Defra Consultation on Measures to Reduce Personal Water Use
Energy Saving Trust Response

Introduction and key evidence

The Energy Saving Trust (EST) is the leading, impartial organisation promoting sustainable energy use and carbon reduction in homes, communities and transport. We work across the UK and in partnership with businesses, governments, NGOs and academia. We help deliver policies on behalf of UK government and all three devolved administrations, particularly in areas of consumer engagement, advice and grant administration.

EST has long recognised that demand for water, particularly in homes, is an important determinant of energy use and carbon emissions. One of our first major public policy intervention in this area was the high profile 2013 report *At Home with Water*[1] which analysed data collected from over 100,000 householders. Since then we have delivered extensive advice on water saving alongside our energy saving advice programmes, worked in partnership with water companies, and supported and delivered many projects focusing on the residential demand component of the energy-water nexus.

In this response we make particular reference to the following recent research studies we have been involved with:

Independent review of the costs and benefits of water labelling options in the UK Technical Report

For Waterwise we undertook an independent report on the costs and benefits of water labelling options including voluntary labelling, mandatory labelling and linking labelling to minimum fittings standards and Building Regulations. Report re-issued in August 2019 with updated water saving data. The findings support the case for a mandatory government led water labelling scheme (as in Australia) linked to minimum fittings standards and Building Regulations.
https://www.waterwise.org.uk/resource/water-labelling-phase-1-technical-report-re-issue/

Independent review of the costs and benefits of water labelling options in the UK Technical Report – Phase 2: Extension Report

This report presents the findings of modelling into the water, energy and financial savings that can be made through implementing a government led mandatory water label in the UK linked to minimum standards for fittings and various levels of water efficiency required through Building Regulations.
https://www.waterwise.org.uk/resource/water-labelling-phase-2-reports/

UK Water Industry Research: Using Smart Meters to Deliver Savings for Consumers

This report, undertaken by Gemserv and EST for UKWIR, examines the commercial and technical case for smart water metering, and the potential for joint energy / water approaches to support this and efficiency programmes more generally. It considers international and UK experience in relation

[1] https://www.energysavingtrust.org.uk/policy-research/home-water

to both energy / water efficiency and smart metering initiatives.
https://ukwir.org/using-smart-metering-to-deliver-savings-for-customers

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?

b. Yes

The principle of mandatory minimum standards for new homes is potentially effective, but having two levels of minimum standard brings no benefit to anyone. As discussed under Question 2 below, both the current standards are inadequate, and more stringent targets are both easily complied with and cost-effective. There is therefore no argument for allowing less stringent targets in any home, irrespective of how water stressed the area is.

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?

b. Yes

Our **Independent review of the costs and benefits of water labelling options in the UK extension report** clearly shows that more ambitious targets are achievable with currently commercially available technology. New standards setting performance criteria equivalent to a 95 litres per person per day according the water efficiency calculator for new dwellings can be met using only products that are already commercially established in the domestic sector. More stringent criteria, equivalent to 85 litres per person per day according calculator, can be met using products that are already technically proven, though some are not currently commercially available outside the non-domestic sector.

Furthermore, the report concludes that requiring these more stringent targets would be highly cost-effective for households, with any additional costs that are passed on to the home buyer being recovered through reduced bills in just over a year initially, and with cost premiums expected to tail off rapidly to the point where payback is a matter of a few weeks. There is clearly no economic argument for sticking with current unambitious standards in Building Regulations.

Although we have modelled standards equivalent to 95 and 85 litres per person per day, we do not support the use of the water efficiency calculator approach in setting standards. This approach is misleading, in that it does not lead to actual per capita consumption in line with the figures quoted, and limited in effect, in that it allows relatively inefficient appliances to be installed provided the overall calculation produces a compliant figure. Opportunities to drive down water consumption are therefore routinely missed.

To minimise water consumption, a fixtures based approach is required. This allows appropriate minimum flow rates to be calculated for every category of fixture and appliance, ensuring maximum efficiency while allowing householder satisfaction to be maintained.

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

Moving to a fittings based approach would require agreement on appropriate standards for every fitting and appliance category, which may appear to require a considerable amount of work before the regulations can be changed. However, should a water label be mandated for the UK then appropriate and widely understood standards would be available. The Building Regulations would merely need to specify what level of water label would be required.

Developing standards for the water label would still be required, but the cost of the work would be spread across all purchases, not just those for new builds. Also, the work could draw heavily on that already carried out for the European Water Label, and for other labelling schemes such as those in the USA and Australia.

The **Independent review of the costs and benefits of water labelling options in the UK** extension report also demonstrated that additional water savings could be made through extending building regulations requirements to major refurbishments as well as new builds, and that to do so would be cost-effective for consumers.

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

Please explain your answer

Energy Saving Trust works in partnership with Scottish Water in Scotland through the network of Home Energy Scotland advice centres to provide free advice and water-saving devices to householders and to encourage behaviour change to reduce water consumption. The free water-saving devices offered include aerated shower heads, tap aerators, toilet cistern Hippos, shower timers and garden hose spray guns. No professional installation is required.

From this we have observed that householders:

- are willing to engage on water use.
- recognise the contribution of water pumping and treatment to energy consumption and CO2 emission reduction.
- are interested in reducing their water consumption along with their energy consumption (or increased energy efficiency) and waste.

This partnership takes two approaches –

1. Working with local community groups to target specific areas of high water stress through direct mail, social media, outreach events and local press activity. This activity is resource-intensive and effective, as shown by projects in the town of Galashiels, village of Dunkeld and Birnam. Efficiencies can be achieved by combining water-saving advice and devices alongside advice on related issues.

https://www.scottishwater.co.uk/en/About-Us/News-and-Views/300819-Water-Efficient-Village-Perthshire

2. Offering free water-saving advice to all householders across Scotland – delivered through our existing trusted advice service.

https://www.scottishwater.co.uk/en/About-Us/News-and-Views/071019-Water-Efficiency-Drive

This approach has been successful in engaging householders in changing behaviour and sits easily alongside home energy efficiency advice in saving energy, saving money, and reducing CO2 emissions. This despite the fact that householders in Scotland are not aware of their household water consumption because they are not metered or billed and so do not perceive water as a utility in the same way as energy. Behaviour change around hot water provides a link between saving energy and saving water. A similar approach could be adopted by local authorities and water companies working in partnership at a local level elsewhere – for example through local authority-contracted money advice services and partnership with advice agencies such as Citizens Advice.

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

a. Strongly agree

Our **Independent review of the costs and benefits of water labelling options in the UK** initial report concluded that all water efficiency labelling scenarios examined would result in reductions to per capita consumption. Four scenarios were modelled that considered labelling only, with no links to regulations or funding schemes. After 25 years, these scenarios were predicted to reduce per capita consumption by 1.3 to 13.0 litres per person per day, with the most effective being a mandatory government-led labelling scheme. The most effective voluntary labelling schemes were modelled to reduce consumption by 2.4 litres per person per day.

While these figures are modelled, they are based on results from independently evaluated existing labelling scheme in Australia and the USA, where labels have been introduced and consumption reduction has followed.

There is therefore a clear argument for mandating the provision of water efficiency information on products at the point of sale. International evidence also clearly shows that a trusted and consistent rating system is a key factor in successfully providing this information.

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

The modelling and research referenced in Question 5 above includes the evaluation of labelling schemes with no associated regulations, minimum standards, discounts or other incentives. These labelling-only options have been shown to increase the uptake of more efficient fittings and appliances, and to reduce per capita consumption.

There is no basis for proposing that the provision of good quality efficiency information at the point of sale does not affect peoples' purchasing behaviour and reduce their water use.

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

The most effective label-only scenario referenced in Question 5 above led to a per capita saving of 13.0 litres per person per day after 25 years. The scenario for a similar label, but linked to building regulations and minimum standards is projected to achieve 31.4 litres per person per day reduction over the same period. Further modelling in an extension project identified the potential for different levels of ambition within this scenario, suggesting per capita reductions of 22.3 to 32.2 litres per

person per day depending on the level of minimum standards applied. Perhaps most importantly, all of these variants of the preferred scenario (a label linked to building regulations and minimum standards) delivered a highly positive cost benefit ratio of at least 1:50, with the more ambitious variants being consistently better than 1:60.

In summary, our work found no significant dis-benefits to linking a water label to building regulations and minimum standards, while the benefits appear to be enormous.

We should clarify here that, under the extension project, we conducted further stakeholder research into appropriate legal mechanisms for introducing minimum standards for all sales. We concluded that the most appropriate mechanism would be to include minimum water efficiency requirements in the new legislation required to mandate a water label, rather than to attempt to introduce this requirement through modifications to the existing water fittings regulations, as mentioned as an option in the consultation document.

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

- Resource advice agencies to offer advice to householders on water saving, with supporting information materials.
- Highlight the CO2 emissions resulting from water treatment and contribution to climate change to engage with environmental and family values (rather than cost savings alone).
- Provide water-saving devices free of charge to householders.
- Develop and resource water-saving calculator tools or apps that engage and inform users what proportion of their water consumption is used where in the home and how much that could be reduced – for example 'Flushing the toilet accounts for 30% of the average household water use; fit a water saving device on a large or old cistern to save approximately 20 litres a day.'
- Seek partnerships with community-led organisations, third sector organisations, civic groups and influencers to engage a wider audience and a variety of values.

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

d. Slightly disagree

Please explain why.

Households with health or social care needs that cause them to require more water than others should not be disadvantaged by charges for higher consumption which would further impact on their health and wellbeing.

Consideration should be given to how the charging structure is implemented to influence behaviour, for example, the first x units could be charged at a lower rate than the higher-consumption units (the inverse of what we see in the energy market) as a dis-incentive to consume those higher cost units. Lessons could be learned from experience of the energy market and fuel poverty.

Motivations other than financial savings/penalties can - and should - be engaged to influence behaviour.

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?

No response

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?

No response

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

No response

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

a. Strongly support

The report **Using Smart Meters to Deliver Savings for Customers** (Gemserv and EST for UKWIR) identified clear water efficiency benefits from installing smart water meters in the UK, with published research suggesting savings ranging from 4% to 13%. Smart water meters can help in the rapid identification of leaks on both supplier and customer side, as well as providing insight for householders on their water use, and enabling other drivers such as innovative tariff structures.

The report also identified technical issues around a smart meter rollout in the UK, and it was not clear that the financial savings accruing directly to a water supplier alone would justify the additional cost of the rollout. However, as reductions in water consumption become increasingly imperative, the argument for installing smart meters as opposed to conventional meters becomes stronger.

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

No response

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

No response

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

No response

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

No response

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

No response

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?

No response

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

No response

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

No response

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

3. a. Insufficient access to support and advice

2. b. Insufficient information about personal water usage

1. c. Insufficient information about water scarcity – and the impact of water usage on energy, natural environment

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

Community groups, local authorities, advice agencies, research bodies, employers, businesses.

Please explain your answer

There are opportunities across the range of information providers and influencers to repeat and reinforce positive messaging by sharing examples of best practice, leading by example, normalising and promoting water saving behaviours.

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.

Call for evidence

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:

In relation to areas (b) and (c) we refer you to the studies we undertook for Waterwise referenced at the Start of this consultation and which we refer to throughout this consultation response:

Independent review of the costs and benefits of water labelling options in the UK Technical Report

For Waterwise we undertook an independent report on the costs and benefits of water labelling options including voluntary labelling, mandatory labelling and linking labelling to minimum fittings standards and Building Regulations. Report re-issued in August 2019 with updated water saving data. The findings support the case for a mandatory government led water labelling scheme (as in Australia) linked to minimum fittings standards and Building Regulations.

https://www.waterwise.org.uk/resource/water-labelling-phase-1-technical-report-re-issue/

Independent review of the costs and benefits of water labelling options in the UK Technical Report – Phase 2: Extension Report

This report presents the findings of modelling into the water, energy and financial savings that can be made through implementing a government led mandatory water label in the UK linked to minimum standards for fittings and various levels of water efficiency required through Building Regulations.
https://www.waterwise.org.uk/resource/water-labelling-phase-2-reports/