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Dear Sir or Madam,

**Re: Scottish Water consultation - Shaping the future of your water and waste water services**

Waterwise is pleased to respond to the Scottish Water consultation 'Shaping the future of your water and waste water services'.

Waterwise was founded in 2005 and is the leading authority on water efficiency in the UK and Europe. We are an independent, not-for-profit organisation, receiving funding from Supporters and Affiliates across and beyond the water sector and wider sponsorship and research projects. We like to be at the front, leading and supporting innovative efforts to realise our mission; that water will be used wisely, every day, everywhere. We are supported by water companies as an independent voice - we know they and other stakeholders value our independent challenge and that is why we are responding to this consultation.

Water efficiency is a key contributor to resilience, and water companies are currently carrying out large-scale retrofitting and customer engagement programmes. But water efficiency, scaled up even further, is also an invaluable tool in driving customer participation – as well as using water efficiency programmes to get customers to help deliver water savings, it can contribute to multi-layered relationships to help inform, track and improve customer service and outcomes across companies.

In June 2017 Waterwise launched our 'Water Efficiency Strategy for the UK'. We produced this in partnership with the wider water sector and it is being delivered by a Water UK-supported Steering Group. Scottish Water is represented on this steering group and Waterwise have been working with Scottish Water to train staff delivering water efficiency within energy programme and on pilot water efficiency programmes. We also plan to

continue working with Scottish Water through our Leadership Group for Water Efficiency and Customer Participation.

Our key recommendations are that Scottish Water:

- Continue to deliver water efficiency programmes in partnership with energy efficiency programmes in Scotland
- Investigate the potential of rainwater harvesting at the household and neighbourhood scale to reduce water use, sewer overflows and flooding incidents
- Scottish Water and the Scottish Government should integrate demand management into the Hydro Nation programme
- The Saving Water in Scotland Network should be revived as part of the Hydro Nation programme
- Consider the carbon costs of heating hot water in the home when considering water efficiency vs new supply options
- Consider retrofitting schools for water efficiency as part of the 'water cycle campaign' and work with Waterwise to identify the wider water efficiency savings in the community from this programme
- Consider metering all properties to help address leakage and support customers to use water more wisely
- Consider water efficiency to enable growth and development in addition expanding your networks and infrastructure.
- Scale-up pilots delivered over the last five years and to work with Waterwise on long term communications with customers on water efficiency
- Work more closely with retailers and businesses to increase water efficiency and to consider demand management in addition to new supply measures when companies are experience growth

Attached are our detailed responses to your consultation questions. We look forward to working closely with Scottish Water to deliver water efficiency and would welcome the chance to discuss our response with Scottish Water in person. As a recent Affiliate of Waterwise we hope to be more active on water efficiency with Scottish Water and stakeholders in Scotland.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'Aaron Burton', is located below the 'Yours sincerely,' text.

Aaron Burton MCIWEM C.WEM CEnv CSci  
Director of Policy and Innovation

## Response to Consultation Questions

### General

#### **Do you feel that our Shaping the Future document is presented in a clear and understandable way?**

Yes, the document and in particular the use of infographics helps present the information in a clear and understandable way.

### Challenges & Opportunities

#### **To what extent do you feel we have identified the main challenges and opportunities for the water industry and for water customers in Scotland over the next 25 years?**

The Shaping the Future document identified some of the main challenges for the Scottish water industry and for water customers in Scotland over the next 25 years.

Waterwise believes water company business plans must include ambition on water efficiency to ensure enough water for people, the economy and the environment, now and in the future. We set out an ambitious blueprint for a water efficient UK - where water is used wisely, everyday, everywhere in the Waterwise Water Efficiency Strategy for the UK (2017). We believe this will help tackle the very real challenges of climate change and environmental degradation we face now and in the future.

Our strategy sets out key recommendations and actions to support behaviour change and greater customer engagement and participation linked to water efficiency. These include setting up a Water Efficiency and Customer Participation Leadership Group; undertaking more research on developing a water-saving culture and a national water efficiency communication platform; and increasing the scale and quality of integrated behaviour change and home. Waterwise is a key supporter of all of these actions and we encourage you to get in touch if you have innovative ways to improve the way water companies and others engage with water users on water efficiency.

## Which challenges and opportunities are most important to you?

### Climate change

Scotland's water resources are already experiencing impacts of climate change - extreme weather events like flood, droughts, and freeze-thaw events. These will have a huge impact on the quality and quantity of water resources and potentially the industry's ability to reliably deliver services.

These extreme events are projected to increase in frequency and duration. The timing of the events are also projected to change. This will amplify existing challenges the water sector is facing with regards to aging infrastructure and increasing demands from growing population, industry, agriculture, energy generation, and the environment.

It may seem like it always rains in Scotland, however it does not always fall where it is needed. Scottish Water only has access to 1% of all the rain that falls in Scotland and many raw water sources are small, meaning that levels in reservoirs, lochs and rivers can drop quickly during dry weather<sup>1</sup>.

### **Water shortages in Scotland 2018**

Although water resources tend to be more plentiful in Scotland, small and isolated water supply systems and environments that have adapted to high levels of rainfall mean that without rain, resilience and security of supply can be affected.

The sustained dry weather and heatwave conditions in 2018 led to less water availability and an increase in customer demand. In some areas this was an additional 30% of demand and led to Scottish Water producing an additional 140Ml/d. With Water treatment works and distribution networks reaching capacity, Scottish Water asked customers to start using water more wisely on 3 July 2018<sup>2</sup>.

However, the situation grew worse and by 10 July 2018 there were 30 tankers, each carrying 30,000 litres, helping to supply water 24/7 to parts of Scotland. This included Arran, parts of Moray, the North East and Dornoch in the Highlands<sup>3</sup>. By 23 June

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<sup>1</sup> <http://www.waterwise.org.uk/delivering-changes-in-scotland/>

<sup>2</sup>

<http://www.scottishwater.co.uk/about-us/media-centre/latest-news/customers-across-scotland-asked-to-use-water-wisely>

<sup>3</sup>

<http://www.scottishwater.co.uk/about-us/media-centre/latest-news/100718-tankering-to-keep-scotlands-water-flowing>

customers in Fife were being warned to save water in what looked to be the driest six months since 1984<sup>4</sup>.

It is clear from the water resources situation in 2018 that water efficiency measures could help Scottish Water as future drought events impact on the network. There is also a climate change mitigation element to saving water in Scotland. Although the water supply network is low carbon compared to other parts of the UK, many rural areas are using energy intense methods to heat hot water in the home. This is the second biggest user of energy in the home after space heating. Joint projects by Scottish Water and the Scottish Government's energy efficiency programmes can help reduce water and energy use through simple measures such as fitting water efficient showerheads and changing behaviours.

A survey in 2017 identified that in Scotland 69% of people thought global warming was happening and was primarily caused by human activity, such as burning fossil fuels<sup>5</sup>. However, in the Waterwise 2016 Water Efficiency Tracker survey we found respondents in Scotland had the highest levels of inaction on water efficiency and were the second least likely to have received information on saving water<sup>6</sup>. Water efficiency is a quick win for sustainability and should be further promoted in Scotland.

- ***Recommendation: Scottish Water should continue to deliver water efficiency programmes in partnership with energy efficiency programmes in Scotland.***

With increasing rainfall of around 45% over the next 30 years causing a 90-135% increase in water volume in sewers, there is a need for more integrated water management. Rainwater harvesting systems can be utilised to reduce potable water use when used for washing machine and toilet flushing use in homes. New 'smart' rainwater harvesting systems can also help manage water storage in a catchment during storm events, preventing sewer overflows and flooding incidents. Rainwater harvesting can be implemented at the household or the neighbourhood scale and with newer pumping methods can be a low carbon option compared with the mains supply.

- ***Recommendation: Scottish Water should investigate the potential of rainwater harvesting at the household and neighbourhood scale to reduce water use, sewer overflows and flooding incidents.***

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<sup>4</sup> <http://www.scottishwater.co.uk/about-us/media-centre/latest-news/customers-in-fife-urged-to-use-water-wisely>

<sup>5</sup>

<http://www.comresglobal.com/wp-content/uploads/2017/02/ECIU-Energy-and-Climate-Change-Survey-Feb-2017.pdf>

<sup>6</sup> <http://www.waterwise.org.uk/wp-content/uploads/2018/02/Annual-Tracker-Survey-Report-2016.pdf>

### **Population change**

Scotland's population growth and demographic change due to west to east migration and urbanisation, will require a significant increase in the number of properties you supply. We agree that this will require significant investment to repair and extend your network and infrastructure. We recognise that water efficiency, and demand management in general, can increase the security of growing supply needs and therefore reduce or defer investment in new supply infrastructure.

### **Digital transformation**

Customers are increasingly looking to engage with water utilities via electronic means. Additionally, based on their experiences with other utility sectors they expect to be able to have access to use data and to be able to utilise this to manage how they use a service. Information on water use from smart meters or sensors on individual water using fittings and fixtures can help households reduce water use and the associated energy use. In 2017, Waterwise trialled a smart shower monitor device in 10 households with Scottish Water. However, due to these not being integrated into the energy programme they were being delivered under and vulnerable customers feeling less able to engage with the technology, we had limited results. However, as the 'internet of things' continues to develop we'd like to see Scottish Water engage on further trials.

- ***Recommendation: Scottish Water should engage in further trials on water efficiency through the 'internet of things' to help customers reduce water and energy use in the home.***

### **Hydro nation**

We recognise and support Scottish Water's use of their water resources to support the Scottish Government's 'Hydro Nation' programme to develop the value of Scotland's water resources. We recognise the value of healthy water environment and the vital role it plays in ensuring the sustainability of water quality and quantity. However, without addressing the demand side of water use there is a real gap in innovation and potential green jobs in Scotland. With innovative trials and partnerships on water efficiency for households by Scottish Water and retailers in Scotland reducing water use in business, these should be capitalised on through the Hydro Nation programme.

Between 2006 and 2011 Waterwise hosted the Saving Water in Scotland Network, which was successful in bringing together politicians, water company representatives and other stakeholders on water efficiency. This network could be revived to help deliver actions from the Water Efficiency Strategy and promote water efficiency in Scotland. Waterwise would like to work with Scottish Water to undertake this.

- ***Recommendation: Scottish Water and the Scottish Government should integrate demand management into the Hydro Nation programme***

- ***Recommendation: The Saving Water in Scotland Network should be revived as part of the Hydro Nation programme***

### **Circular economy**

We recognise your ambition to become more resource efficient. Our Water Efficiency Strategy for the UK recognises the role of greywater recycling and rainwater harvesting can play in reducing mains demands and delaying/reducing peak inflow to wastewater systems. We believe this, alongside Scottish Water's use of sustainable drainage systems (SuDS), will provide long-term efficiency gains. We also believe there are significant cost and greenhouse gas emissions reductions to be gained from water efficiency impacts on water supply, use and disposal.

Although Scottish Water has a low carbon footprint and has reduced this by 24% over the past 10 years, it is important to consider that around 5% of the UK's carbon emissions are from heating hot water in the home (excluding space heating). With many homes in Scotland utilising more carbon intensive and expensive energy sources, water efficiency can help reduce carbon emissions from overall water supply-use-disposal and reduce fuel poverty.

- ***Recommendation: Scottish Water should consider the carbon costs of heating hot water in the home when considering water efficiency vs new supply options.***

### **Our Ambitions**

#### **To what extent do you feel that our long-term ambitions will deliver a service that will meet the needs of future customers, businesses and communities across Scotland?**

Waterwise supports the ambitions set out in Scottish Water's Shaping the Future document. However, the ambitions are all mostly focused on supply-side management. Whilst the first two ambitions to provide a consistently leading customer experience and keep customer prices low are commendable, we believe demand management, and water efficiency in particular, can play a vital role in delivering these ambitions. Water efficiency can also help in delivering the third ambition to increase the reliability, resilience, and sustainability of your services.

#### **A consistently leading customer experience**

Water efficiency is a key contributor to resilience, and water companies in England and Wales are currently carrying out large-scale retrofitting and customer engagement programmes. But water efficiency, scaled up even further, is also an invaluable tool in driving customer participation – as well as using water efficiency programmes to get customers to

help deliver water savings, it can contribute to multi-layered relationships to help inform, track and improve customer service and outcomes across companies.

Climate change and extreme weather events such as floods, droughts, and freeze-thaw events are already impacting Scotland's water resources and they are projected to amplify these existing challenges in the near future - certainly within the 25-year planning period in the Shaping the Future document. Water efficiency is a key way of engaging with customers over the long term and can help ensure that there is a proactive customer relationship when resilience events (e.g. drought or flooding) occurs.

We are aware that Scottish Water are piloting a range of innovative approaches to delivering water efficiency and are supportive of the key areas around customer engagement, improving assets, and working with stakeholders as set out in the Scottish Water Water Efficiency Plan 2011-2015<sup>7</sup>. Waterwise has been supporting Scottish Water's programme to date, which includes:

- Providing water efficiency advice and gadgets as part of a number of the Scottish Government's Home Energy Scotland (HES) schemes managed by the Energy Saving Trust (EST). Pilots include combined energy/ water as well as water led campaigns and opportunistic referrals from the HES advice centres across the country.
- Water efficiency retrofit as part of the Warmer Homes Scotland fuel poverty scheme delivered by Warmworks – 84 households to January 2018.
- Waterwise have trained 25 EST and Warmworks staff on water efficiency advice and retrofit to support this project.
- Galashiels whole town water efficiency engagement programme – 1,000 households
- DAIAD Trial – Waterwise are working with Scottish Water and Warmworks to trial 10 amphiro smart shower monitors with households as part of combined water and energy efficiency home visits.
- These pilots will form the strategy going forward planned to deliver 49,000 water efficiency packs by 2021.

We believe the actions set out in our Water Efficiency Strategy for the UK (2017) will improve evidence and increase ambition and delivery of water efficiency in Scotland - benefitting people, the economy, and the environment. This will help with the delivery of the ambitions set out in the Scottish Water Shaping the Future document. Scottish Water has been supporting the Waterwise Leadership Group on Water Efficiency and Customer Participation and we hope that the research outputs and discussions at this group can continue to inspire top-down buy in on water efficiency within Scottish Water.

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<https://www.scottishwater.co.uk/assets/domestic/files/you%20and%20your%20home/water%20efficiency/swwater%20efficiencyplan.pdf>

It is great to see Scottish Water considering how to engage with future customers through your 'water cycle campaign' and that this will include using water wisely. By combining these education programmes with water efficiency retrofitting, an average reduction in water use of around 18% could be achieved<sup>8</sup>. Waterwise has also developed evidence on the water saving potential in communities from Schools programmes and could work with Scottish Water to consider the impacts of your programmes<sup>9</sup>.

- ***Recommendation: Scottish Water should consider retrofitting schools for water efficiency as part of the 'water cycle campaign' and work with Waterwise to identify the wider water efficiency savings in the community from this programme***

### **Keeping customer prices low**

Affordability is a major concern in Scotland – with both water and fuel poverty issues across Scotland. One in five Scottish consumers is in debt for their water and sewerage services (Citizens Advice Scotland, 2015). In 2014 the estimated rate of fuel poverty was 34.9% or around 845,000 households were fuel poor (Scottish Government, 2016). Water efficiency can help vulnerable customers and should be built into any programmes that deals with this customer segment, in addition to wider work such as benefit entitlement checks. Waterwise has provided training for customer services staff working in this area on water efficiency advice in other water companies and could support Scottish Water with this also.

You state “We support the continued use of council tax bands as the basis for setting household customer charges as it is simple, cost effective and also provides a level of fairness.”. Waterwise believes that paying for water use via metering is the fairest option and that vulnerable customers can be protected through tariff options. Through large scale metering programmes in England we have seen a 16% reduction in water use and this increased when water efficiency programmes were combined with the metering rollout. Many water companies in England are now looking to utilise smart metering across their network to help reduce leakage, whilst customers can choose whether or not to pay via this means or continue via rateable value of their homes. The energy savings from water efficiency are a strong driver for water efficiency in Scotland, however there are benefits from metering enabling customers to manage their water use also.

- ***Recommendations: Scottish Water should consider metering all properties to help address leakage and support customers to use water more wisely***

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<sup>8</sup> <http://www.waterwise.org.uk/wp-content/uploads/2018/02/Evidence-base-report.April-2011-final.pdf>

<sup>9</sup>

[http://www.waterwise.org.uk/wp-content/uploads/2018/02/Investigating-the-impact-of-water-efficiency-educational-programmes-in-schools\\_final.pdf](http://www.waterwise.org.uk/wp-content/uploads/2018/02/Investigating-the-impact-of-water-efficiency-educational-programmes-in-schools_final.pdf)

### **Increasing the reliability, resilience and sustainability of our services**

Water efficiency can help deliver this ambition as identified by the impacts of the dry weather in Scotland in 2018. In relation to your action “Support the growth in Scotland’s economy, population and households by expanding our networks and infrastructure”, we suggest that water efficiency can help create capacity for new growth and defer investment in new supply options, which saves customers money. You also identify the impact of climate change and population growth on your assets, which is another area where water efficiency can prolong the life of assets.

Waterwise supports the work to date of Scottish Water and pilot programmes on water efficiency. However, going forward this will require further leadership from Scottish Water rather than just being used to “inform customers and encourage them to use water wisely, and reduce their long-term water consumption. We’d like to see Scottish Water present evidence on the effectiveness of the pilots delivered over the last five years and how these can be scaled up further. We also would like to work with Scottish Water on long term messaging around water efficiency through the proposed Waterwise National Water Efficiency Communications Platform.

- ***Recommendation: Scottish Water should consider water efficiency to enable growth and development in addition expanding your networks and infrastructure.***
- ***Recommendation: Scottish Water should scale-up pilots delivered over the last five years and to work with Waterwise on long term communications with customers on water efficiency.***

### **A resilient wastewater network**

As outlined above the pressures of climate change and increased rainfall on the wastewater network support the need for a more integrated approach to water management. We support the industry leading work on SuDS by Scottish Water. As set out in your Surface Water Policy the Preferred Option 1 is “Rainwater is stored and reused, such as rainwater harvesting and/or water butts”. However, there is a justification for moving to option 2 if “not a viable/ cost-effective part of the solution for managing surface water on the site, taking account of the potential water supply benefits of such a system”<sup>10</sup>.

The Waterwise Water Efficiency Strategy Steering Group is proposing a project in year 2 to update the costs and benefits of rainwater harvesting. This will look at individual building and neighborhood scale systems. The project will consider the multiple benefits for a resilient wastewater network and for future dry weather events and drought.

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<https://www.scottishwater.co.uk/-/media/business/files/connections-documents/developer-services/surfacewaterguidancedoc8ppa4pageshires.pdf?la=en>

- **Recommendation: Scottish Water should support the Water Efficiency Strategy project to review the costs and benefits of rainwater harvesting and reuse**

### Supporting Scotland’s Economy

We support your plans to “work with customers to encourage water efficiency”. Although it is important to consider supporting businesses and licenced water providers (retailers) when more water demand is required, we propose that Scottish Water work with them to identify demand management opportunities also. Additionally, although Scottish Water is no longer the retailer for businesses directly, we believe there are many opportunities for water and energy efficiency that may be missed for SMEs in Scotland. In England, Thames Water are working with retailers to deliver a smarter business visits programme. This programme has been saving approximately 2,500 litres per day per property through simple retrofit measures (see Table 1 for a breakdown by business sector)<sup>11</sup>. By saving businesses money on their water and energy bills it will support the overall economy in Scotland.

Table 1 Water efficiency savings achieved by Thames Water Smarter Business Visits Programme

Cohort	Percentage saving
Agriculture	40%
Business and Social Welfare	67%
Chemical and Metal Goods Manufacturing	30%
Defence	3%
Education	67%
Health	2%
Hotels and Catering	24%
Miscellaneous Manufacturing	18%
Miscellaneous Minor	85%
Public Administration	29%
Retail	1%
Transport, Construction and Other	34%

The Waterwise Retail Leadership Group on Water Efficiency is co-chaired by Jo Dow, CEO of Business Stream, and we would like to engage with Scottish Water on how you can support greater water efficiency for businesses in Scotland<sup>12</sup>.

- **Recommendation: Scottish Water should work more closely with retailers and businesses to increase water efficiency and to consider demand management in addition to new supply measures when companies are experience growth**

<sup>11</sup>

<https://corporate.thameswater.co.uk/-/media/Site-Content/Your-water-future-2018/Appendices/dWRMP19-Appendix-O---Water-efficiency-011217.pdf>

<sup>12</sup> <http://www.waterwise.org.uk/project/waterwise-retail-leadership-group-on-water-efficiency/>

**Which ambitions are the most important to you? Tick all that apply.**

**A consistently leading customer experience**

We are aware that Scottish Water are piloting a range of innovative approaches to delivering water efficiency and are supportive of the key areas around customer engagement and have been supporting Scottish Water's programme. We believe these, alongside our recommendation for Scottish Water to consider retrofitting schools for water efficiency as part of your water cycle campaign and work with Waterwise identifying the wider water efficiency savings in the community from this programme can help in delivering your ambition to provide a consistently leading customer experience.

**Keeping customer prices low**

We support your ambition to address affordability. We believe that paying for water use via metering is the fairest option and that vulnerable customers can be protected through tariff options and recommend Scottish Water should consider metering all properties to help address leakage and support customers to use water more wisely.

**Increasing the reliability, resilience and sustainability of our services**

Water efficiency can help Scottish Water deliver this ambition by helping to create capacity for new growth and defer investment in new supply options, which saves customers money.

**A resilient wastewater network**

We support Scottish Water's industry leading work on SuDS and recommend Scottish Water support research as part of the Water Efficiency Strategy for the UK to update the costs and benefits of rainwater harvesting. Water reuse and rainwater harvesting could have multiple benefits for reducing sewer overflows and flooding as well as enabling growth in cities where new development is planned.

**Supporting Scotland's Economy**

We propose Scottish Water also work with businesses and retailers to consider demand management opportunities alongside your plans to work with customers to encourage water efficiency. By saving businesses money on their water and energy bills it will support the overall economy in Scotland.