4. 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**
b. Slightly agree
c. Neither agree nor disagree
d. Slightly disagree
e. Strongly disagree
f. Don't know

Please explain your answer: Meeting the ambition for reduction to PCC needs by its very nature to be a societal approach with no one organisation able to stimulate change on its own. Government leadership is critical in driving behaviour change. Homeowners need the tools to make informed decisions on the benefits of including water efficiency. However, as we will explore in later responses the situation is complicated by a combination of lack of incentive and lack of information.

We should be clear, though, about the cost and potential for these kinds of intervention compared with others. Targeted activity of this kind is important and necessary, but will only produce part of the demand reductions we need to see. For example, our analysis shows that putting huge effort into targeted audits over coming decades (beyond the programmes already in companies' plans) could generate a further ~18L per person of saving, but at significant marginal cost, while a significant, national, Government-led campaign might deliver a further 4L (though could also potentially underpin other efforts, for example by marketing and explaining a labelling scheme).

Part 2. Water efficiency labelling

5. To what extent do you agree or disagree that information on water efficiency should be displayed on water using products?

a. **Strongly agree**
b. Slightly agree
c. Neither agree nor disagree
d. Slightly disagree
e. Strongly disagree
f. Don't know

Please explain your answer: This is the single most important test of whether Government is serious about water efficiency. Coupled with product standards, it is by far the most cost effective and volume-saving intervention – while also empowering the consumer and promoting innovation.

By introducing mandatory schemes Government will ensure that lessons from those voluntary schemes that have been used, with limited success, in the UK to date are taken on board. By putting visual labels on products will enable consumers and developers the opportunity to make the right decision at the time of purchase. Clearly any move to mandatory labelling would need to be accompanied by an awareness campaign.

Research carried out by EST has shown how mandatory labelling can be effective based on experiences predominantly in Australia but also in the USA.

6. 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?

a. **Strongly agree**
b. Slightly agree
c. Neither agree nor disagree
d. Slightly disagree
e. Strongly disagree
f. Don't know

Please explain your answer: In general water consumers have very little visibility of their water consumption. By providing information on products at the point of purchase will go some way to raising this awareness. However, benefit will also be driven from improving the way in which customers have access to information on their water consumption post-installation, for example through smart meters or clear information from their water company.

7. To what extent do you agree or disagree that water efficiency labels should be linked to building standards and minimum standards?

a. **Strongly agree**
b. Slightly agree
c. Neither agree nor disagree
d. Slightly disagree
e. Strongly disagree
f. Don't know

Please explain your answer: Effective Regulations are an essential tool in delivering further reductions in PCC. Our research concludes that: *"The role of tightening building regulations and water supply fittings regulations is particularly important. Without changing these regulations, it is not possible to find a way of cost effectively reducing household consumption below 100l/h/d. On their own (without any labelling initiative), changes to these regulations alone would reduce consumption by 14 l/h/d by 2065, equivalent to a volume of 1,052 Ml/d. They would reduce the marginal cost of a water labelling scheme by over fifty percent to approximately £7/Ml."*

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

Please explain your answer: Government, for example, can introduce incentives or encourage (or mandate) campaigns to raise overall public awareness. Water companies can ensure that they benchmark approaches against international experience and case studies and use their programme of roadshows and community outreach to raise awareness.

Part 3. Metering

9. To what extent do you agree or disagree that people should pay for water according to how much they use?

a. Strongly agree
b. **Slightly agree**
c. Neither agree nor disagree
d. Slightly disagree
e. Strongly disagree
f. Don't know

Please explain why: Paying for water according to how much is used is generally recognised to be the fairest way to do so and has been demonstrated to result in sustainable reductions in water use, while also providing greater visibility of water consumption within individual homes. Paying for water used on a volumetric basis is an inherently fair approach and common with other utilities and situations where unlimited demand just cannot be met.

However, in some cases the change from existing systems based on rateable value to a volumetric approach could make a water bill more expensive. This may partly be mitigated through the industr's strong commitments to managing the affordability of its services; companies will support customers through a range of measures (including a doubling of the number of companies helped with bills over the next five years) to ensure access to this essential service.

10. 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?

a. Strongly agree
b. **Slightly agree**
c. Neither agree nor disagree
d. Slightly disagree
e. Strongly disagree
f. Don't know

Please explain why: Domestic property metering can have significant benefits to both water customers and water companies. In addition to facilitating information on water consumption the use of meters can reduce manual meter reading costs, improve bill accuracy and help locate and identify leaks (both in the network and on the customer side). However, water metering is a complex issue and whilst we support the ability of customers to make decisions based on the visibility of the amount of water they use and see a reduction in the amount they pay as a result, we acknowledge that in some areas the cost-benefits of universal metering mean it's not necessarily an effective solution. The need for metering varies by region and it's not feasible to make a national mandate without due consideration of these variances.

Where full metering is not an option attention should be focussed on other interventions and enhanced communication together with promotion of optional meter installations. Government should address the barriers that exist that prevent companies that, in consultation with its customers, wish to develop a universal metering programme, for example by decoupling requirements to be in water stressed status from decisions on whether to meter or not.

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?

Please explain your answer: Water companies already have plans in place through their WRMPs to increase the proportion of metered properties in their areas. However, the pace and extent of this is driven by need. Any change from this approach would need to be proposed by Government and aligned with the Price Review cycle so that the costs of doing so can be taken account of.

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

Please explain your answer: Consideration of any metering programme needs to be given to affordability particularly for the financially vulnerable, particulary where the installation of meters has an impact on the customer's bill.

Part 4. Smart metering

13. To what extent do you support or oppose use of smart water meters instead of manual meters?

a. **Strongly support**
b. Slightly support
c. Neither support nor oppose
d. Slightly oppose
e. Strongly oppose

Please explain why: The consultation is not clear on its definition of smart meters. Public perception of smart meters, driven by the experience in energy, is of systems that provide visible, in-home information displays. This may be ambitious in water and smart metering in this context is more related to improving communication of data back to the water company either directly or by a form of automated or drive-by meter reading systems.

As the consultation notes, there are benefits to smart metering, and near 'real time' information, as being fundamentally important in;

Empowering customers to understand their water usage.

- Enabling water companies to communicate effectively with customers regarding water efficiency and the financial and environmental benefits associated with this.
- Facilitating the development of new targeted behavioural change approaches.
- Enabling significant savings to be made with regard to leakage and 'plumbing losses'.
- Supporting the mitigation of peak demand in times of drought and water stress.

And importantly,

- Underpinning all the interventions being considered (water labelling, changes to building regulations), by allowing continuous measurement and validation of outcomes.

Some water companies are already starting to trial smart meters; several water companies included proposals to go further in their PR19 Business Plans, and we expect the use of smart meters in the water industry over the coming years to increase.

However, as this happens, and in particular if a national programme of smart metering is contemplated, it will be important that lessons are learnt from the problematic roll-out of smart metering in the energy sector[2].

Artesia, in their report for Water UK, note that by combining smart metering and mandatory water labelling a deep reduction in PCC could be achieved. However, this comes with a negative cost-benefit, largely due to the installation and maintenance costs of the meters. Other interventions (e.g. water goods labelling coupled with tightening of Building and Fittings Regulations) will be more cost effective, although not achieve the same level of reduction.

The case for smart metering however is wider than PCC reduction and other benefits – such as increasing leak detection ability, providing a platform for deeper, targeted customer engagement and increasing bill accuracy – may be additional triggers to support their use.

[2] See for example https://www.nao.org.uk/report/rolling-out-smart-meters/ and https://www.gov.uk/government/consultations/smart-meter-policy-framework-post-2020

Part 5. Incentives

14. To what extent do you support or oppose use of incentives to encourage customers to use less water?

a. **Strongly support**
b. Slightly support
c. Neither support nor oppose
d. Slightly oppose
e. Strongly oppose

Please explain why: Most interventions needed to reduce personal water use by their very nature will require consumers to make behaviour changes. There is no simple solution to instilling behaviour change but incentives – be they financial, societal or other – will be essential and will vary in their effectiveness as a result of an individual consumers personal motivators. Incentives need to be coupled with effective awareness campaigns (see section on Communications and Behaviour Change).

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

Please explain why: Water companies engage extensively with customers but not necessarily all consumers. Price incentives may be appropriate in some circumstances as will community or environmental incentives linking the impact on the local brook, stream or water course of reducing water. However, truly effective incentives will need to be collaborative with local and national stakeholders.

Part 6. Rainwater harvesting and water reuse

16. To what extent do you support or oppose the use of RWH and GWR schemes at individual level?

a. Strongly support
b. **Slightly support**
c. Neither support nor oppose
d. Slightly oppose
e. Strongly oppose

Please explain why: Personal RWH or GWH can prove beneficial in reducing water use for external uses. There is strong rationale for not using potable water for non-potable needs such as toilet flushing or garden watering. There are however limitations to the use – getting water from RWH container to point of use, cost of installation and maintaining water butts or tanks, concerns over quality and ensuring potable and re-use systems are effectively isolated, impact on combined rainwater / foul drainage from reduced flow, availability of rainwater in hot, dry periods.

The assessment carried out by Artesia considered the savings generated by home retrofitting of RWH/GWR and concluded that whilst savings would be made these come at a relatively high cost of over £4300/Ml saved (see full report submitted under Call for Evidence).

17. To what extent do you support or oppose the use of RWH and GWR schemes at community scale?

a. Strongly support
b. **Slightly support**
c. Neither support nor oppose
d. Slightly oppose
e. Strongly oppose

Please explain why: Such solutions would only really be appropriate in new build developments or some commercial properties and could be linked to sustainable drainage systems. The concerns raised in Q16 over sustainability of use and quality will also be valid.

Our analysis considered the savings generated by both community level RWH and wastewater recycling and concluded that, as for home retrofit, savings would be made these come at a relatively high cost of over £6500/Ml saved for community RWH and over £22,000/Ml for community wastewater recycling (see full report submitted under Call for Evidence).

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

Please explain why: Government can support the reuse of water in homes through a number of interventions e.g.: supporting publicity and awareness campaigns, providing incentives for developers to install RWH during new build, and promoting the integration of SUDs and RWH in new developments.

Part 7. Supply pipe leakage

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?

Please explain: Water UK do not have cost information, but analysis was carried out for Defra in their 2013 consultation[3] at which point it was not clear what the impacts on bills would be. An assessment of this nature would be central to any impact assessment carried out before any regulatory change.

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

Please explain: The reduction of supply pipe leakage will not in itself drive improvements to PCC but will impact on the volume of water delivered to properties. However, there are clear benefits to managing customer side leakage and the impact of lead pipes by addressing the inadequacies of the current arrangements. For example – the impact of lead on health is well documented but evidence from companies who engage with customers to replace their lead pipes to reduce the risk find a general unwillingness to do so mainly due to financial concerns (the cost of a lead supply pipe replacement typically being between £1500 and £2500).

Water UK have recently commissioned research to assess views amongst companies on supply pipe ownership which indicates a more positive attitude than in previous assessments. The survey found that among companies and regulators:

- 80% of respondents had at least a slightly positive view of supply pipe adoption.
- 70% of respondents felt that the current system was unsustainable.
- 80% of respondents held the view that consistency across the water industry was
- important.

The key benefits to supply pipe adoption were viewed to be:

[3] assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/337190/water-supply-pipes-consult-sum-resp.pdf

- A reduction in leakage, by pro-actively fixing supply pipes at no direct cost to the customer.
- Improved water quality, primarily through the pro-active replacement of lead pipes.
- Improved clarity for customers on their responsibility regarding service pipes.

The key disadvantages to supply pipe adoption were seen to be:

- The potential for a small increase to customer bills to fund on-going maintenance of supply pipes.
- Difficulty of carrying out work on customers' property, primarily in terms of access and reinstatement.
- Customers may have unrealistic expectations of the service provided by water companies, leading to a rise in complaints.

Two other research projects looking at the lead pipes and customer side leakage are due in early 2020 that will inform our final policy position.

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

Part 8. Communications and behaviour change

22. What are the main barriers to changing behaviours to reduce personal water use? Please rank your top three options by order of importance:

a. Insufficient access to support and advice
b. **Insufficient information about personal water usage**
c. **Insufficient information about water scarcity**
d. Lack of financial incentive
e. Investment in more water efficient equipment is prohibitively expensive
f. **Difficulty in changing habits**
g. People feel they are already doing all they can to reduce water use
h. Hygiene reasons
i. Other (please specify)

23. 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 – please specify – all the above

Please explain your answer: Reducing personal water use requires a multi-stakeholder response not just in terms of taking policy actions but also in communicating the necessity for action to customers. For example, water companies take a role in demonstrating cost and resilience aspects, government in demonstrating regulatory requirements, local government in promoting good building practices and NGO in highlighting the impact of abstraction on the environment.

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.

Protecting public water supplies and the ecology of surface waters requires policy focussed on promoting the efficient use of water throughout the entire system.

There are clear frameworks in place for reducing leakage (with Ofwat ensuring companies meet stringent targets and an average 17% reduction by 2025), and this consultation deals with efficiency in the home. That still leaves non-household use of public water supplies without a truly robust approach for driving improvement. This would benefit from renewed focus from Government and the sector.