



Behaviour Change Evidence and Strategy Foundations Changing England and Wales culture around water efficiency

21st January 2026



Background to this document

When this work was carried out

- Whilst procurement was underway to find and select a delivery body for the Water Efficiency Campaign, this project was carried out to build a robust evidence base and the strategic foundations for a successful behaviour change strategy.
- These foundations were intended for use as a springboard by the WEC Delivery Body, allowing it to more rapidly deploy a high-quality, evidence-based behaviour change campaign

The team

- This work was undertaken by Richard Dunn and Simon Wall of Different Drum. Different Drum is a strategy consultancy specialising in developing evidence-based approaches that drive impact across sustainability, health, and other social issues. www.differentdrum.uk
- The team can be contacted at richard.dunn@differentdrum.uk and simon.wall@differentdrum.uk



Executive summary

Strategy Summary

Restoring Trust and Driving Water Efficiency

This is a **long-term, multi-decade behaviour change** project designed to address low public trust, understanding and motivation and build a new, positive culture relating to all-year-round water efficiency behaviours. It requires a high-profile reset to make the public re-evaluate their relationship with water. This reset must also signal that the sector has faced up to past inadequacies and that the need is urgent.

The Challenge

A Low Base of Understanding and Trust

- **Low motivation:** The public's primary barrier is not knowing **why** to save. Whilst water saving is seen as a good thing, the UK is perceived as a "wet and rainy country" and there is low awareness of water scarcity.
- **Low capability:** Despite believing they know how to save water, confidence in doing so is low (only 35% strongly agree¹⁴), 94% of people **underestimate usage** and 50% cannot identify highest-use activities in their home¹⁵.
- **Low trust and social norms not established:** There is anger with the sector and **low trust**. Without a "normal" baseline, people assume their usage is "**better than average**", reducing external pressure to change.

The Evidence

Key Insights:

- **Taps, toilets, and showers** are the key drivers, accounting for **72% of household water use**¹⁶. These activities also have high headroom for change, meaning there's a big difference between high and low users. However, behaviours relating to toilets and showers may have the highest barriers to change and are connected to strongly-held perceptions around hygiene and, in the case of showers, 'enjoyment'¹⁴. There is a potential for a campaign to group these behaviours and tackle cultural norms together. NB data on usage characteristics needs enrichment, as does data on demographics of use.
- **Target a broad audience:** While demographics are important, once you correct for occupancy, their impact water use lessens. Variation *within* segments is likely **more influential than the variation between them**.
- **Non-Household** is 28% of consumption, and **1% of Non-HH** Supply Point Identification Numbers (SPIDs) = **50% of all non-household consumption** (15% of total water supply)¹⁷.
- **Don't:** Use **generic 'information-only'** campaigns; they have **negligible** effects.
- **Do:** Use **social norms** (showing what others are doing), **point-of-use** prompts (like shower timers), and **real-time** smart meter feedback.



Executive summary

Recommended Strategy

Three Core Communication Roles...

The campaign must deliver on three primary roles AND deliver **a moment** in popular culture:

- **MOTIVATION:** Land the '**Why**'. This is the biggest gap. Rationale must be clear and scientifically credible; research feedback suggests that landing a combined environment protection/water abstraction story along with a saving water saves money story is more likely to drive people to care about water and make them more likely to act.
- **CAPABILITY:** Demonstrate the '**How**'. Move the needle on the 43% of people who believe they already use as little as possible¹⁴ and highlight the material difference that consistently sticking to a few **simple, highest-impact, all-year-round** behaviours can make. Ensure these are easy to remember e.g. use a mnemonic like 'fewer flushes, shorter showers, turn off taps'; recognise the cultural contexts (eg hygiene, enjoyment) of these behaviours)
- **OPPORTUNITY:** Land the '**Who**'. Establish new social norms , breaking the silence around water behaviours and show that saving water is a shared responsibility for everyone, using credible messengers .

...and a coherent ecosystem of change across channels, messengers, partnerships

- **Channels and messengers** deliver reach and credibility, and model behaviour to a broad audience. Broadcast media is important to create social norms, taking care that desired behaviours are seen as mainstream and aspirational, not divisive. Specific channels should be used for high usage audiences including high-usage non-household audiences.
- **Partnerships strategy** should ensure **coherence of messaging** and **coordinated action** across Water Companies, Government, Environmental organisations and scientific bodies, Schools, Manufacturers and Retailers.
- **Policy implementation** (tariffs/pricing strategies inc. non-household tariff development, meter roll out, TUBS etc.) should be **supported by the WEC**. WEC can **prepare public opinion** and **driving support**.

Evaluation

Measuring Impact

- A focus on measurement of flow, not reported behaviour, tracked via smart meter
- Ensuring that measurement is linked to strategy and tracks improvement in Capability, Opportunity and Motivation
- Building Cohort-driven Live Labs and using Randomised Control Trials where possible



A high profile, reset of the culture and behaviours relating to all-year round water efficiency

BY

Driving people to care about why it matters, giving them the belief that they can make a difference, and establishing the social norms necessary for sustained behaviour change

BY

Building a national conversation around water among a broad audience, landing the science-based 'why' of water conservation and driving take up of a few simple, high-impact and all-year-round behaviours supported by water efficiency

tools

BY

Using credible messages and messengers, broadcast media, events, PR, coordinated action by partners and policy and a well-executed evaluation strategy

The Public's primary barrier is not knowing why to save. The UK is perceived as a "wet and rainy country"; low awareness of water scarcity, weak connection to environment

A highly-visible moment in popular culture that kicks off or restarts momentum, disrupts apathy, provokes conversation and provides an opportunity to reappraise social norms

Given most water efficiency communications have been delivered in times of drought and have explicitly suggested that water efficiency is required 'in times of low rainfall' this shift in 'ask' is newsworthy and signals that the 'situation has changed'

Much behaviour around water is habitual. Evidence shows that repetition and consistency are key to engraining new habits. Encouraging new water-efficient behaviours to be carried out throughout the year will, therefore, maximise the changes of new habits 'sticking'

A high profile, reset of the culture and behaviours relating to all-year round water efficiency

BY

Messages that show what others are doing (leveraging 'dynamic norms' and showing how low water users are establishing new norms) or connecting conservation to 'in group' community identity are persuasive.

People act when they feel responsible and believe their efforts make a difference; feelings of futility weaken motivation.

Driving people to care about why it matters, giving them the belief that they can make a difference, and establishing the social norms necessary for sustained behaviour change

Making the effort inherently 'social', c.f. Stoptober, is another way of modelling the new behaviours using peers and mass participation

While demographics are important, once you correct for occupancy, their impact on how much water is used lessens. Variation within segments is likely more influential than the variation between them

BY

Scientific credibility of the 'why' and vocal bipartisan support of it will be key to making this a mainstream issue rather than a fringe one

This process employed the Behaviour Change Wheel toolkit which provides a systematic approach to understanding the drivers of behaviour. It makes it possible to connect 'what needs to change' with a substantial body of evidence on the types of Interventions and Behaviour Change Techniques (BCTs) which can be effective

Building a national conversation around water among a broad audience, landing the science-based 'why' of water

Conservation and driving take up of a few simple, high-impact and all-year-round behaviours supported by water efficiency

The ability to 'model' the desired behaviours across audiences requires credible messages and messengers. Grounding the "Why" in science is critical, with respected figures and organisations being tasked with its delivery. This should include a mass audience, taking care that the desired behaviours are seen as mainstream and aspirational across a wide range of groups; that this doesn't become a divisive issue

Taps, toilets, and showers are the key drivers, accounting for 72% of household water use. These activities also have high headroom for change - there's a big difference between high and low users. There is potential for a campaign to group these behaviours

tools
BY

The rapid evidence review used COM-B categorisation to report on interventions in the water efficiency space including environmental restructuring which has demonstrated statistically significant effect sizes in driving down water consumption

Broadcast media is important to deliver the reach, credibility and model behaviour to a broad audience - essential for establishing social norms. Specific channels should be used for high usage audiences including high-usage non-household audiences

Using credible messages and messengers, broadcast media, events, PR,

coordinated action by partners and policy and a well-executed evaluation strategy

Key partners will include Water Companies, sustainability and ecologically-focused organisations (e.g. Energy Savings Trust, Wildlife Trust), scientific bodies, schools, manufacturers and retailers. The WEC should engage and co-ordinate action and events, provide messaging and collateral that amplifies WEC campaign strategies and tactics, and encourage pervasive deployment of water efficiency messaging and action in their activities

Coherent integration with policy levers is a key part of successful behaviour change practice. There is likely to be significant value in coordinating the WEC and the launch of policy levers to drive coverage and public conversation, 'Prepare' sentiment to be supportive of policy launches (c.f. plastic bag charge) and demonstrate that science, government and sector are aligned on the issue

A clear plan for what is being measured, the reasons for doing it and how it will be used. Collecting and collating the data necessary to measure success, and tracking attitudes through high-sample quantitative research and behaviours through smart-meter data

Our approach

Context

- **The Challenge**
- The WEC
- The Brief
- Stakeholder insight and input
- Policy context

Behaviours

- Audiences & Behaviours
- What Needs To Change

Interventions

- Relevance & Effectiveness

Planning & deployment

- Analogous Challenges
- Strategy foundations
- Campaign and messaging guidelines
- Behaviour change system development (channels, partners, policy)
- Evaluation Considerations



5,000,000,000 Litres

Expected daily short fall by 2055 without intervention

<https://www.gov.uk/government/news/england-faces-5-billion-litre-public-water-shortage-by-2055-without-urgent-action>



The WEC Driving a sustained and measurable reduction in water demand

The Water Efficiency Campaign (WEC) is part of the £100m Water Efficiency Fund, which aims to stimulate a transformative, sustained, and measurable reduction in water demand across England and Wales by using a range of water efficiency approaches. It aims to foster collaboration and innovation on water efficiency at a scale never seen before.

Developed in
collaboration
with sector

Complement
and amplify
existing efforts

Enable long-
term, sustained
change

The WEC aims to shift the culture and mindset around water efficiency in England and Wales by:

- **Developing and co-ordinating a campaign across England and Wales** with significant funding to raise awareness of water efficiency and drive meaningful cultural change in how people think about water use
- **Highlighting the actions everyone can take**—including wholesalers (who supply households and retailers), retailers (who serve non-household and business customers), households, and businesses—to reduce water consumption
- Delivering a successful campaign across England and Wales that can **amplify the benefits of other interventions** already being delivered by water companies or through the WEL innovations
- Capturing and actively **sharing learning** in a way that guides future efforts, delivering a lasting legacy and ongoing benefits for the sector and bill payers, without relying on further seed funding or regulatory intervention

In December 2025 a **delivery body**, tasked with developing the responsibilities of WEC, will be appointed to with a view to commencing work in January 2026.



The Brief Accelerate WEC delivery by developing evidence base and strategy foundations

Why we're doing this

- To ensure a flying start, and facilitate quicker delivery of the campaign, the role of this project is to establish a firm evidence base and provide the foundations for a successful behaviour change strategy.
- These foundations should be used as a springboard by the WEC Delivery Body, allowing it to more rapidly deploy a high-quality, evidence-based behaviour change campaign

What we've done

- Gather insights and evidence on audiences, behaviours, behavioural drivers and previous/current water efficiency campaign activity at home and abroad. To inform this, water companies have shared significant insight not currently in the public domain
- Rapid Evidence Review of peer-reviewed academic literature surrounding water efficiency and water efficiency behaviours
- In partnership with a working group of six water companies, piloted water efficiency campaign messages and mechanics as part of their delivery of water efficiency campaigns and/ or drought communications.
- Worked with the OFWAT research team to carry out qualitative and quantitative research into water efficiency culture, behaviours and the resonance of water efficiency messaging

Limitations of this work

- As with any contemporary issue, evidence will continually emerge that may build upon, or challenge the insights presented in this report
 - To mitigate against this risk, we have taken care to call out where evidence is weakest and where further work is needed



Stakeholder Insight & Input

This is complex challenge, requiring the input of a range of stakeholders

Stakeholders

Water Companies

- Affinity
- Southern Water
- Severn Trent
- United Utilities
- Welsh Water
- Yorkshire Water

Organisations

- Waterwise
- Water UK
- Wastebusters
- MOSL
- Policy Consulting

Government

- DEFRA
- Environment Agency
- Welsh Assembly
- National Rivers Authority

Project Activities and Milestones

Jul	• Project kick off • Gathering Water Company and sector insights
Aug	• Launch pilot campaign with 6 water companies to test early messaging territories
Sep	• Academic evidence review completed in partnership with Dr Ayse Allison from UCL's Centre for Behaviour Change; Consumer research commences
Oct	• Gather results from pilot companies
Nov	• Strategy completed, stakeholder feedback and iteration, research results
Dec	• Integration of research results and finalisation



Policy Context

The **Independent Water Commission Final Report**, published in July 2025 made recommendations that specifically addressed water efficiency behaviours and culture:

- Noting that smart meters are an important mechanism for driving down demand, specifically recommending "**compulsory smart metering in a greater range of circumstances**" in Wales.
 - Measures to reduce **non-household consumption**, including **changing tariff structures** to incentivise efficiency. The report also notes that "**falling block tariffs**" for businesses may act as a "**perverse incentive**" to use more water.
 - The Commission recommends "**greater water reuse and rainwater harvesting schemes**" and developing a new policy and regulatory framework to drive the adoption of this infrastructure. It points out that current regulations can block the use of non-potable (non-drinking) reuse systems.
 - It notes that "consumer behaviour" is a key "**pre-pipe**" issue that must be considered when managing the water system effectively.
- These recommendations will have a significant **influence on policy** and have been taken into consideration in development of this evidence base and strategy

https://assets.publishing.service.gov.uk/media/687dfcc4312ee8a5f0806be6/Independent_Water_Commission_-_Final_Report_-_21_July.pdf



Our approach

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- The WEC
- The Brief
- Stakeholder insight and input
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Behaviours

- **Audiences & Behaviours**
- What Needs To Change

Interventions

- Relevance & Effectiveness

Planning & deployment

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The Audience understanding the main consumers of water in England and Wales

Behaviour change strategy starts with identifying who the **main users of water** in England and Wales are. This allows us to:

- **Focus research efforts** so we understand the drivers of behaviour amongst the right groups
- Identify **key audiences** for the campaign
- Identify the range of behaviours exhibited by these audiences
 - Understand where the **'headroom'** is in terms of lowering water consumption
 - Understand how **patterns of behaviour** link to household composition and routines



Summary Audience groups, household composition and contextual insights

Audience	Demographics Mixed evidence but some suggestions that income, household size (occupancy) and age can influence usage.	Patterns There are distinct rhythms to water consumption across the day which can be segmented	Usage ...but, after adjusting for occupancy, they only show small differences in their average consumption	Individual Behaviours > Demographic Group The variation in per capita consumption within segments is likely more influential than the variation between them	Teens Households with teenagers show significantly higher water use, especially girls (13–19) in the mornings
	Occupancy It's easier to be more efficient when there are more of you	Focus Toilets, Showers and Taps drive the majority of household water use.	Headroom Across a day, there are big differences in how much water people use when they shower, flush toilets and run taps.	Priorities The drivers of water consumption differ from household to household	Opportunities One saved flush is similar to showering for one minute less
Behaviours					



Demographics Mixed evidence when it comes to usage



Age

Evidence is inconsistent and a weak predictor of total consumption^{1,2,4}

*"Older individuals tend to consume more water than their younger counterparts."*¹

*"...frequency of showering and bathing being higher on average among younger age groups"*⁴

Income

Income doesn't appear to be a strong predictor, but some evidence that gardens lead to higher use^{1,2,3,4}

*"Higher-income households ... tend to have lower water consumption attributed to greater resources for water-saving devices"*¹

Insight

While there are some suggestions of demographic opportunities, evidence is inconsistent. Those with most promise are income, household size (occupancy) and age, but there are still questions around consistency of findings.

Evidence

There is some evidence, across a number of papers, some of which are references to the left, including systematic reviews of multiple studies in the field.

However, a large UK-based study from 2013 found that...

"as neither sociodemographic characteristics nor environmental values predict individual practices strongly, approaches to 'segmenting' water industry customers into such groups based on these variables are unlikely to optimally match interventions with the people that may be receptive to them"⁴

In addition, other studies draw similar conclusions:

"The predictability of socio-demographic variables for water conservation actions remains inconsistent"¹

"existing research on household water consumption determinants is often limited to specific case studies, with findings that are difficult to generalize and not conclusive"²

Implications

Any use of demographics is likely to represent tactical, niche opportunities rather than defining target groups for the wider campaign.

Future considerations

Is there an opportunity to commission a long-term longitudinal study to understand demographic usage and susceptibility to interventions



Gender

Gender impacts water-saving behaviours are inconsistent across studies.^{1,2,4}

*"Gender's role remains mixed; while some studies suggest that females tend to exhibit higher levels of water-saving behavior, others support the opposite."*¹

Household Occupancy

Larger households use more total water, but per-person use may decrease due to shared practices.^{1,2,4}

*"...while single-occupancy households show higher per-capita consumption compared to larger households"*¹

Education

Conflicting evidence as to education's role in water-saving behaviours.^{1,2,4}

*"Education's impact on water-saving behavior varies, with some studies finding no significant link, while others observe differences based on educational attainment"*¹

Property Size

Large homes and gardens increase water demand.^{1,2,4}

"Larger homes, gardens, and pools drive higher water consumption, influencing consumption variations"^{1,1}

Price Sensitivity

Low-income households respond more strongly to price increases than wealthy households.³

*"Low-income households [are] five times more responsive to water price changes than high-income households."*³

Social Comparison

Most effective for high-use households.³

*"Social comparative feedback is most effective when targeting high water users, and appears less effective or even counterproductive for low water users."*³

¹ Barriers and Motivators of Household Water-Conservation Behavior (Sanchez et al., 2023)

² The determinants of household water consumption: A review and assessment framework for research and practice (A. Cominola et al, 2023)

³ Price and Behavioural Signals to Encourage Household Water Conservation (Lu et al., 2019)

⁴ Patterns of Water: The water related practices of households in southern England, and their influence on water consumption and demand management Browne et al (2013)

Patterns There are distinct rhythms to water consumption across the day which can be segmented

Fig A: Clusters' typical hourly consumption patterns as a fraction of their max¹

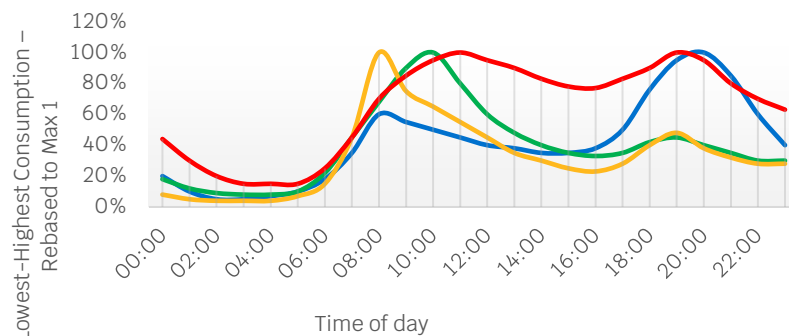
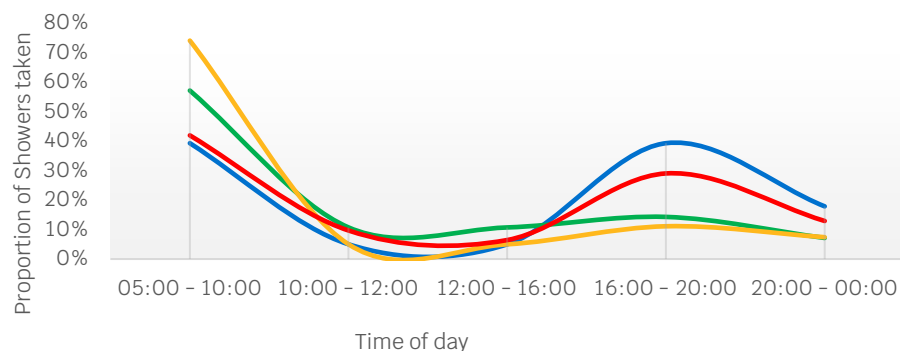


Fig B: An illustration of how shower timings differ for each segment¹



- **Evening Peak (EP)**
Consumption peak occurs 19:00–21:00
- **Late Morning Peak (LM)**
Peak occurs 09:00–11:00

- **Early Morning Peak (EM)**
Peak occurs in the early morning
- **Multiple Peak (MP)**
Multiple sporadic peaks throughout the day

Insight

Water consumption is not evenly distributed across the day. **Different households follow different routines, showing distinct patterns of usage.** Behaviour varies between groups.

Evidence

A study of 10,000 households smart meter data combined with household demographic and survey data: *Contextualising household water consumption patterns in England: A socio-economic and socio-demographic narrative* (Abu-Bakar et al 2023). This study drew on an earlier piece of work by the same authors: *An empirical water consumer segmentation and the characterisation of consumption patterns underpinning demand peaks* (2021).

Implications

Different households consume water differently — by time of day and the activities at those times. This means **habits and therefore opportunities are not evenly distributed**. See Fig A. There is some evidence that there are some biases towards specific demographic groups, but the methodology and samples suggest further evidence is needed.

Fig B illustrates this using showers – the Early Morning peak group has its peak use shower time in the 5am–10am slot while the Evening peak group split their shower times between the morning slot, and a secondary peak in the early evening

These two patterns alone might imply **different behavioural relationships with showers** where one is perhaps about getting ready to face the day and the other is about unwinding at the end of the day. Two very different routines that are likely to have very different drivers

- Specific strategies are needed that align with daily routines and water-use habits
- This is a single paper, and so findings and implications should be weighted accordingly

Future considerations

Can we use smart meter data to build on these routine-based customer segments?

Can we prioritise these behaviours clusters in terms of headroom?

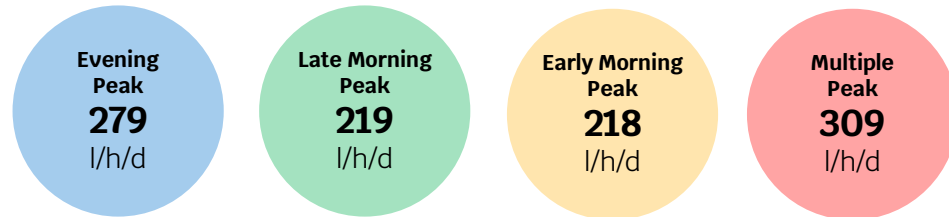
How do devices play into each of these clusters

How should messaging and interventions vary by segments

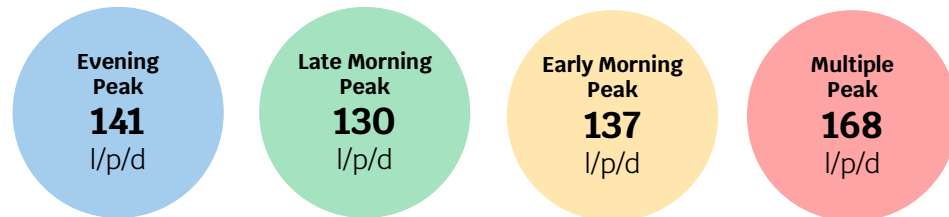


Usage After adjusting for occupancy, these segments only show small differences in their average consumption

Household Consumption



Individual Consumption



Insight

The segments show that, while there are difference between how people use water and that those **differences can be linked to demographics, it doesn't appear to lead to meaningful differences in consumption.**

Evidence

A study of 10,000 households smart meter data combined with household demographic and survey data. *Contextualising household water consumption patterns in England: A socio-economic and socio-demographic narrative* (Abu-Bakar et al 2023)

"At the same time, as neither sociodemographic characteristics nor environmental values predict individual practices strongly, approaches to 'segmenting' water industry customers into such groups based on these variables are unlikely to optimally match interventions with the people that may be receptive to them." *Patterns of Water: The water related practices of households in southern England, and their influence on water consumption and demand management* Browne et al (2013)

Implications

This research focussed on routines and did show some **demographic differences between the segments.**

Even with these differences **it doesn't show large variations in consumption levels** (although there does appear to be some uplift in the multiple peak group), which might suggest that demographics and lifestyle may play a smaller role in driving water use volumes than might be expected

However, **had the work been explicitly focussed on consumption levels**, there might have been **some differences in demographics** but the evidence to support this is sporadic and weak. See Browne et al

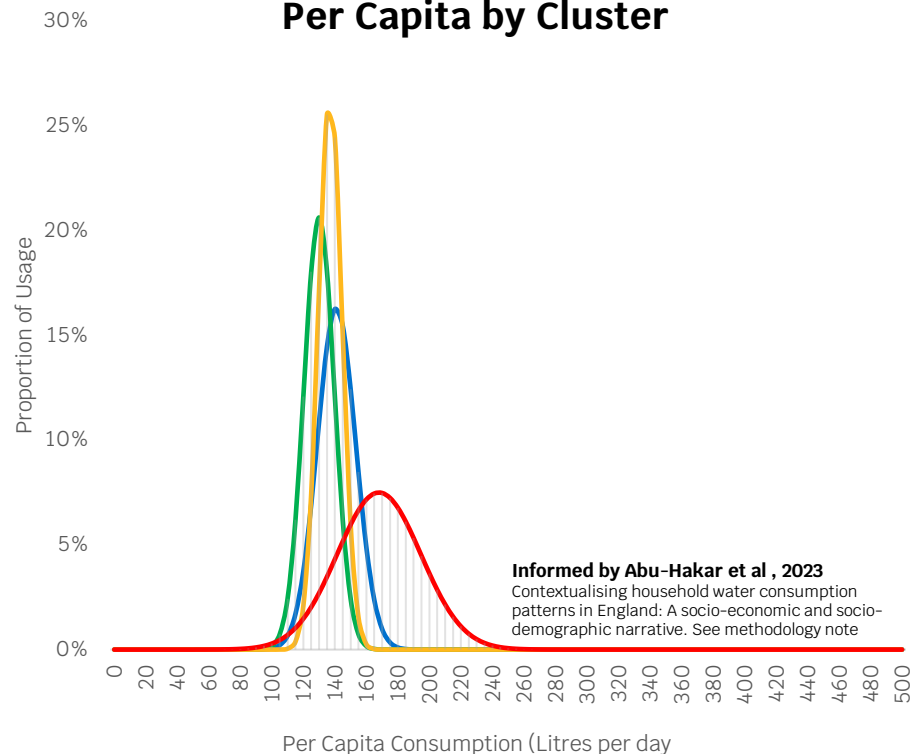
Future considerations

If we segmented households based on consumption (e.g. high / medium / low users), would we see demographic patterns emerge — or would the primary drivers be individual behaviours, appliance-related etc? See next slide



Individual Behaviours variations in usage within segments is likely more influential than the variation between them

Distribution of Water Consumption Per Capita by Cluster



Methodology note

This chart is for illustrative purposes only. While Average PHC and PCC were published in this paper (*Contextualising household water consumption patterns in England: A socio-economic and socio-demographic narrative* – Abu-Bakar et al 2023), median and standard deviation was only available for PHC. We have assumed a normal distribution and applied a scale factor to the PHC standard deviations to visualise the spread at a PCC level. As such, the chart above should be treated as illustrative.

Insight

While the routine-based segments show different patterns of water use across the day, **even where average consumption differs between groups, distributions overlap substantially**. This means individual usage varies widely within each group and is not well predicted by group membership i.e. **the variation in consumption levels within each segment is likely more influential than the variation between segments**

Evidence

A study of 10,000 households smart meter data combined with household demographic and survey data. Contextualising household water consumption patterns in England: A socio-economic and socio-demographic narrative (Abu-Bakar et al 2023)

“the effect of customer behaviour has a bigger impact on water consumption than socioeconomics or weather” Customer behaviour key to driving down demand (UKWIR 2021)

Implications

Individuals cannot be assumed to consume water in a similar way to everyone else in their group which, in turn, means that segment averages are not predictive of individual PCC – **we risk missing high-usage households inside “low-usage” segments**

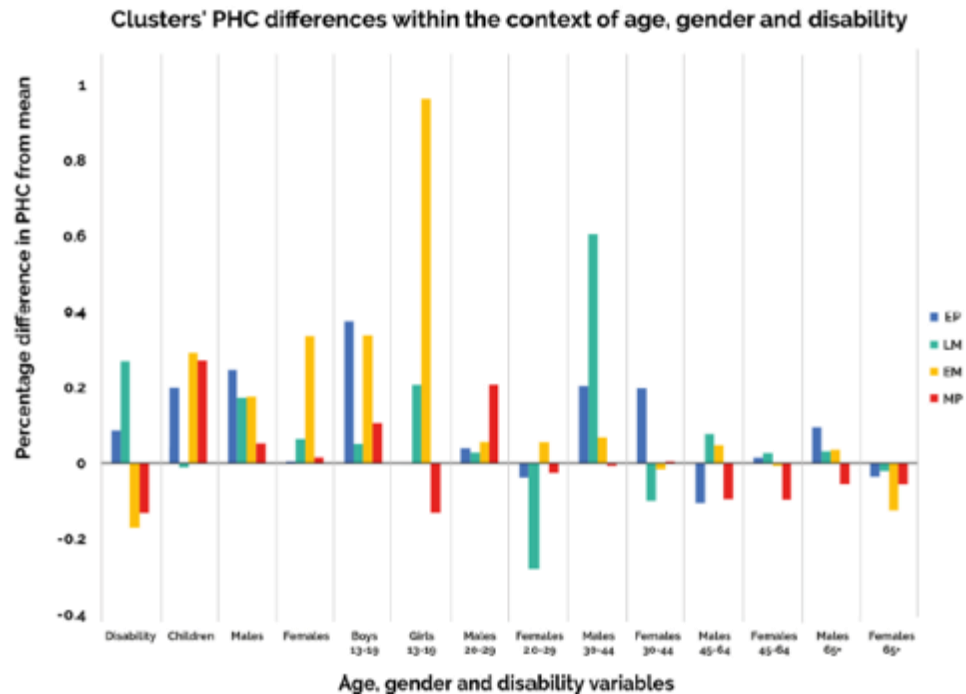
It implies that key drivers of water use are likely to be habits (shower duration, frequency etc), **appliance and fixture efficiency** (shower flow rates, toilet flush volume, washing machine), **household norms** and **social expectations** (e.g. flushing etiquette) and others.

Future considerations

This should be a relatively easy piece of work to replicate in partnership with a willing water company partner



Teens Households with teenagers show significantly higher water use, especially girls (13–19) in the mornings



Insight

Households with teenage girls (13–19) show higher water use, particularly in the early morning, driven primarily by shower behaviours.

Evidence

A study of 10,000 households smart meter data combined with household demographic and survey data. *Contextualising household water consumption patterns in England: A socio-economic and socio-demographic narrative* (Abu-Bakar et al 2023)

"83% of adolescents have a shower that is longer than the average UK shower time of 7.5 minutes"
The Water Efficiency Network 2016

Implications

Households containing girls aged 13–19 show the largest increase in early-morning consumption of any demographic variable. With per-household consumption rising 96% above the cluster average. This increase is strongly linked to shower use and morning routines.

Boys of the same age group **also show increased use**, but more evenly across morning and evening. Hypothesis: For teenage girls, it should be considered whether showering is associated with confidence and readiness for school/social life, meaning direct requests to "shower less" risk resistance.

A note of caution. The findings are based on PHC. Therefore, differences could be driven by occupancy. If EM peak users are, for example, mostly working couples without children, then one teenage girl suggests a household of at least three, and a high probability of a sibling pushes it to a household of 4. Refer back to the uncertainty in available research around the use of demographics

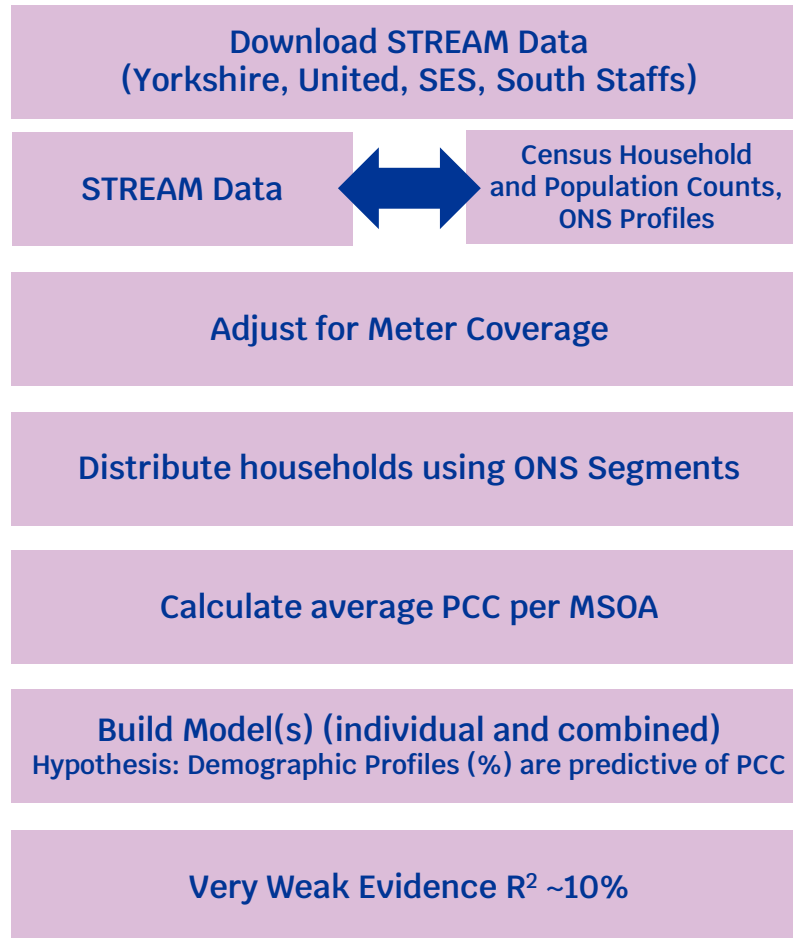
Future considerations

Should focus be on the behaviour, not the demographic - if the key driver is longer/identity-linked showers, should interventions protect comfort and identity.
 Should messaging be framed around wellbeing and routine support, not restriction
 - especially for adolescents where showering is tied to self-image and social readiness.



Model Building

Testing demographic influence using STREAM data– Initial thoughts for a model



Insight

Building a model at the LSOA level, demonstrates that occupancy alone accounts for 85% of the variation in usage levels. Adding segments (ONS) adds little explanatory power and comes at the cost of adding more variables.

The model was recoded to control for occupation so that the percentage profile for each ONS segment was used as a predictors with PCC for the LSOA as the target. Coefficients would therefore be the expected average PCCs per segment. Low predictive power of ~10% R^2 and a uniformity of coefficients

Evidence

Using data published on Stream at the LSOA level, we combined the data of several water companies (number of meters and total recorded consumption against those meters) and linked it to census occupation and segment data using the MSOA common variable.

Using some simple assumptions around meter coverage and household distributions, we had a data set that for many thousands of LSOA areas allowed us to see total population (rather than households) against the total consumption. We then built simple models to explore the explanatory power of ONS segments. There are flaws within this process, but we would still have expected to see relationships appear if they were strong enough.

Implications

This supports a previous slide that suggests that the variance at an individual level may outweigh any potential similarities within segments. i.e. it's more important whether a household has a low flow shower, smaller flush volumes or specific norms within the household than whether they are from a similar demographic.

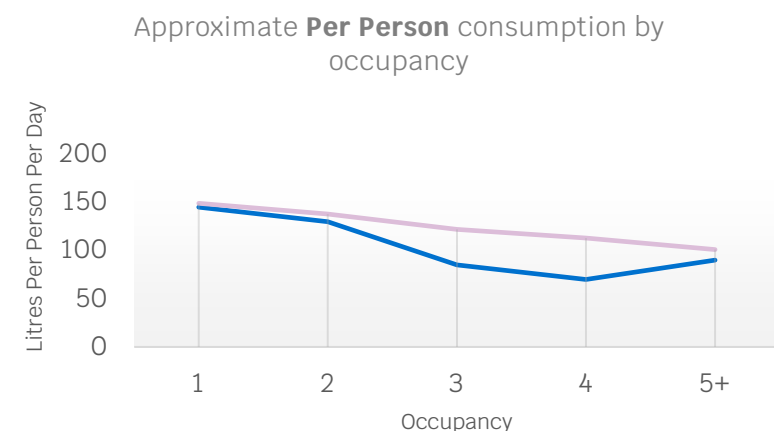
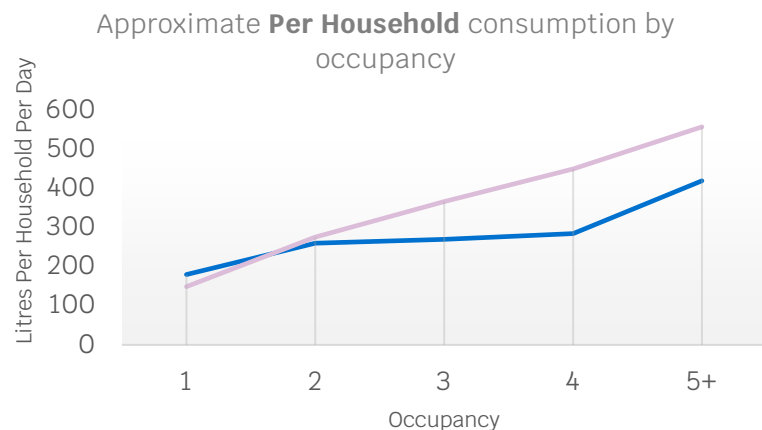
Of course, there is an argument that these behaviours and norms may be aligned with demographics, but early indications are that the relationship between demographics are consumption levels needs further investigation

Future considerations

How do we target high use households if demographics isn't the primary differentiator



Occupancy It's easier to be more efficient when there are more of you



Abu-Hakar et al, 2023

Contextualising household water consumption patterns in England: A socio-economic and socio-demographic narrative

United Utilities

Household Charges

<https://www.unitedutilities.com/my-account/your-bill/our-household-charges-20252026/how-bills-for-households-with-a-meter-are-changing-for-20252026/>

Insight

Per-capita consumption falls as household size increases because water use is not directly correlated with the number of people. Some activities are shared (e.g. appliances) or fixed per household (e.g. background leakage).

Evidence

Contextualising household water consumption patterns in England: A socio-economic and socio-demographic narrative (Abu-Bakar et al 2023) A study of 10,000 households combined with household demographic and survey data *At Home with Water* (2013) from the EST draws similar conclusions (“When cooking, washing, watering the garden and so on are shared across the household, average water consumption per person falls”) although the decline isn’t as significant as the Abu-Bakar et al study (in line with the United Utilities data in the adjacent charts)

Implications

Inevitably, larger households use more water so should be an obvious consideration when targeting, but the drop in PCC suggests that they are already significantly more efficient than smaller households.

PCC isn’t perfect. Even when comparing PCC between households it’s important to account for occupancy, otherwise single-occupancy households may be incorrectly flagged as high users and high-occupancy households may appear efficient in comparison – **it’s easier to be more efficient when there are more of you.**

This is because the more people who share a home, the lower the PCC on average due to shared activities/appliances. From an intervention perspective this is important, because **smaller households are likely to have fewer shared efficiency opportunities**, which may require different changes in behaviour compared to larger households.

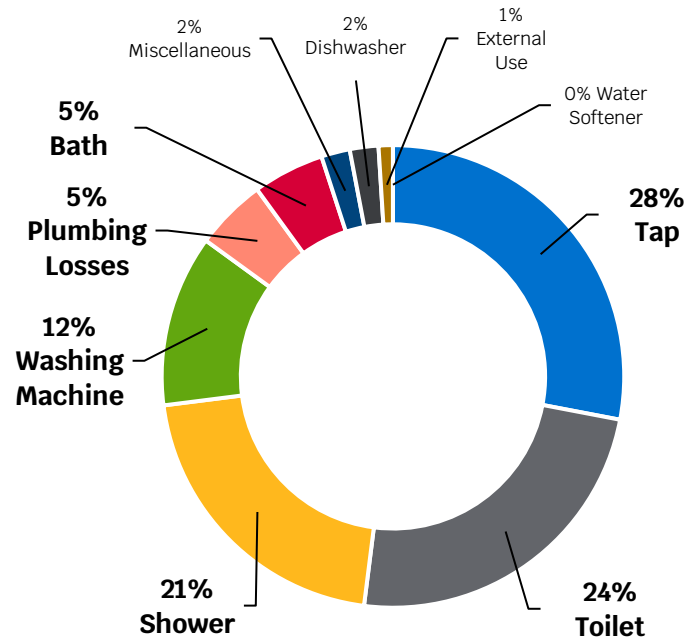
Further questions for future exploration

How do we ensure that comparing consumption across households is fair and that we are not simply penalising households for water use that is a natural consequence of the household makeup?

How do we think about different household types where there might be less shared efficiencies due to independent living within households. For example, Shared rentals, multigenerational living etc?

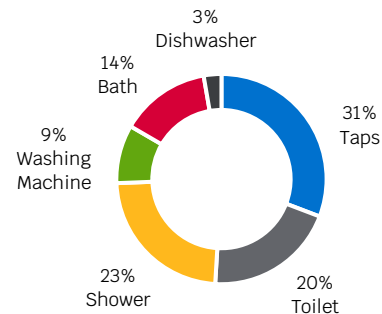


FOCUS Toilets, Showers and Taps drive the majority of household water use



OFWAT, 2018

The long-term potential for deep reductions in household water demand; small sample study
<https://www.ofwat.gov.uk/wp-content/uploads/2018/05/The-long-term-potential-for-deep-reductions-in-household-water-demand-report-by-Artesia-Consulting.pdf>



Energy Saving Trust, 2015

<https://energysavingtrust.org.uk/sites/default/files/reports/AHHW2%20final.pdf>

Insight

Taps, Toilets and Showers are key drivers of household consumption accounting for 72% of all water use in the home.

Evidence

Independent studies including an OFWAT commissioned study from 2018 (*The long-term potential for deep reductions in household water demand – Artesia Consulting; Fig 7, Page 10*) and a 2015 report from the Energy Saving Trust (*At Home with Water; Table 7, Page 46*) show similar measures albeit using small volume studies (~60 households each). Both papers appear to use a common primary data source that is also cited heavily elsewhere, specifically the 2016 paper from UKWIR.org (*Integration of behavioural change into demand forecasting and water efficiency practices*)

Implications

For such a fundamentally important piece of the puzzle, both for strategic understanding of the challenge and ongoing measurement, **there doesn't appear to be single, credible source of the 'truth'**

Even with conservative estimates on tap use, **more than half of all water consumption is focused around the bathroom**

Does this lend itself to **a more behaviourally focussed ask, with a clearer message** around water efficiency in the bathrooms rather than a broader amorphous ask to save water everywhere?

The limited data from this study suggests outdoor use matters less in total volume, but we know it can be large for certain households (gardens, hosepipes, paddling pools, pressure washers). Therefore, it's important to consider the findings outlined here in the context of small samples.

Future considerations

How do we scale beyond the existing limited data points to create, for example, a 2000 homes ongoing usage tracker using flow signatures to measure micro-components?

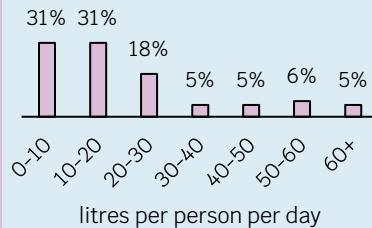


Headroom

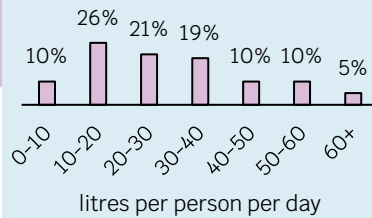
There are big differences in how much water people use when they shower, flush toilets and run taps.

High Headroom Activities

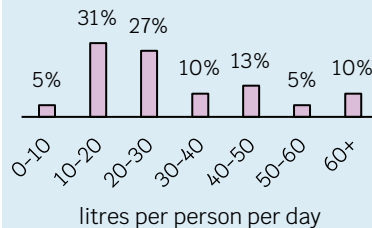
Showers



Toilets

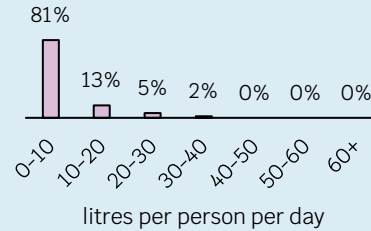


Taps

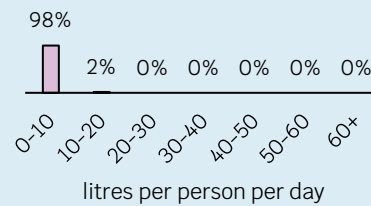


Lower Headroom Activities

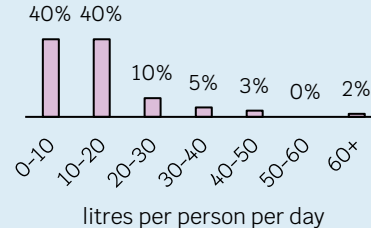
Baths



Dishwasher



Washing Machines



Insight

When normalised to usage per person per day, **micro components show significant variations in water consumption**

Evidence

The evidence outlined here is from the data annex of the previously mentioned OFWAT commissioned study from 2018 (*The long-term potential for deep reductions in household water demand – Artesia Consulting*).

Implications

If one part of the puzzle is total usage, the second equally important part is **headroom**, often **driven by technology** (power showers vs electric showers, toilet flush volumes) **as well as behaviours** (shower times)

Even when correcting for occupancy, there are substantial differences in usage across households. If 60% of the population use less than 20 litres per day when showering, why aren't the other 40% (shower type, duration etc). Similarly, if 36% of households in the study use less than 20 litres per person per day when flushing toilets, why can't the remaining 64%. **Do habitual bathroom activities lead to significant behavioural opportunities for headroom (shorter showers, fewer flushes etc)?**

Interventions should target high-variance end-uses, not just average usages, because **variance is a good indicator of headroom**.

As well as being responsible for volume, **toilets, showers and taps** are end-uses that also have high headroom suggesting they **are good candidates for behaviour change**.

It's important to note that there is a natural efficiency that comes with increased occupancy, so caution is needed when comparing per capita usage in a single occupancy household compared to a multiple occupancy household. For example, those using less than 20 litres a day for a shower may be more likely to come from high occupancy homes where pressure of resources (hot water availability, time) might lead to shorter showers to ensure all occupants can shower.

Future considerations

Are shorter shower messages 'fair' on the 60+% of households averaging less than 20 litres per person per day. Even on a conservative 6 litre per minute flow rate, occupants of these households are limiting themselves to 3-minute showers.

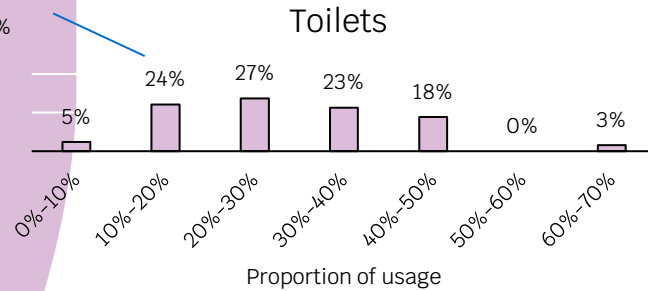
<https://www.ofwat.gov.uk/publication/demand-management-report-annex-e-data-tables-figures/>



Priorities The drivers of water consumption differ from household to household

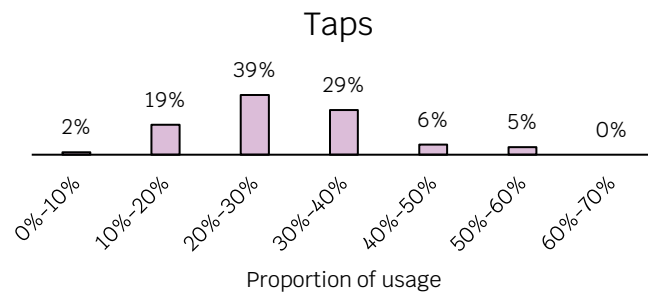
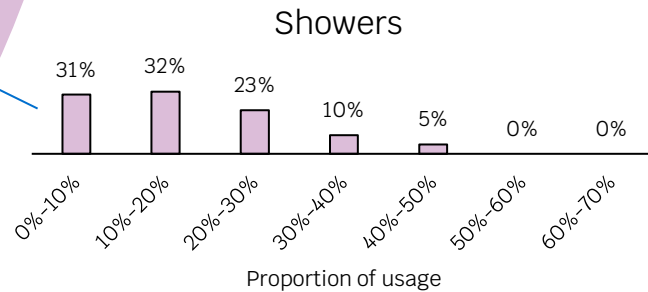
How to read

For 24% of households, Toilets make up 10-20% of total water use



How to read

For 31% of households, Showers make up less than 10% of total water use



<https://www.ofwat.gov.uk/publication/demand-management-report-annex-e-data-tables-figures/>

Insight

It's not simply about the volumes of water used but **the dominance of different water components within the home.**

Evidence

The evidence outlined here is from the data annex of the previously mentioned OFWAT commissioned study from 2018 (*The long-term potential for deep reductions in household water demand – Artesia Consulting*).

Implications

Removing volume and looking at usage profile shows that **there are substantial differences in how households prioritise water use**

For 44% of households, toilet flushing accounts for more than 30% of their use. And at the opposite end of the scale, for a third of households, showers account for less than 10% of their water use. Therefore, different households have different priorities when comparing micro-components.

To drive behaviour change, how do we think about **aligning messages with routines, not just efficiency.**

Once again, important to note that there is a natural efficiency that comes with increased occupancy, so caution needed when comparing per person usage in a single occupancy household compared to a multiple occupancy.

And remembering, that this data is from a small volume study (~60 households each)

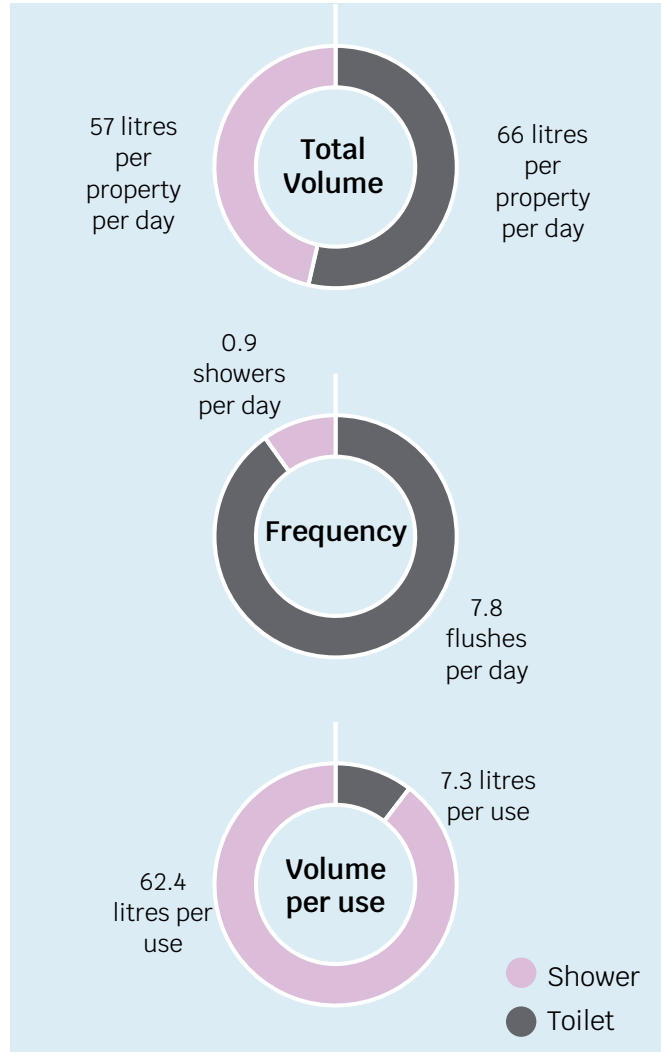
Future considerations

Can we think about defining audiences based on usage profile (and not necessarily demographics – see later slides) and what does this mean for real world targeting and messages

Do incentives and advice need to reflect household priorities?



Opportunities one saved flush is the same as showering for one minute less*



Cambridge Water, 2018

WRMP19 Household consumption forecast: Baseline forecast <https://www.cambridge-water.co.uk/media/2140/appendix-g-final-wrmp19-cambridge-household-consumption-forecast-v2.pdf>

Insight

Looking at only usage by each micro-component can disguise behavioural opportunities. The pattern of usage (frequency and volume per event) is as important as the total volume used.

Evidence

A Cambridge water report from 2018 uses the same UKWIR study for its source data which comprised a study of 62 households using a data logger to capture data and algorithms to interpret flow data into components. Note that the low frequency of showers may be a data logging issue where 2 or 3 showers happen in quick succession and are counted as one event

Implications

Regardless of accuracy, this demonstrates that while **showers and toilets use very similar volumes of water** across the day, **the way they use that water is very different**. Showers are low frequency, high volume events, while toilets are much higher frequency with much lower volumes per use.

A missed flush opportunity can be made up later in the day, whereas a missed shower opportunity means waiting until the next day. **Do higher frequency daily events lend themselves to better habit forming and/or chances of redemption?**

And, just as importantly, given **a 1-minute shower reduction is comparable to 1 less flush per day** (assuming ~6 litres for each), which is the behaviour that is easier to shift in a socially acceptable way.

Future considerations

Are toilet flushing and showering fundamentally different asks that are tied to ideas of identity. For example, is showering about 'how I look after myself' encompassing hygiene and comfort (cf research), while flushing is about not only hygiene, but also social norms.



Summary Audience groups, household composition and contextual insights

Audience	Demographics Mixed evidence but some suggestions that income, household size (occupancy) and age can influence usage.	Patterns There are distinct rhythms to water consumption across the day which can be segmented	Usage ...but, after adjusting for occupancy, they only show small differences in their average consumption	Individual Behaviours > Demographic Group The variation in per capita consumption within segments is likely more influential than the variation between them	Teens Households with teenagers show significantly higher water use, especially girls (13–19) in the mornings
	Occupancy It's easier to be more efficient when there are more of you	Focus Toilets, Showers and Taps drive the majority of household water use.	Headroom Across a day, there are big differences in how much water people use when they shower, flush toilets and run taps.	Priorities The drivers of water consumption differ from household to household	Opportunities One saved flush is similar to showering for one minute less



The Non-Household Audience who are they and what are their key behaviours

Non-household audiences are, of course, **connected to the social norms** and behavioural norms that other audiences in England and Wales are subject to

- Broader changes in the culture of water efficiency due to the campaign will, therefore, influence the attitudes that staff bring into the workplace and, directly, the behaviours that are common to both households and workplaces like turning off taps when not in use

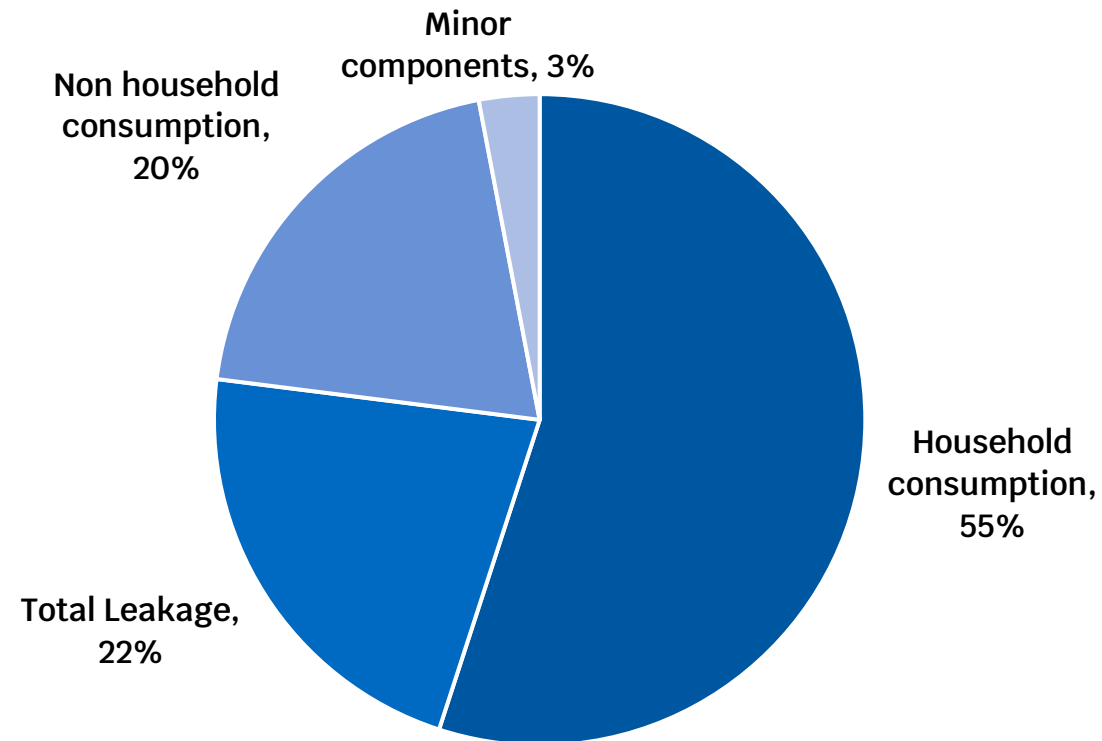
There are, however, likely to be very significant differences that need to be understood

- In **the characteristics of business types** and their overall levels of water consumption
- In the **drivers of behaviour**
 - **Behaviours that are common** across household and non-household (e.g. flushing, showering, washing up)
 - Behaviours that relate to the **pursuit of the core business activity** (the use of water in business operations)

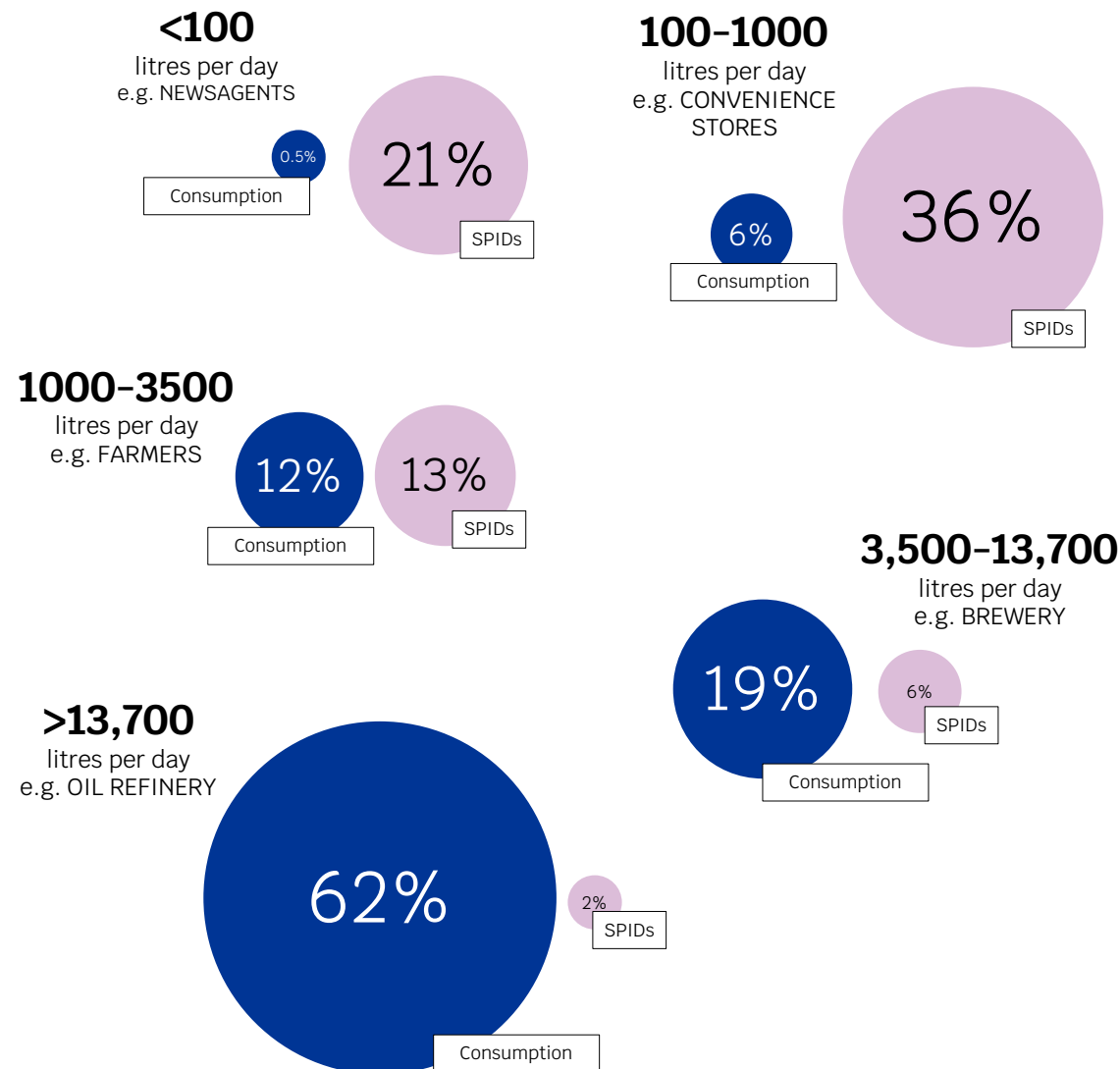


Important part of the challenge

After adjusting for leaks, Non-Households still account for 30% of the market



Uneven distribution of use There is a large skew in consumption across Non-Household supply



Insight

Water consumption among business (non-household) customers is **extremely uneven**. The large **majority** of customers are **small water users** (~57% use less than a 1000 litres per day), while a **small minority** of **large users** accounts for a **disproportionate share** of total non-household demand

Evidence

Customer Personas (MOSL 2021), <https://mosl.co.uk/chart/chartitems/large-sp-id-dashboard>

Implications

The skewed usage suggests that water efficiency efforts might yield the biggest gains by **focusing on those large water users** – a small number of SPIDs could deliver **significant savings**.

However, it also means that **most businesses have very low usage** so their **capacity to save may be limited**. In addition, these smaller businesses will use water in ways that are likely **similar** to those found at a **residential level (especially toilets and taps)** so individuals using them are likely to be picked up during the broader campaign. **Businesses are made up of people**.

Targeting and engaging with many smaller customers may deliver collective savings larger than efforts towards fewer larger customers. Any strategy needs to consider the **efficiency of change**.

Future considerations

Would **sector-specific targets** or programs (focusing on water-intensive industries vs. typical small businesses) better **address this skew in consumption**?



Low Awareness Many non-household customers simply don't know that there is an issue



Insight

Many non-household customers have low awareness of their water usage and of the growing water scarcity challenges

Evidence

“Non-Household (NHH) customers currently have relatively low awareness of the water scarcity issue or how they could make a difference” *Incentivising Non-Household Water Saving – Waterwise/Market Improvement Fund/MOSL 2025*

Almost half of businesses surveyed said they lack any data on their water use or do not monitor it regularly (*NH Customer Water Efficiency Survey Results – RWG Water efficiency Subgroup – 2020*)

Implications

Because awareness is low, few business customers feel pressured to act

This suggests that information and education campaigns could be important – if businesses understood future risks (e.g. droughts, supply deficits) and their role in preventing them, they might be more likely to change behaviours. However, it's important to consider this in the context of prioritisation and consequences as discussed in the next couple of slides

Low awareness also means that even initiatives such as offering water-saving devices might see low uptake unless accompanied by strong messaging about why water-saving matters

Without knowing their own usage, companies can't manage it; improving data visibility is important for building awareness

Future considerations

What's the role of customer expectation in driving awareness of the issue among businesses



Priority Conserving water doesn't have much financial impact for most businesses



Insight

For many businesses, [water efficiency is a low priority](#) relative to other concerns. Water bills are often a [small portion of operating costs](#), especially compared to energy, so companies are more likely to focus their time and investments on areas with bigger financial impact.

Evidence

“One of the key challenges facing the NHH sector is the relatively low level of customer awareness of the water scarcity issue, and [little incentive on customers to take action](#). For many businesses, [water is not a major cost](#) and water efficiency (WE) investment is [not always cost effective](#) (investment in energy saving for example delivers a much better return)” *Scoping the Water Efficiency Fund: Second Consultation* (<https://www.ofwat.gov.uk/wp-content/uploads/2024/05/1-Business-Stream.pdf>)

Recent surveys show over [half of businesses](#) have taken [no steps at all to save water](#) <https://www.ccw.org.uk/news/less-than-half-of-business-customers-are-taking-action-to-save-water>

Implications

Because [conserving water doesn't have much financial impact for most businesses](#), they may be less likely to initiate any action. This means that even easily available efficiency improvements (e.g. upgrading taps, toilets etc) may be [ignored if the payback is seen as too small or too slow](#)

This may mean that [incentives, grants, legislation etc](#) are needed to [move water up the priority list](#), otherwise most companies will continue to focus on what has [most impact on their bottom line](#)

Future considerations

What's the role of customer expectation in driving awareness of the issue among businesses



Consequences no significant consequences for business customers who do not improve their water efficiency

Insight

Currently, there are no significant consequences for business customers who do not improve their water efficiency or who waste water – costs remain manageable, and there's little pressure to change

Evidence

“There are no real consequences for businesses of doing nothing” *Scoping the Water Efficiency Fund: Second Consultation* (<https://www.ofwat.gov.uk/wp-content/uploads/2024/05/1-Business-Stream.pdf>)

“at the moment there are no immediate consequences for NHH customers if they continue as is. We know from elsewhere that businesses will respond to what matters to them – be it their customers' opinion, their ability to secure insurance or financing, their reputation and/or their bottom line.” *Water Efficiency Roadmap (RWG)* <https://mosl.co.uk/groups-and-forums/industry-groups-forums/retailer-wholesaler-group/rwg-water-efficiency-sub-group/rwg-water-efficiency-sub-group-documents/7588-rwg-we-road-map-revision-nov-2023-final/file>

Implications

With no pressure or penalties, businesses lack a sense of urgency to act on water efficiency. The benefits of saving water (reduced strain on supplies, environmental benefits) are mostly collective, while an individual business sees little personal benefit and incurs no punishment for doing nothing.

The implication is that relying on voluntary action may not be enough to drive meaningful change. To encourage businesses into conserving water, some form of consequence or incentive may need to be introduced.

The lack of consequences also ties back to low priority: if nothing happens when they ignore water efficiency, why would a business spend time and money to engage. These points are all addressed in the current Water Efficiency Roadmap from the Retailer-Wholesaler Group (RWG) Water Efficiency subgroup. See left.

Future considerations

Understanding the role of policy



RWG

THE OBJECTIVE

Businesses take responsibility for WE delivery. Embed WE as core business (as per CO2 reduction)

Retailers have financial capacity to deliver & report customer led WE.

Wholesalers can deliver NHH WE and can rely on the competitive market to deliver demand reduction.

RWG Water Efficiency Roadmap to Delivery – Nov 23 Update

THE CHALLENGE

NHH Customers

How do we stimulate engagement?

- (a) Increase awareness
- (b) Create an imperative to act
- (c) Provide support

Awareness: - leverage NHH target in national awareness raising strategy

Imperative: - economic signals: WE levy/tariff restructuring/value of water
- incentives: target obligation/progress reporting/penalties/rewards

Support: - information: smart metering, product labelling; options available
- funding support – water market/grants/levy proceeds
- efficient infrastructure – building regs etc.
- trading and credits

Water Market/Industry

How do we move the dial?

- (a) Understand what works, how much it will cost, and identify funding options
- (b) Develop collaborative delivery incentives and models
- (c) Ensure we can measure progress

What works: - leverage Ofwat Water Efficiency Fund
- stimulate innovation, trialling, sharing of best practice
- establish costs and funding options

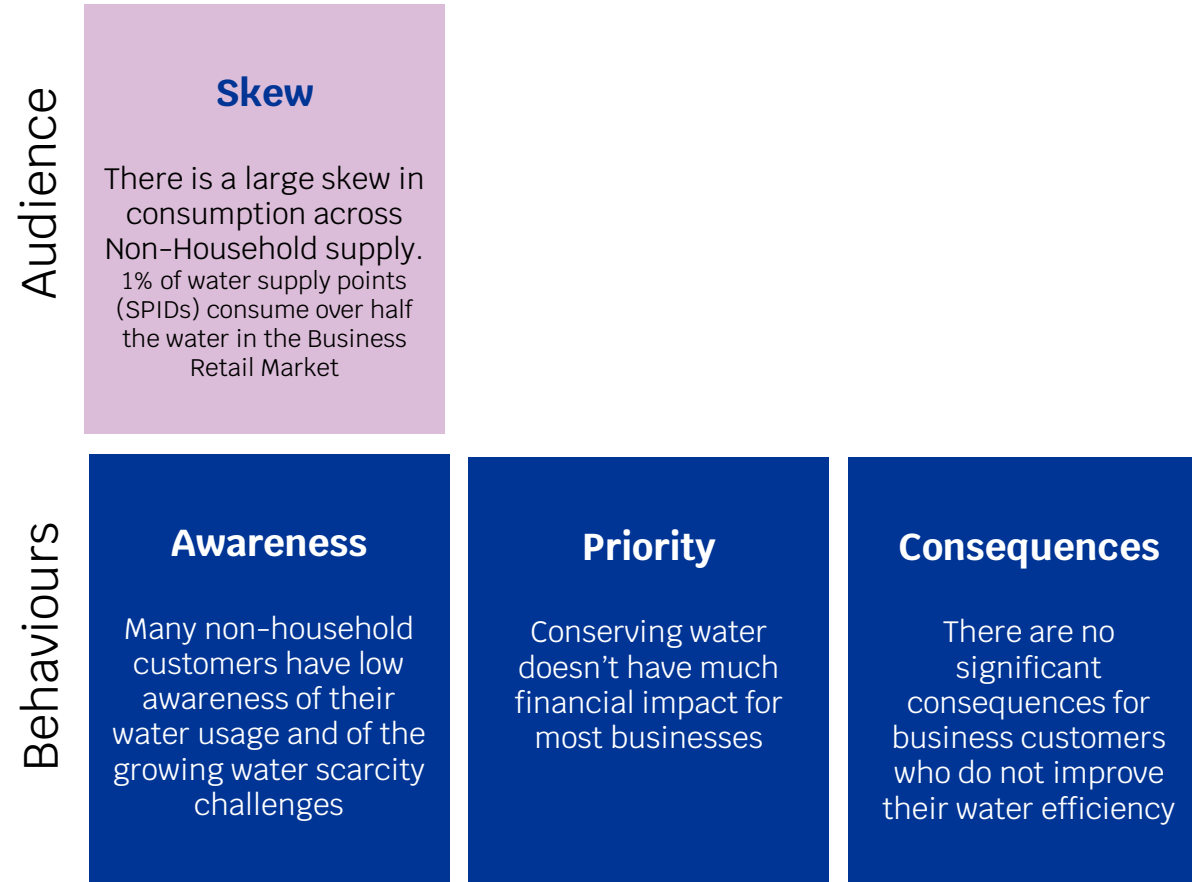
Collaborative delivery models AMP8 mechanisms that facilitate WE delivery and NHH competition – test, learn, share and adapt

Effective PR24 incentive design ODI that enables NHH WE delivery against National Water Target

Measurement & tracking method Accelerated smart meter rollout



Non Household Summary



Our approach

Context

- The Challenge
- The WEC
- The Brief
- Stakeholder insight and input
- Policy context

Behaviours

- Audiences & Behaviours
- **What Needs To Change**

Interventions

- Relevance & Effectiveness

Planning & deployment

- Analogous Challenges
- Strategy foundations
- Campaign and messaging guidelines
- Behaviour change system development (channels, partners, policy)
- Evaluation Considerations



Levers for change Attitudes, Feelings And Perceptions

Having identified audiences and the range of behaviours they exhibit, behaviour change best practice guides us to **understand the 'influences' on those behaviours** – the attitudes, feelings, perceptions and context that drives them

Our approach in gathering evidence is guided by the Behaviour Change Wheel toolkit* which:

- Provides a **systematic approach** to understanding the drivers of behaviour
- Makes it possible to connect 'what needs to change' with a substantial body of evidence on the types of **Interventions** and **Behaviour Change Techniques (BCTs)** which can be effective

*Michie, Atkins and Lou, 2014



Understanding the challenge Methodology for a Rapid Evidence Review of the academic (published) literature

Research Question

What is known from the existing **peer-reviewed evidence** about the influences on water conservation behaviour(s) and interventions to promote it in residential and business contexts?

Focus

- Prioritised **reviews of evidence** over individual studies (highest quality evidence)
- UK/Global North contexts
- Recent publications (since 2015)
- **N=12, referencing hundreds of primary papers**

Data Analysis

Target behaviours **thematically coded** + framework analysis for influence (COM-B; Michie et al., 2011), and intervention strategies (BWC; Michie et al., 2011 and BCTs; Michie et al., 2013).

Team

Review carried out by Different Drum supported by **Dr Ayse Lisa Allison** of the UCL Centre for Behaviour Change



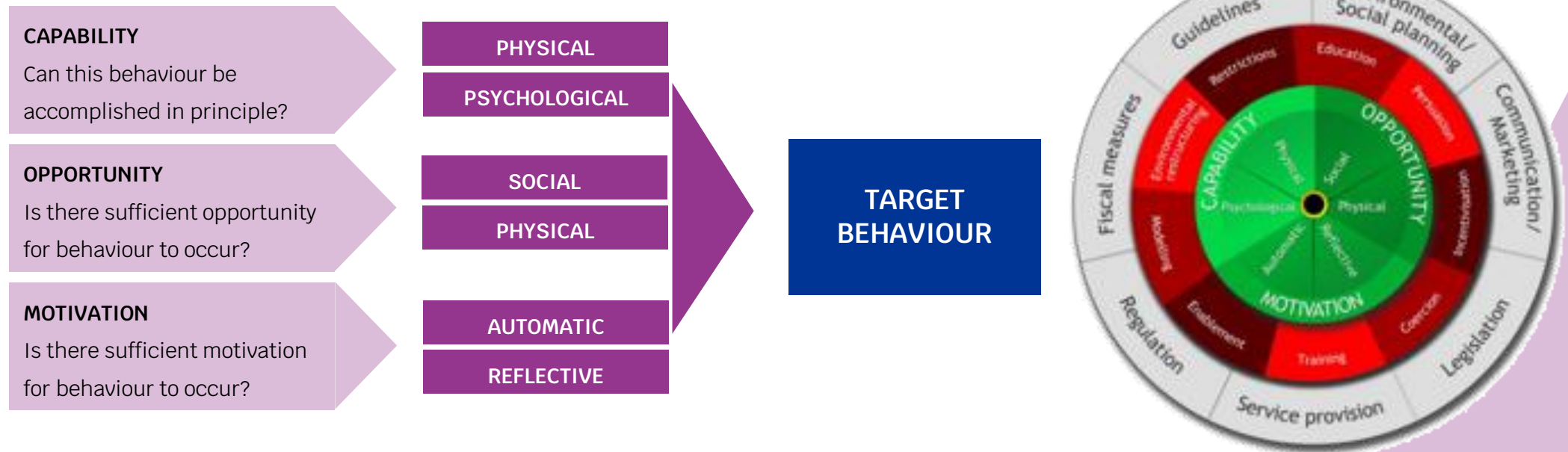
Rapid Evidence Review A synthesis of 12 systematic reviews covering hundred of papers

Study name	Author	DOI	Year
A Review of Intervention Studies Aimed at Domestic Water Conservation	N. Benzoni, Cassandra Telenko	https://doi.org/10.1007/978-3-319-40355-7_41	2016
Sustainable Water Consumption Practices among Household Consumers: A Systematic Literature Review	Jenny P. Salinas	https://doi.org/10.9734/air/2025/v26i41427	2025
Systematic Review of Household Water Conservation Interventions Using the Information–Motivation–Behavioral Skills Model	P. Ehret, Heather E. Hodges, Colin Kuehl, C. Brick, S. Mueller, Sarah E. Anderson	https://doi.org/10.1177/0013916519896868	2019
Price and Behavioural Signals to Encourage Household Water Conservation: Implications for the UK	Liangcai Lu, D. Deller, M. Hviid	https://doi.org/10.1007/s11269-018-2133-z	2018
Information-based interventions for household water efficiency in England and Wales: evidence, barriers and learning opportunities	Liangcai Lu	https://doi.org/10.1080/07900627.2019.1684244	2019
Applying social influence insights to encourage climate resilient domestic water behavior: Bridging the theory–practice gap	E. Lede, Rose Meleady	https://doi.org/10.1002/wcc.562	2018
Barriers and Motivators of Household Water–Conservation Behavior: A Bibliometric and Systematic Literature Review	Carolina Sánchez, Carla Rodríguez-Sánchez, Franco Sancho-Esper	https://doi.org/10.3390/w15234114	2023
Enhancing domestic water conservation behaviour: A review of empirical studies on influencing tactics.	S. Koop, A. J. V. Dorssen, S. Brouwer	https://doi.org/10.1016/j.jenvman.2019.06.126	2019
The influence of water-conservation messages on reducing household water use	Isaac B. Addo, M. Thoms, M. Parsons	https://doi.org/10.1007/s13201-019-1002-0	2019
Long-term water conservation is fostered by smart meter-based feedback and digital user engagement	A. Cominola, M. Giuliani, A. Castelletti, P. Fraternali, Sergio Luis Herrera González, Joan Carles Guardiola Herrero, J. Novak, A. Rizzoli	https://doi.org/10.1038/s41545-021-00119-0	2021
Holistic approach to water conservation behavior in urban environment: a systematic literature review	Sudheer Bhakta S, Lewlyn L. R. Rodrigues, Sriram K.V	https://doi.org/10.1080/1573062X.2022.2075765	2022
Social practice theory and household water demand: A review of literature and research evidence	Joseph Cahill, C. Hoolohan, Alison L. Browne	https://doi.org/10.1002/wat2.1719	2024



Evidence-gathering framework Capturing behavioural insights

Extracting the themes from the literature, we've then mapped them against the COM-B behavioural model that forms a key part of the Behaviour Change Wheel toolkit.



Expanding the evidence base Academic Rigour supported by industry detail

Theoretical framework derived from literature review defines the **factors** that drive water conservation



Insights from a review of 'grey' research and OFWAT research define how those factors currently play out in England and Wales, providing a picture of **what needs to change** to drive behaviour



Complete picture of what needs to change





Psychological Capability behavioural influences & what needs to change

Rapid Evidence Review

Influence

Key Concepts

Sources

Knowledge, awareness & behavioural regulation



Awareness of water scarcity and the consequences of it

Understanding that water is a limited resources and that shortages are real and recurrent increases people's motivation to conserve water.

Current England and Wales barriers:

Sources of waste not understood^{2,4,5}

Take water for granted³

Uk seen as wet/not a problem^{1,12}

Low awareness of scarcity^{1,2,11}

Knowledge, awareness & behavioural regulation



Awareness of own water use and conservation practices

People often underestimate their personal water use; improving awareness helps align perception with reality

Current England and Wales barriers:

Low awareness/underestimate usage¹⁴

Limited knowledge of how to save^{1,2,3,4,9,13}

Knowledge, awareness & behavioural regulation



Comprehension of bills and appliance information

Confusing bills and unclear appliance labels reduce understanding of the benefits of efficiency.

Current England and Wales barriers:

Concepts below suggested by literature; no consistent quantification of effect strength currently available

Cognitive Skills



Ability to interpret and act on water consumption and pricing feedback (e.g., smart meters, reports)

The impact of feedback depends on users' ability to understand and act on it.

Current England and Wales barriers:

Concepts below suggested by literature; no consistent quantification of effect strength currently available

- ❑ **Problem Recognition and Awareness of Scarcity** Understanding that water scarcity exists and that it requires behavioural or community response. 77% believe the UK is a 'wet and rainy country'⁹ and only 52% disagree that water use isn't a problem as it's 'often raining in the UK'¹⁴. 35% of people believe the UK is vulnerable to water shortages⁶.
- ❑ **Perceived Risk and Vulnerability** the extent to which people feel personally or locally at risk
- ❑ **Environmental and Climatic Context** Awareness of how local climate, geography, and environmental change (e.g. dry reservoirs, low rainfall) shape understanding of scarcity. Only 49% disagree that 'using less water in summer is only an issue in the summer as it's hotter/drier'¹⁴
- ❑ **Experience of Drought** makes scarcity tangible and memorable

Addo et al, 2019; Benzoni & Telenko, 2016; Bhakta et al, 2022; Cahill et al, 2024; Ehret et al, 2019; Koop et al, 2019; Lele & Meleady, 2018; Lu & Hviid, 2018; Lu, 2019; Salinas, 2025; Sánchez et al, 2023;

- ❑ **Awareness of personal water use** Understanding one's own water consumption and recognising gaps or misconceptions in that understanding. 94% underestimate their usage and over a fifth (21%) believe their household uses less than 20 litres per day when the average usage per person is 152 litres per day¹⁵
- ❑ **Awareness of conservation practices** Knowing what actions conserve water and when or how to apply them 50% of households could not identify highest water-use activity² and 94% underestimate their consumption³.
- ❑ **Confidence and ability to act** Feeling capable of applying one's awareness of use and conservation knowledge to actively reduce water consumption. 35% strongly agree they know what steps to take to save water and 48% 'somewhat' agree¹⁴, suggesting there is overconfidence and complacency¹⁴

Benzoni & Telenko, 2016; Cahill et al, 2024; Koop et al, 2019; Lu & Hviid, 2018; Lu, 2019; Sánchez et al, 2023 ;

- ❑ **Understanding of billing clarity and frequency** How clearly and frequently people receive water bills, and how this influences their understanding of use and costs.
- ❑ **Interpretation of appliance efficiency labels** Ability to interpret appliance efficiency labels and understand what they mean for household water use.
- ❑ **Understanding of tariffs and pricing structures** Awareness of how water pricing and tariff structures work, and how they relate to personal usage and conservation.
- ❑ **Perceived cost of water-efficient technology** Understanding and perceptions of the costs of water-efficient technologies and their affordability.

Addo et al, 2019; Ehret et al, 2019; Lu & Hviid, 2018; Lu, 2019; Salinas, 2025

- ❑ **Engagement with feedback technology** The ability and motivation to use digital tools (e.g., smart meters, apps) that provide water use information and feedback.
- ❑ **Understanding and response to feedback cues** How people emotionally process feedback symbols or messages and adjust behaviour accordingly.
- ❑ **Influence of social comparison** The impact of comparing one's own water use to others' on motivation and conservation behaviour.
- ❑ **Timing and frequency of measurement feedback** How often and when feedback is delivered influences users' ability to understand and act on it effectively.

Benzoni & Telenko, 2016; Cominola et al, 2021; Koop et al, 2019; Lele & Meleady, 2018; Lu & Hviid, 2018; Sánchez et al, 2023





Physical Capability: Influences

Influence

Key Concepts

Sources

Skills & resources



Practical skills for water-saving behaviours

Practical skills like leak repair, appliance use, and irrigation enable people to conserve water effectively in daily life.

Current England and Wales barriers:

Skills to use water-saving devices; strength and dexterity amongst older audiences⁵

- ☐ **Practical skills for maintenance and repair** The practical ability to identify, maintain, and repair leaks to prevent water waste.
- ☐ **Efficient use of household appliances** Knowing how to operate household appliances in a way that reduces unnecessary water use
- ☐ **Water-efficient landscaping and irrigation** The ability to manage outdoor spaces efficiently through irrigation timing, plant choice, and maintenance.
- ☐ **Adaptability of water-use habits** The capacity to adjust physical behaviours or routines to reduce water use when conditions demand.

Addo et al, 2019; Benzoni & Telenko, 2016; Sánchez et al, 2023



¹²³ See Sources & bibliography section for details



Physical Opportunity: Influences

Rapid Evidence Review

Influence

Key Concepts

Sources

Infrastructure & Access



Availability and affordability of water-saving technologies

Limited access to and affordability of efficient technologies restrict people's ability to adopt water-saving appliances and behaviours.

Current England and Wales barriers:

Below concepts suggested by literature; no consistent quantification of effect strength currently available

Infrastructure & Access



Presence and accessibility of meters and feedback systems

Where meters, feedback channels, and ICT systems are available, people can monitor their water use and act on it more effectively. These effects can be long term

Current England and Wales barriers:

Access to devices¹

Infrastructure & Access



Tariff structures, financial incentives, and affordability

Tariff design and financial incentives influence conservation behaviour, but affordability can limit participation and uptake

Current England and Wales barriers:

Cost can be an effective prompt, but not relevant to the unmetered^{1,11,14}

Many households unmetered (c60% have meters)

Infrastructure & Access



Situational conditions (climate, property, baseline consumption)

Climate, property characteristics, and existing water use levels shape both the need and capacity for conservation.

Current England and Wales barriers:

Concepts below suggested by literature; no consistent quantification of effect strength currently available

- **Affordability of water-saving technologies** The perceived or actual expense of water-efficient technologies that restricts uptake among households.
- **Access to and availability of efficient appliances** The ease with which people can obtain or install efficient appliances and fixtures to support conservation.

Salinas, 2025

- **Access to water meters and in-home displays** Having a meter or in-home display in the property enables people to see and track their water use.
- **Availability of feedback channels** People need accessible feedback (reports, displays) to recognise overuse and adjust behaviour. *People with water meters are significantly more likely to say 'it's very important for people like me to use less water in home' vis those without 38% vs 29%¹⁴*
- **ICT provision and connectivity** Smart feedback only works when the digital infrastructure (apps, data/connectivity) is in place.

Cominola et al, 2021; Lu, 2019

- **Cost can be an effective prompt, but not for unmetered** but water pricing is often a small portion of bills. Unmetered households do not see a direct financial consequence for their usage. *Unmetered customers are significantly less likely to say they would fit water-saving devices (22%) compared to metered customers (83%)¹⁴*
- **Understanding of tariff structures** The way water tariffs are structured influences how clearly people understand the cost implications of their water use.
- **Impact of pricing incentives on behaviour** Financial incentives and pricing can motivate people to conserve water if they are well-communicated and perceived as fair.
- **Affordability constraints** When affordability is low, people may prioritise cost savings or avoid adopting efficient technologies despite conservation awareness.

Lu & Hviid, 2018; Lu, 2019; Sánchez et al, 2023

- **Climate and seasonality** Local climate and seasonal conditions shape how people perceive scarcity and how much they can realistically conserve.
- **Tenants Can't alter property**¹⁴ Renters face a significant barrier as they are often unable to make physical alterations to their property, such as installing water-efficient fixtures¹⁵.
- **Property characteristics** The physical characteristics of a property influence water demand and the scope for conservation actions.
- **Baseline consumption levels** The starting level of water consumption determines how much reduction is achievable through interventions.

Benzoni & Telenko, 2016; Cahill et al, 2024; Koop et al, 2019; Lele & Meleady, 2018; Lu & Hviid, 2018; Lu, 2019; Sánchez et al, 2023



Influence

Key Concepts

Sources

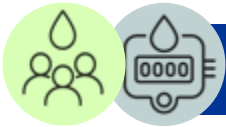


Social Opportunity: Influences

Rapid Evidence Review

Social Norms & Context Descriptive norms (perceptions of what others do) Seeing or believing that others are saving water makes conservation feel normal and expected. Current England and Wales barriers: Hygiene norms (increasing)^{2,3,4,9} Social norms not established^{5,12,14}	Social Norms & Context Injunctive norms (approval/disapproval) Social approval and fear of disapproval motivate people to align with community expectations for water-saving. Current England and Wales barriers: Social norms not established^{5,14}	Social Norms & Context Identity framing and in-group norms When water-saving aligns with shared group identity or values, people adopt it as part of who they are. Current England and Wales barriers: Campaigns not aimed at me² Sense of shared responsibility needed^{3,4,5,12}	Social Norms & Context Social comparison and benchmarking Comparing one's own water use to peers or averages encourages reductions, especially when framed competitively. Current England and Wales barriers: Below concepts suggested by literature; no consistent quantification of effect strength currently available	Social Norms & Context Trust and credibility of messengers and institutions People are more likely to act when conservation messages come from trusted, credible sources. Current England and Wales barriers: Below concepts suggested by literature; no consistent quantification of effect strength currently available
☐ Perceived community behaviour Thinking "people like me here save water" makes saving feel normal. ☐ Neighbour comparisons Seeing/guessing how neighbours use water shapes one's own use. ☐ Visibility of others' actions When conservation is visible (e.g., dry gardens), people copy it. ☐ Social norms not established; people do most reported that they rarely, if ever, discuss their water use with friends or family¹⁴	☐ Social Approval People save water to gain approval/respect. ☐ Fear of disapproval People avoid visible waste to avoid being judged. ☐ Normative pressure to conform Expectations from others push people to comply with conservation.	☐ Group belonging "People like us save water" strengthens participation. <i>There are significant differences between age groups in terms of 'how important if at all, is using water in the home for people like me..' with 29% of 18-34 saying it is very important vs 40% of 55+¹⁴</i> ☐ In-group approval Positive signals from one's group reinforce saving. ☐ Identity-based framing When saving water fits identity (e.g., good neighbour), uptake rises.	☐ Peer Comparisons People adjust when they see others using less ☐ Benchmarking Seeing usage vs. average prompts reductions. ☐ Ranking Friendly competition can drive extra saving.	☐ Trust in water providers People act more when they trust the company. ☐ Credible messengers Clear, credible sources increase compliance. ☐ Institutional trust General trust in institutions supports message uptake.
Ehret et al, 2019; Koop et al, 2019; Salinas, 2025; Sánchez et al, 2023	Lele & Meleady, 2018; Lu, 2019; Sánchez et al, 2023	Ehret et al, 2019; Lele & Meleady, 2018	Koop et al, 2019; Lele & Meleady, 2018; Lu & Hviid, 2018; Lu, 2019	Koop et al, 2019; Lu & Hviid, 2018





Physical & Social Opportunity: Influences



Socioeconomic status and household composition

Household size, income, and family makeup influence how easily people can adopt water-saving behaviours

Current England and Wales barriers:

- ☐ **Higher household income** correlated with increase usage (regardless of education/efficiency intentions)
- ☐ **Cost of water saving devices** Finances shape what changes are feasible.
- ☐ **Household size** More people = higher use and harder cuts.
- ☐ **Presence of children** Kids can increase essential water use
- ☐ **Household demographics** Sanchez (e.g., tenure) affect ability to change.

Ehret et al, 2019; Lu & Hviid, 2018; Sánchez et al, 2023

Influence

Key Concepts

Sources





Reflective Motivation: Influences

Rapid Evidence Review

Influence

Values, beliefs & identity



Environmental concern, attitudes, and pro-conservation values

Concern for the environment and supportive attitudes towards conservation motivate water-saving when they align with personal values.

Current England and Wales barriers:

- Intention not backed by knowledge¹
- Too much effort to save²
- Consequences not personal or local^{2,11}
- No self-identify as 'water saver'⁵

Values, beliefs & identity



Perceived responsibility and efficacy

People act when they feel responsible and believe their efforts make a difference; feelings of futility weaken motivation.

Current England and Wales barriers:

- I'm already trying^{5,6,10}
- 'Say-do' gap¹
- It's the sector^{2,5,10,11}
- Weak environmental & climate link^{6,11}
- No 'meaningful' actions I can take¹²
- Too many 'asks' ^{1,2,5}

Key Concepts

- ☐ **Consequences Concern** Environmental/consequences concern motivates people to intent to use less water
- ☐ **Pro-conservation values** Seeing water saving as part of personal or societal values encourages sustained action. While many agree it's their responsibility to use less water, understanding why strengthens this obligation; 85% of those who say it they understand why it is important to save water agree that it's their responsibility to save water vs 77% of 35% of those that disagree and 77% of all those surveyed¹⁴
- ☐ **Attitudes toward conservation** Supportive attitudes increase willingness to act.
- ☐ **Cost saving is a key motivator:** 52% of people said it was their top reason to use less water at home¹⁴

- ☐ **Sense of responsibility** Feeling personally responsible increases motivation to act.
- ☐ **Perceived efficacy** Belief in one's ability to make a difference strengthens conservation efforts.
- ☐ **Perceived Futility** Believing one's efforts don't matter undermines motivation.

Sources

Cahill et al, 2024; Koop et al, 2019; Salinas, 2025; Sánchez et al, 2023

Ehret et al, 2019; Koop et al, 2019; Sánchez et al, 2023



¹²³ See Sources & bibliography section for details



Automatic Motivation: Influences

Influence

Emotions



Emotional and moral drivers

Emotional reactions like guilt and pride, combined with a sense of moral duty, strongly influence water-saving motivation.

Current England and Wales barriers:

Anger at industry¹⁰

Apathy/emotional distance¹⁰

Fear leading to inaction²

Low trust in sector/advice^{2,10,12}

Habits



Habits and routines

Water use is shaped by habits and routines; breaking automatic behaviours needs clear cues and feedback

Current England and Wales barriers:

Behaviour is habitual^{1,2,4,11}

Emotions



Gamification and engagement tools

Playful tools like badges, humour, and interactive feedback maintain engagement and motivation to conserve water.

Current England and Wales barriers:

Concepts below suggested by literature; no consistent quantification of effect strength currently available

Key Concepts

- ☐ **Guilt and moral duty** Guilt and a sense of duty push people to save water.
- ☐ **Pride and satisfaction** Positive emotions reinforce continued water-saving behaviour.
- ☐ **Frustration with constraints** Frustration can weaken motivation if people feel limited.
- ☐ **Water use is often enjoyable** 15% strongly agree and 26% slightly agree that 'I enjoy things that need water and I am not willing to give them up'¹⁴

- ☐ **Habitual water use** Many water-use behaviours happen out of habit, not deliberate choice.
- ☐ **Established routines** Everyday patterns determine much of total water use, *Ofwat research found that some water-saving behaviours were more habitual, such as using a bowl for the washing up, waiting for a full washing machine load or turning the tap off when brushing teeth.*¹⁴
- ☐ **Breaking Automacity** Changing automatic habits requires prompts or feedback to disrupt routines.

- ☐ **Gamified incentives** Games and symbolic rewards encourage ongoing engagement.
- ☐ **Humour in messaging** Humour makes water-saving messages more appealing and relatable.
- ☐ **Engagement through feedback** Active engagement helps maintain motivation over time.

Sources

Addo et al, 2019

Sánchez et al, 2023

Cominola et al, 2021; Koop et al, 2019

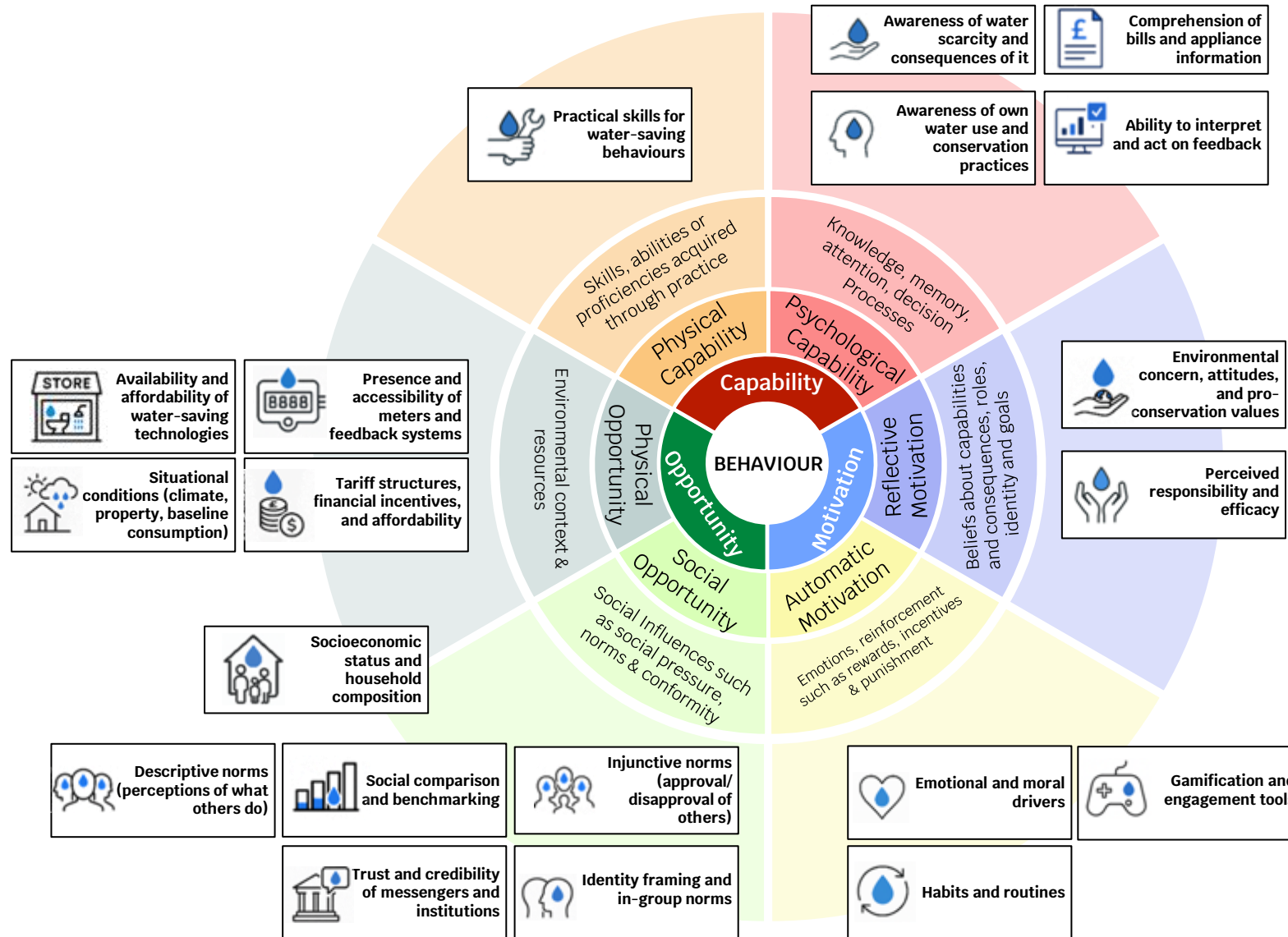


¹²³ See Sources & bibliography section for details

Insight Summary

Currently, positive influences on behaviour are weak across all COM-B dimensions

Rapid Evidence Review



Our approach

Context

- The Challenge
- The WEC
- The Brief
- Stakeholder insight and input
- Policy context

Behaviours

- Audiences & Behaviours
- What Needs To Change

Interventions

- **Relevance And Effectiveness**

Planning & deployment

- Analogous Challenges
- Strategy foundations
- Campaign and messaging guidelines
- Behaviour change system development (channels, partners, policy)
- Evaluation Considerations



Levers for change Intervention Strategies

- The Behaviour Change Wheel approach provides a way of categorising '**interventions**', or the types of activities that influence behaviour
- The rapid evidence review used this categorisation to **report on the interventions** in the water efficiency space
 - E.g. **Environmental Restructuring**, which pertains to modifying the **physical context** in which water is used
- Each of the reported intervention have demonstrated **statistically significant effect sizes** in driving down water consumption



Interventions strategies what the evidence says will work (12 systematic reviews)

COM-B Relevance	Interventions	 Coercion Creating expectation of cost or penalties	 Education Increasing knowledge or understanding	 Enablement Increasing means/reducing barriers	 Environmental Restructuring Changing the physical/social context
		□ Restriction notices & penalties (fines, outdoor watering bans)	□ Pamphlets, tip sheets & technical advice (leaflets, "how-to" lists, conservation tips) □ Public awareness campaigns on scarcity (TV/radio ads, digital messaging, local water facts) □ Appliance/device labels at point of use (litres per minute labels on showers/lawns/hoses)	□ Personalised & tailored feedback reports (mailed/emailed reports, online dashboards, tailored tips) □ Commitment devices & pledges (signed pledges, normative door hangers, dissonance surveys) □ Gamification & engagement tools (Drop! card game, SmartH2O badges/points) □ Retrofitting through home visits and appliance upgrades (with embedded training/advice)	□ Smart meters & In-Home Displays (real-time dashboards, appliance-level data, leakage alerts); these deliver long term effects and can sustain the (typically) short impact of communication campaigns □ Real-time/appliance feedback devices (shower LEDs and timers, numeric displays) □ Alternative system design & practice change (e.g. alternative bathing practices, clothes reuse, reconnecting water cycles)
		     	     	     	     



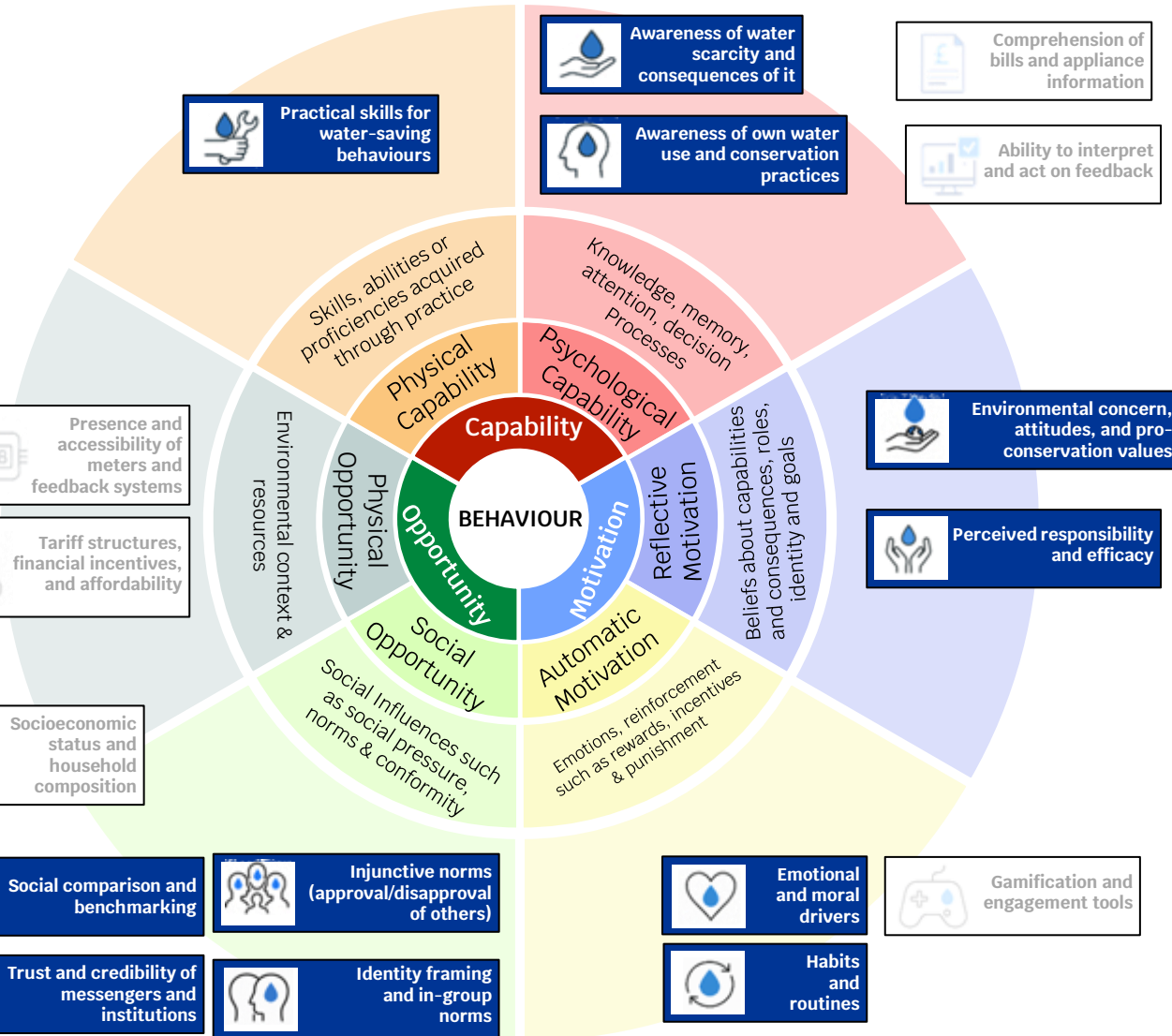
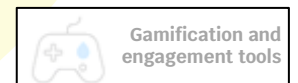
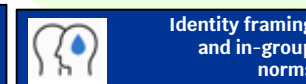
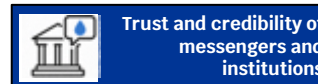
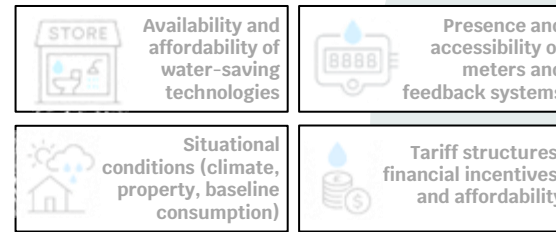
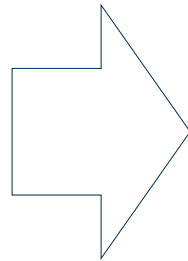
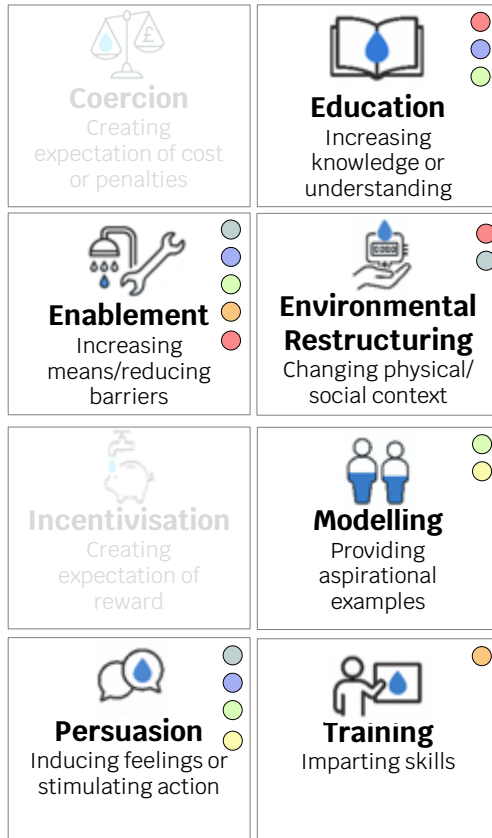
Interventions strategies what the evidence says will work (12 systematic reviews)

COM-B Relevance	Interventions	 Incentivisation Creating expectation of reward	 Modelling Providing aspirational examples	 Persuasion Inducing positive/negative feelings or stimulating action	 Training Imparting skills
		Financial incentives & tariff structures (block tariffs, seasonal pricing, monetary savings info)	- Peer comparison & benchmarking (reports, neighbour averages, competitive ranks) - Use of relatable people in campaigns - Utilising 'Dynamic Norms'; communicating how the social norm is changing amongst some, motivating 'preconformity' - Presenting 'normative information' from 'low usage' households (e.g. in low water households 78% take shorter showers) - Targeting high users with tailored normative messaging	- Mass media campaigns with clear behavioural targets (e.g. no hosepipes, shower timers) - Norm-based & identity-framed messaging (neighbour comparisons, community identity, in-group appeals) - Message framing approaches (gain/loss appeals, assertive vs suggestive tone, scarcity cues) - Emotional & moral appeals (guilt/shame SMS primes, animated visualisations of dying fish) - Humour-based messages (cartoonish slogans, light-hearted campaign material)	- Workshops & capacity-building (standalone irrigation or conservation workshops) - Retrofitting through home visits and appliance upgrades (with embedded training/advice)
		     	     	     	     



WEC Roles For Communication: what behavioural influences should it target

Relevant Intervention Strategies



WEC Roles For Communication

Executive Summary Findings from the Walnut/OFWAT research are consistent with literature review

Ofwat commissioned further research into this topic in 2025. Results will be published in January 2026. Key outputs from the executive summary are presented verbatim below

1

Raise awareness

The public need greater education around the issue of water shortages and more information on where their water comes from.

4

Drive personal responsibility

Increase personal relevance and ownership of the issue to underpin understanding and desire to make a behaviour change.

2

Improve self awareness

Address the perception vs. reality gap so that the public become more aware of their own behaviours – and where they can make changes.

5

Motivate with a cost argument

Showing how this will impact them monetarily should drive action.

3

Emotionally engage

The public need to feel like they can personally make a difference and understand how to do so.

6

Tackle hygiene worries

This will continue to be a key barrier for many if embedded perceptions around hygiene aren't addressed.

OFWAT Research [hyperlink here](#). Executive summary verbatim.

Key Interventions what research tells us is most likely to lead to sustainable behaviour change

Rapid Evidence Review

✓ Most effective strategies

Contextualised information

Messages delivered during droughts, retrofitting visits or other moment that raise salience are more impactful.



Point-of-use prompts

Devices like shower timers, tap monitors, and appliance stickers provide immediate feedback and consistently reduce usage..



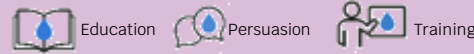
Social norms & identity Appeals

Personalised neighbour comparisons, dynamic norms, community framing, and injunctive cues (e.g. smiley faces) drive strong and lasting behaviour change.



Integrated approaches

Combining Motivation + Skills + Information (e.g. IMB model) yields strong effects.



Smart feedback systems

Real-time data via smart meters and tailored reports lead to sustained reductions.



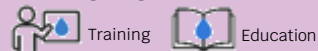
Cognitive dissonance & framing

Highlighting value-action gaps and using one-sided or suggestive messages (not assertive) / engagement. E.g. 'try x', not 'stop doing x'



Knowledge transfer

It is important to make people receptive to conservation and is effective in driving change short-term, but is ineffective by itself in fostering long term behavioural change



✗ Least effective strategies

Information alone

Generic awareness campaigns, tip sheets, and technical advice often have negligible or even negative effects.

Web portals & passive Channels

Low engagement and limited impact.

Judgemental feedback

Emoticons or competitive rankings can backfire, especially for low water users

Short-term interventions

Effects decay quickly unless reinforced.

Our approach

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Interventions

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- **Analogous Challenges**
- Strategy foundations
- Campaign and messaging guidelines
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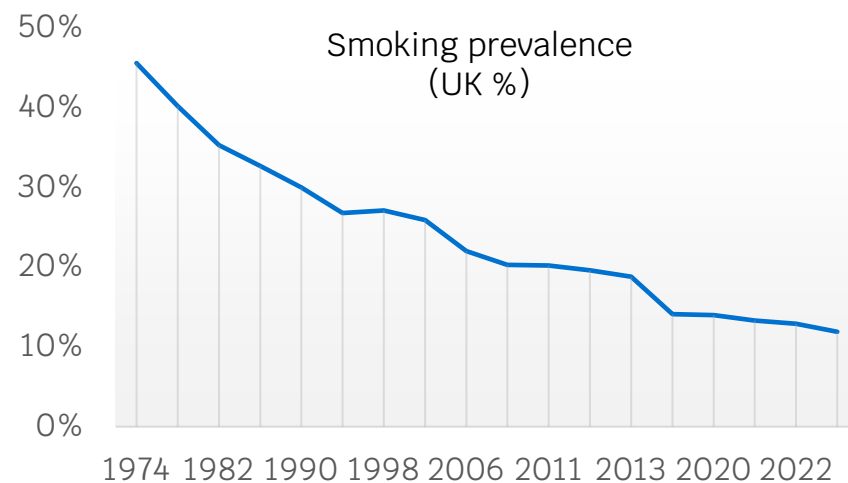
Learning from Success similar behavioural challenges, different sectors

- The UK has had great success in driving **behavioural change** on a nationwide scale and over extended time (15yr+) periods
- As part of this process, we synthesised the outputs of behaviour change case studies for **smoking cessation**, **carbon emission reduction** and **single use plastics use**
- This process showed that there are **common factors** behind the success of these behaviour change campaigns that can inform the Water Efficiency Campaign and the **ecosystem of partners and stakeholders** that must work together to drive change across England and Wales



Parallels and learnings The c50 year public health journey on smoking

1950	1960	1970	1980	1990	2000	2010	2020
Tobacco and cancer links established by epidemiologists	Royal College of Physicians published recommendations TV ad ban Taxation increase		First National No Smoking Day (1984) Natural Born Smoker: UK's first stop-smoking TV advert (1984) ⁴		Smoking support services launched Indoor smoking ban (2007)	Quit kit launched (2010) Stoptober launched (2012)	



Critical success factors

- Foundational scientific proof ('why')
- Sustained, consistent and credible medical advocacy
- Consistent behavioural ask ('quit')
- Progressive legislation
- Integrated high-visibility campaigning
- Delivering 'Why (Harms)', 'Enablement (How)' and social proofing / participation
- Community support



Challenges overcome

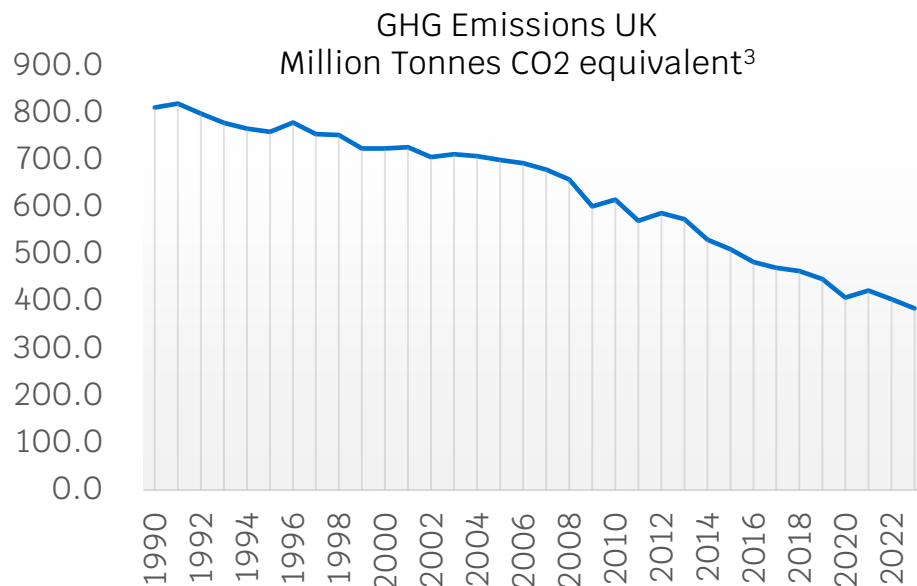
- Public initially unfamiliar with science
- Government reluctance to lose tax revenue
- Misinformation/sewing of doubt by tobacco industry
- Appealing 'cool' image and visible/ social nature of act of smoking

- <https://www.adph.org.uk/resources/the-history-of-tobacco-legislation/>
- <https://ash.org.uk/uploads/Smoking-Statistics-Fact-Sheet.pdf?v=1697728811#:~:text=age%2016+3-,%25%201974,14.1%2014.0%2013.3%2012.9%2011.9>
- <https://www.theguardian.com/society/2014/oct/07/smoking-falls-lowest-level-uk-recording-started-1940s>



Parallels and learnings The c35 year cultural journey on climate change

1950	1960	1970	1980	1990	2000	2010	2020
	Systematic CO2 measurements begin and show CO2 rising (1958)	'Global warming' first prominently used as a phrase (1975)	Intergovernmental Panel on Climate Change (IPCC) formed to assess evidence (1988).	Kyoto protocol 2008 sets 5% target for GHG reduction		Paris Agreement (2015) sets 1.5% increase limit	57% UK adults say it is an 'important' issue 76% have made 'lifestyle changes' ³



Critical success factors

Clarity of the science – unambiguous data from the IPCC established urgency.

Extreme weather made threat tangible.

A period of cross-party consensus supported the agenda.

United media – the BBC and other media effectively amplified the scientific message.

Awareness of the science and potential personal impact built over time



Challenges overcome

Active misinformation campaign from groups and businesses motivated to dampen climate change awareness

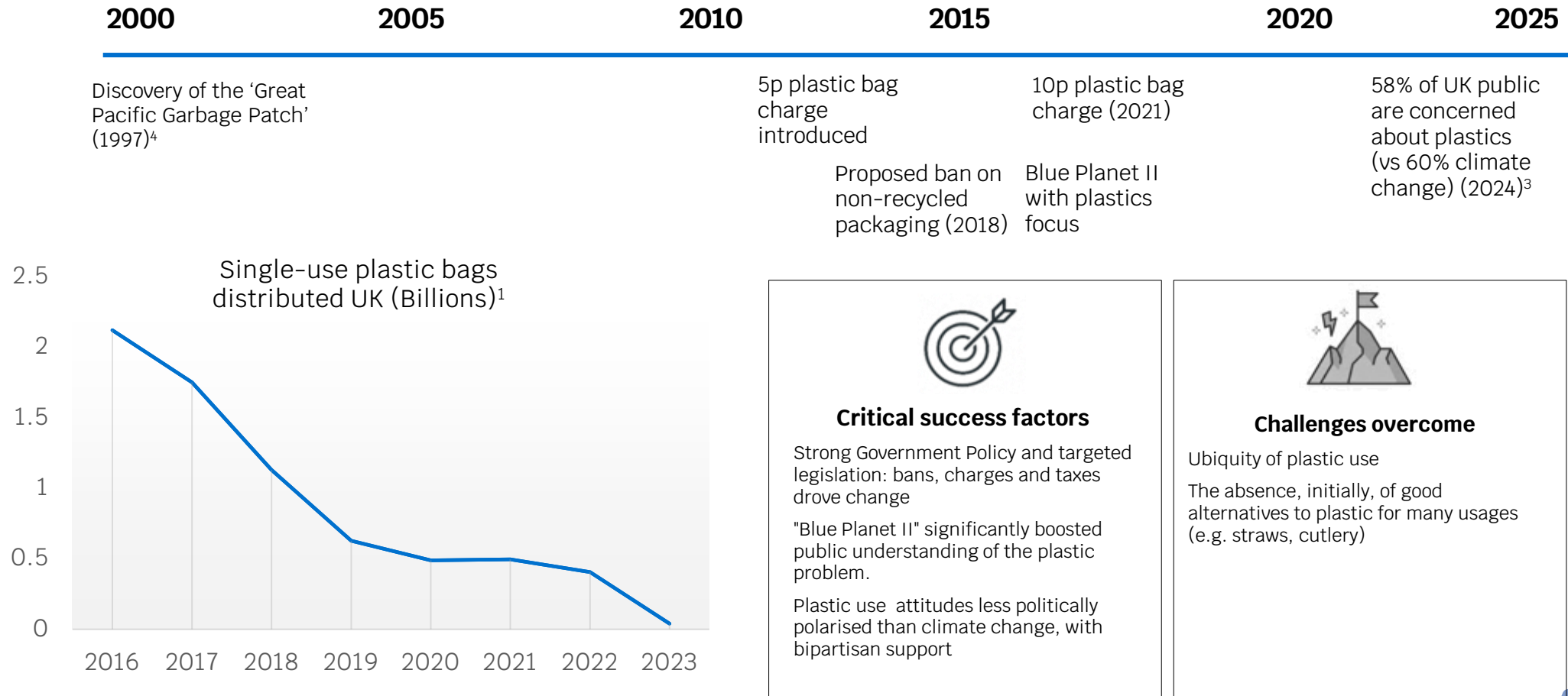
The impact of climate change for many years appeared to be far in the future, leading to apathy

For many their own personal impact seems (or seemed) irrelevant in the face of the scale of the problem

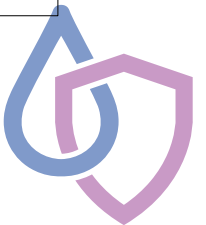
- <https://www.bbc.co.uk/news/science-environment-15874560>
- <https://commonslibrary.parliament.uk/the-history-of-global-climate-change-negotiations/>
- <https://www.ons.gov.uk/economy/environmentalaccounts/articles/publicandbusinessattitudestotheenvironmentandclimatechangeinbritain/2024>
- <https://www.gov.uk/government/statistics/final-uk-greenhouse-gas-emissions-statistics-1990-to-2023>



Parallels and learnings The c15 year cultural journey on plastics



- <https://www.gov.uk/government/publications/carrier-bag-charge-summary-of-data-in-england/single-use-plastic-carrier-bags-charge-data-for-england-2023-to-2024--2>
- <https://www.gov.uk/government/publications/single-use-plastic-carrier-bags-why-were-introducing-the-charge/carrier-bags-why-theres-a-5p-charge>
- <https://www.birmingham.ac.uk/documents/college-eps/plastics/plastics-survey-report-final.pdf>
- <https://www.bbc.co.uk/future/article/20240115-visualising-the-great-pacific-garbage-patch>



Learnings from successful UK long-term behaviour change campaigns Five key themes

Credibility

A rationale for change, backed by public, visible scientific consensus
(c.f. Royal College of Physicians smoking recommendations)

Clarity and consistency of ask

Making the behavioural request simple, understandable and consistent
(c.f. Quit Smoking, never cut down or smoke less)

Commitment over the long term

Stories and efforts must be sustained year after year, not turned on and off or altered

Coherency across partners, stakeholders and all intervention strategies

A wider behaviour change ecosystem equipped with policy interventions, collateral, tools and support

A 'reset' moment

A highly-visible moment in popular culture kicks off or restarts momentum, disrupts apathy, provokes conversation and provides an opportunity to reappraise social norms
(c.f. RCF recommendations, Kyoto Summit, Blue Planet II, Stoptober launch)

Sources: Different Drum summary of Commons Library, BBC and Gov.uk reporting on Climate Change, Smoking and Plastics behaviour change strategies



Proven interventions deliver change using the same building blocks required for water efficiency

Intervention Strategies Used

 Coercion Creating expectation of cost or penalties	 Education Increasing knowledge or understanding
 Enablement Increasing means/reducing barriers	 Environmental Restructuring Changing physical/social context
 Incentivisation Creating expectation of reward	 Modelling Providing aspirational examples
 Persuasion Inducing feelings or stimulating action	 Training Imparting skills

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Making the behavioural request simple, understandable and consistent (c.f. Quit Smoking, never cut down or smoke less)

Commitment over the long term

Stories and efforts must be sustained year after year, not turned on and off or altered

Coherency across partners, stakeholders and all intervention strategies

A wider behaviour change ecosystem equipped with policy interventions, collateral, tools and support

A 'reset' moment

A highly-visible moment in popular culture kicks off or restarts momentum, disrupts apathy, provokes conversation and provides an opportunity to reappraise social norms (c.f. RCF recommendations, Kyoto Summit, Blue Planet II, Stoptober launch)

Sources: Different Drum summary of Commons Library, BBC and Gov.uk reporting on Climate Change, Smoking and Plastics behaviour change strategies



Our approach

Context

- The Challenge
- The WEC
- The Brief
- Stakeholder insight and input
- Policy context

Behaviours

- Audiences & Behaviours
- What Needs To Change

Interventions

- Relevance & Effectiveness

Planning & deployment

- Analogous Challenges
- **Strategy foundations**
- Campaign and messaging guidelines
- Behaviour change system development (channels, partners, policy)
- Evaluation Considerations



Water Efficiency Campaign Strategy Summary

Relevant Intervention Strategies

 Coercion Creating expectation of cost or penalties	 Education Increasing knowledge or understanding
 Enablement Increasing means/reducing barriers	 Environmental Restructuring Changing physical/social context
 Incentivisation Creating expectation of reward	 Modelling Providing aspirational examples
 Persuasion Inducing feelings or stimulating action	 Training Imparting skills

- **The COM-B model** is built upon the thesis that **Capability, Opportunity and Motivation** are all required to enable a behaviour; in terms of water, peoples' **Motivation** and **Capability** to save water are underdeveloped
- The UK's lack of **coherent** understanding of why water efficiency matters provides a different context to most contemporary behaviour change scenarios (e.g. energy, plastics, smoking).
- Increasing **motivation** (from it's low base) by **persuading** and **changing attitudes** and **belief** in efficiency as 'worth caring about' is likely to have an outsize effect; As part of this we will also be raising **knowledge** of water efficiency, increasing peoples' capability to act.
- We need a **simple, joined-up narrative** across England and Wales that drives motivation and gives the '**Why**' of water saving.
- In addition to landing the '**why**', the campaign also need to build people's **Capability** and **Opportunity** to save water
 - **Capability**: by giving them a clear perspective on '**How**' they are able to make a difference in their water consumption and challenging their complacency on current usage levels
 - **Opportunity**: by showing '**Who**' needs to act, providing the social opportunity (i.e. social proofing) that it's '**people like them**' who need to act; that it's everyone's responsibility

Audience – recap

Household					Non-Household
Demographics Mixed evidence but some suggestions that income, household size (occupancy) and age can influence usage.	Patterns There are distinct rhythms to water consumption across the day which can be segmented	Usage ...but, after adjusting for occupancy, they only show small differences in their average consumption	Individual Behaviours > Demographic Group The variation in per capita consumption within segments is likely more influential than the variation between them	Teens Households with teenagers show significantly higher water use, especially girls (13–19) in the mornings	Skew There is a large skew in consumption across Non-Household supply 1% of water supply points (SPIDs) consume over half the water in the Business Retail Market

- Demographics **do not appear to be the best predictors of usage levels**, although as discussed, more data and research is required to better understand this connection. Individual behaviours seem to be more important than demographics and should influence campaign execution
- Non-household usage accounts for **25–30% of public water consumed (after adjusting for leaks)**, and 1% of Non-HH Supply Point Identification Numbers (SPIDS) = 50% of all non-household consumption (**15% of total water supply**)
- The main WEC should therefore target an **all England and Wales audience**, renormalising water efficiency behaviours as widely as possible and ensuring that the desired behaviours are seen as mainstream and aspirational across a wide range of groups; that this doesn't become a divisive issue (c.f. Climate Change, Smoking and Plastics examples)
- Deeper audience understanding of **high-use groups** (both residential, eg Teens and non-residential, e.g. the 1% of very heavy users who dominate consumption) should be undertaken with a view to delivering specific activity targeting those audiences

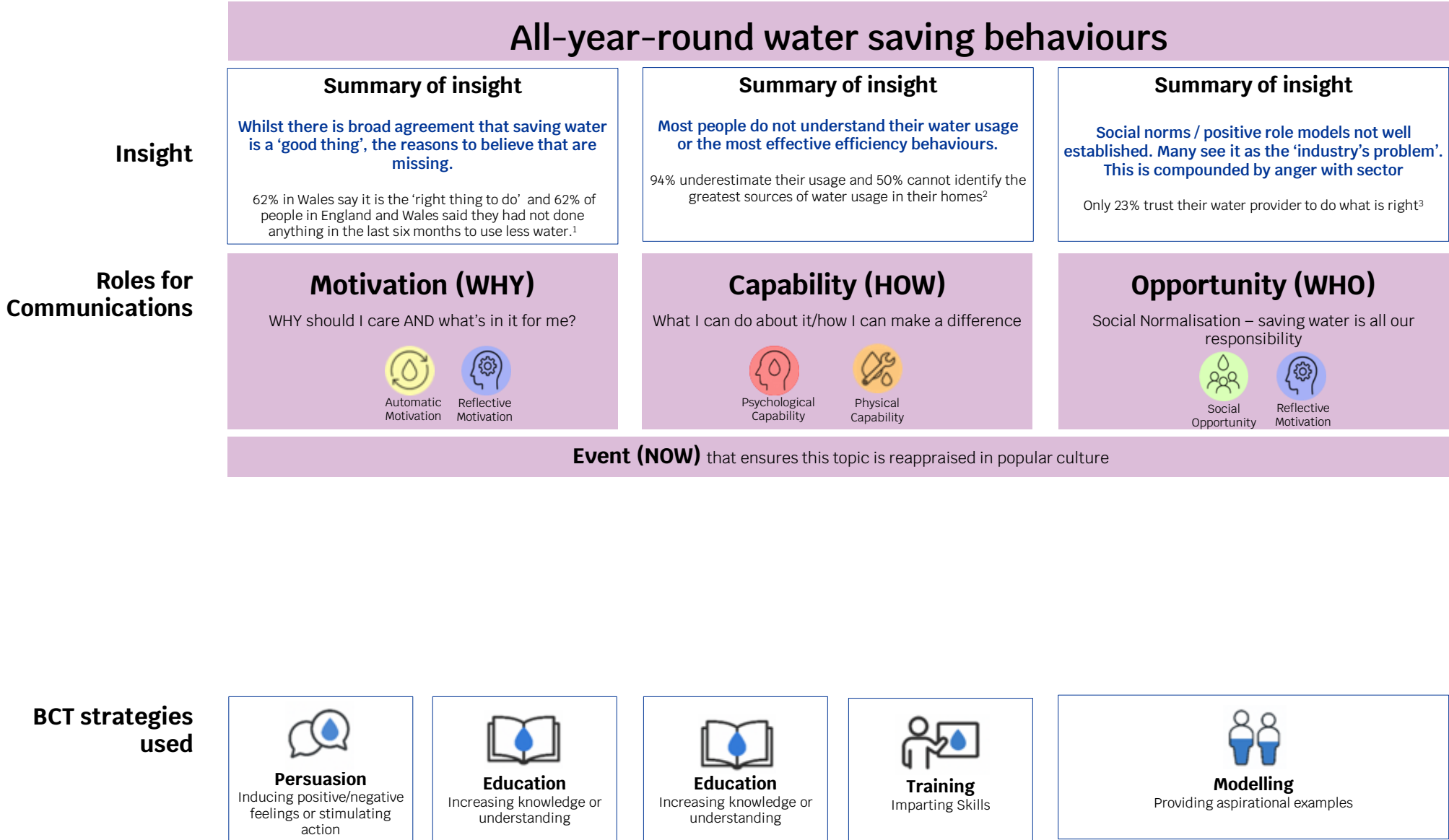
What's the Behavioural ask? setting a target behaviour

All-year-round water saving behaviours

- This is a **big shift in behaviour** in how the UK sees it's relationship with water
- Given most water efficiency communications have been delivered in times of drought and have explicitly suggested that water efficiency is required 'in times of low rainfall' **this shift in 'ask' is newsworthy** and signals that the '**situation has changed**'; it is also important that **communications** are **consistent** and reflect the **long-term** nature of the challenge
- Much behaviour around water is habitual. Evidence shows that repetition and consistency are key to engraining new habits. Encouraging new water-efficient behaviours to be carried out throughout the year will, therefore, **maximise the changes of new habits 'sticking'**
- To maximise behaviour changes, we must simplify this broader behavioural ask to specify **a few simple, maximally impactful actions** that become universally understood as worthwhile and 'normal' behaviours
 - Evidence shows campaigns are most effective when they promote a specific, easy-to-understand behaviour (rather than promoting a longer list of possible behaviours)
 - Consistency of behavioural ask over many years will be key to building a shared understanding and a supportive context for new behaviours
 - Candidates for these specific water saving behaviours are suggested in the upcoming section



WEC Strategy foundations tackling challenges that hold back efficiency culture



1. <https://www.gov.wales/public-attitudes-water-efficiency-wales>
2. <https://www.ccw.org.uk/publication/water-awareness-survey/>
3. <https://www.ccw.org.uk/publication/customer-spotlight-peoples-views-and-experiences-of-water-2024/>

Primary roles for Communication what must the campaign messaging do to fulfil the ‘why, how and who’ roles

All-year-round water saving behaviours

Roles for Communications

Motivation (WHY)

WHY should I care AND what's in it for me?



Automatic Motivation



Reflective Motivation

Capability (HOW)

What I can do about it/how I can make a difference



Psychological Capability



Physical Capability

Opportunity (WHO)

Social Normalisation – saving water is all our responsibility



Social Opportunity



Reflective Motivation

Event (NOW) that ensures this topic is reappraised in popular culture

The science behind **why** using less water is a good thing
+
Money saving and any other personal benefits

~3 behavioural asks that can make a significant difference and give people a clear **how**

An overarching ask that makes them specific, memorable and increases habit formation

Using role models helping a broad audience see **who** ideal behaviour is for i.e. ‘for people like them’
(e.g. highly-trusted celebrities)

A mass participative element e.g. ‘water week’

A well-publicised summit with accompanying documentary, cross-party support, ambassadors and press coverage to provide a

BCT strategies used



Persuasion

Inducing positive/negative feelings or stimulating action



Education

Increasing knowledge or understanding



Education

Increasing knowledge or understanding



Training

Imparting Skills



Modelling

Providing aspirational examples



WEC Strategy foundations summary

All-year-round water saving behaviours

Insight

Summary of insight

Whilst there is broad agreement that saving water is a 'good thing', the reasons to believe that are missing.

62% in Wales say it is the 'right thing to do' and 62% of people in England and Wales said they had not done anything in the last six months to use less water.¹

Summary of insight

Most people do not understand their water usage or the most effective efficiency behaviours.

94% underestimate their usage and 50% cannot identify the greatest sources of water usage in their homes²

Summary of insight

Social norms / positive role models not well established. Many see it as the 'industry's problem'. This is compounded by anger with sector

Only 23% trust their water provider to do what is right³

Roles for Communications

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WHY should I care AND what's in it for me?



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Event (NOW) that ensures this topic is reappraised in popular culture

Message guidelines/approaches

The science behind **why** using less water is a good thing

+

Money saving and any other personal benefits

~3 behavioural asks that can make a significant difference and give people a clear **how**

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Exploring messaging territories the candidates for landing Why, How and Who

The **'Why'** of saving water is complicated, and appears to be little understood currently

- We need to understand the science behind why water saving matters, whilst recognising that the power to inspire of the 'why' is not necessarily the same as its materiality to water saving
- Evidence shows we need to wrap it in positive emotion, not judgemental or pessimistic framing

'How' to save water is also complex

- As our analysis shows, there are many water saving behaviours and all are likely to be different in terms of the **'headroom'**, or how much it is possible to change each one.
- Need to exhibit commitment and clarity of ask; behaviours requested should be all-year round to sew confidence and build habits
- The research will add further insight on how 'acceptable' each behavioural ask is, which will be balanced against the potential impact and headroom of that behavioural change

'Who' needs to save water is simpler

- this needs to be an ask that all in England and Wales take to heart
- If we adopt a strategy that sought to elevate those who are especially 'conscious' in this space they we risk making it a polarising issue across communities and the political spectrum



Pinning down the 'why' The credible, science-based reason for saving water

Motivation (WHY)

WHY should I care AND what's in it for me



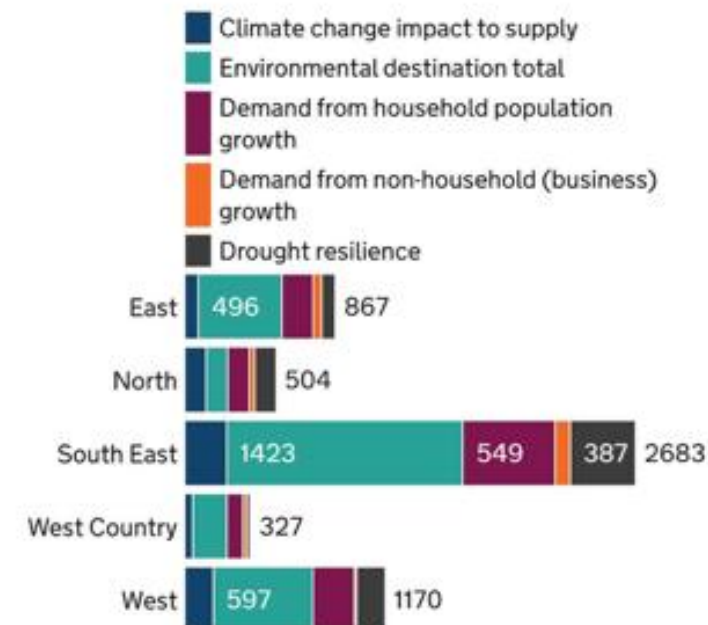
The 'why' of water saving is **clear and science based**.

The UK Environment Agency's 2024 water resource management plan sets out reasons behind the **5bn litre / day target**. The **reasons we must use less water**, ranked from most to least important, are:

1. To protect the **environment** by taking less water from rivers, streams and aquifers. The science has evolved over time, and we now understand the potentially permanent damage to ecosystems, flora and fauna caused by excessive abstraction
2. Demand from **population growth and business growth**. The population of England and Wales has grown by 23% over the last 50 years and continued business growth is vital to the UK
3. To mitigate the impact of **climate change** to supply. We are now subject to warmer, dryer summers and more intense and difficult to capture rainfall in winter
4. To boost our **resilience to drought**

Figure 1: The breakdown of drivers of 2050 water need, split by region, impact stated in MI/d

[Change to table and accessible view](#)



High household capability for water scarcity concern and intentions to act determined households' responsiveness to water-conservation messages....increase in water scarcity concern and intentions for water-conservation behaviour was higher when the water-saving tips/strategies communication message given was within the households' capability **Addo et al**



Pinning down the 'why': the personal, money-saving benefit of saving water

Motivation (WHY)

WHY should I care AND what's in it for me



Reflective
Motivation



Automatic
Motivation

Water is relatively cheap (approximately £ 2-3 per cubic metre (~30 three minute showers) and similar again for sewerage costs.

- This suggests **showering for 1 minute less saves about five pence in water costs**
- And depending on shower type a similar amount again in energy costs.
- So, while savings might add up over the course of a year, on a per-event basis, it costs ~10p to spend an extra minute in the shower
- Similarly, 3 fewer flushes a day saves about ~10p
- So, while there are likely **substantial annual savings** the **per-event costs are relatively low**.
- To place in perspective, based on the example to the right, there is a **saving of ~£3 per week**, for what is a **substantial change in behaviour** across a household of 4.
- And critically, **40% of households don't have a water meter**, so there is **no cost-saving benefit** (excluding heating savings)
- **While cost may be a lever, it is likely not the lever**

Each member of the Household, showers for 1 minute Less



£100*

Typical Household Savings per year (energy and water) for a family of four

"Showering for just one minute less ... could help save each household £100 in energy and water every year."
<https://www.anglianwater.co.uk/help-and-advice/save-water/in-the-bathroom/shower-this-challenge>

A family of four could save £95 a year on their annual energy and water bill just by reducing time spent in the shower by a minute each day, making this a great, no-cost way to save money.

<https://waterwise.org.uk/three-wise-ways-that-water-efficiency-can-help-you-save-money-this-christmas>

*Based on 2023 Costs. Since then, Energy costs have come down, and water costs have risen.

3 Fewer flushes per day across the household



£36

Typical Household Savings per year (water) for a family of four

Assumptions
Flow Rate 6l/m
Water Cost: 2.56/m³
Sewerage Proportion: 95%
Sewerage cost: 2.76/m³

4 Fewer minutes per day running tap while brushing teeth across the household



£30

Typical Household Savings per year (water) for a family of four

Assumptions
Flow Rate 4l/m
Water Cost: 2.56/m³
Sewerage Proportion: 95%
Sewerage cost: 2.76/m³



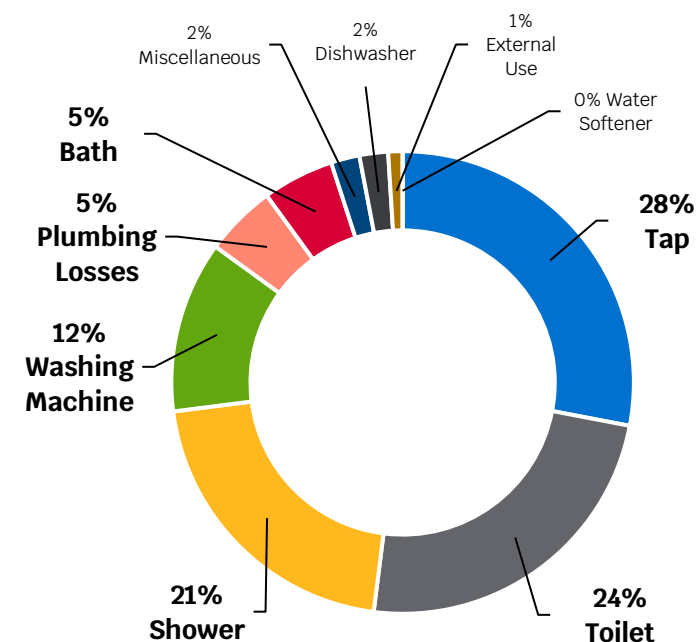
What are the behaviours that will lead to greatest impact?

Capability (HOW)

What I can do about it/how I can make a difference



- Evidence shows campaigns are most effective when they **promote a specific, easy-to-understand behaviour** (rather than putting forward a longer list of possible behaviours)
- Toilets, Showers and Taps** drive the majority of household water use. They are also end-uses that have **high headroom** suggesting they are good candidates for behaviour change
- 1 fewer flush = 1-minute shorter shower = 6 litres per day saved; 5 flushes = 40 litres**
A dual flush toilet uses between 4-6 litres of water; older toilets can use up to 13 litres; showers are typically between 6-15 litres per minute*
- Considerations on execution:**
 - Behaviourally-focussed ask around **bathrooms** (likely to be over 50% of usage)
 - Aligning messages with **routines, not just efficiency** (how you use water, not just how much)
 - Use of a **mnemonic** like **'fewer flushes, shorter showers, turn off taps**



OFWAT, 2018

The long-term potential for deep reductions in household water demand; small sample study
<https://www.ofwat.gov.uk/wp-content/uploads/2018/05/The-long-term-potential-for-deep-reductions-in-household-water-demand-report-by-Artesia-Consulting.pdf>



Modelling WHO needs to change behaviour – and which messengers lead this modelling

Opportunity (WHO)

Social Normalisation



“Rather than tell people what to do, it was more effective to tell them what other people are doing.... The residents rated the social influence appeal as least influential, yet data on actual energy consumption revealed that this message resulted in significantly more conservation in comparison to the other conditions”

Lede et al

- Evidence shows that **showing what others are doing is persuasive**
- There are well-proven way of doing this
 - Leveraging ‘**dynamic norms**’ and showing how low water users are establishing new norms
 - Connecting conservation to ‘**in group**’ **community identity** are persuasive.
 - Using relatable, **well-liked influencers** and **celebrities** to convey the messages and tell the story of how they’re responding to the water scarcity challenge
- **Making the effort inherently ‘social’**, c.f. Stoptober, is another way of modelling the new behaviours using peers and mass participation



Landing the ‘WHY’ what we learnt from the pilot.

This tested 3 different narratives over August, September and early November 2025

Three narratives that say **why** water efficiency **matters** were tested:

Protect
environment

Adapt to
change

Water
security for
our future

All narratives were executed by our pilot partners in different ways appropriate to each brand’s style and tone of voice

Affinity Water
Paid social
Live 18/8/25

Southern Water
Social, paid
search and email
Live w/c 8/9/25

Yorkshire Water
Paid social and
digital OOH
Live w/c 8/9/25

United Utilities
Paid social and
digital OOH
Live w/c 8/9/25

Severn Trent
Video assets via
paid social
Live w/c 8/9/25

Welsh Water
Programmatic
digital
Live w/c 15/9/25

Pilots evaluated via mix of customer research panels and campaign engagement metrics



Affinity Water Pilot results



Customers respond most positively to clear, authentic and educational messages around environmental protection.

- Protecting the Environment ads achieved 25–30% lower CPC than Change, showing clearer message resonance.
- Softer, inviting language (“explore”, “learn more”) outperformed harder-hitting copy; this is consistent with the evidence review that shows that ‘suggestive’ rather than ‘assertive’ or ‘judgemental’ copy outperforms
- Wildlife and scenic imagery delivered stronger engagement than people-led imagery.
- Comments showed public appetite for transparency on environmental protection and water management.

Platform: Paid Meta (Facebook and Instagram)

Structure: 6 ads (2 per narrative), each live for two weeks with equal budget allocation trialling responses to imagery and language against the narratives.

Objectives tested: Awareness vs engagement

Constant variables: Branding and CTA button (“Learn more” linking to Save Our Streams)

Reach: over 1 million people reached with 3.2M impressions and 6,700 link clicks



Southern Water Pilot results



The performance of narratives seems to be channel dependent, with feedback suggesting good connection with environmental messages (WHY) but the need for a stronger Call to Action (HOW)

- Performance differed by channel; on paid social (like Affinity), the environment narrative was the best performer (albeit with challenges around meta guidelines).
- On email, the change narrative performed the best – perhaps change narrative requires more time and consideration? More research needed
- Customers generally felt that the main message was communicated well, striking a serious but engaging tone, without being patronising.
- It was also felt the messaging was emotive and resonated well, connecting water use to environmental and household impact. However, it was felt that the call-to-action could have been stronger (which is reflected in low click-through rates)
- A sense of understanding and collaboration is essential to create buy in to taking the actions outlined

Platform: Paid Meta (Facebook and Instagram) and Email

Structure: Three different narratives across Meta paid advertising and email marketing.

Objectives tested: Awareness vs engagement

Reach: 340k people reached with 580k impressions and 994 clicks (Paid Social); 14k emails opened with 128 clicks (email)



Yorkshire Water Pilot results



Campaign performed well and CTR was above benchmark on all assets, suggesting the topics were of interest. The Environment themed campaign in particular was highly correlated with increasing positive opinions

- Social channels are currently tricky to navigate with campaigns; this is due to the wider context of the Yorkshire brand and not pilot.
- The pilot campaign was well received in testing: seen as slightly more informative than the three existing campaigns, the most likely to change behaviour and influenced the majority to view Yorkshire Water more positively.
- Whether an advert is perceived as informative enough or not is crucial
- The Environment themed campaign in particular was highly correlated with increasing positive opinions and delivering trust, value for money and NPS.
- Overall, decreases in KPIs were likely due to recent news coverage, rather than pilot campaign impact: a week before the post-stage survey, there was a major water leak reported in Sheffield, leaving some postcodes without water for a few hours.
- Younger respondents and those from Black and Minority ethnic backgrounds were significantly more likely to have a more positive view of Yorkshire Water: they were also more likely to be influenced by the pilot campaign.



United Utilities Pilot results



All messages performed similarly in terms of claimed effect on 'attitude to saving water' (6.97, 7.13 and 7.11 out of 10), but when messages were presented together the change and water security narratives significantly outperformed

- Change narrative was most impactful overall, driven by its informative content, use of figures, relatable context and ease of understanding.
- Water Security narrative was ranked second for its impact. It was praised for emphasising personal responsibility and direct impact, with clear and simple messaging, though less effective in changing attitudes.
- Environment was least impactful in terms of attitude, but it was valued for its simplicity, clarity and environmental focus.
- Overall, respondents valued adverts that were informative and included figures, relatable context, and delivered clear, simple messaging. Emphasis on both personal and collective responsibility, along with highlighting environmental impact, was seen as particularly important.
- Criticism centred on engagement, with some respondents, especially those already saving water, finding the adverts uninspiring. Suggestions included making ads more interactive and highlighting UU's role to reinforce collective responsibility.



Severn Trent Pilot results



Platform: Paid social

Structure: 3 videos, each around 50 seconds

Objectives tested: Awareness vs engagement

Constant variables: Branding and 'use less water, save money on your bill and help protect our future' lock up and 'learn more' hyperlink

Reach: over 1 million people reached with 1.7M impressions and 915 engagements

Research responses to
'Environment' video



'Water scarcity/future' message drove slightly more click through, but 'Environment' message which explained water link to rivers, streams and habitats resonated most strongly in research

- Environment messaging resonated best with customers; 80% stated it resonated strongly or slightly. It delivered the highest impressions on social. This message was the most likely to improve peoples' perceptions of Severn Trent and make them most likely to want to try and use less water
- However, water security generated the most engagements on social and was the second most popular messaging in research.
- Change was the messaging that resonated least, though 74% said it still resonated with them (strongly or slightly)
- Some customers would have liked the videos to contain (more) water saving tips.
- Despite adverts being viewed positively, social sentiment was negative and focused on rivers, sewage and bills rather than post content



Landing the 'WHY' what we learnt from the pilot.

This tested 3 different narratives over August, September and early November 2025

- **Affinity Water** : Customers respond most positively to clear, authentic and educational messages around environmental protection (25-50% lower CPC)
- **Southern Water**: Performance of narratives seems to be channel dependent, with feedback suggesting good connection with environmental messages (WHY) but the need for a stronger Call to Action (HOW)
- **Severn Trent**: 'Water scarcity/future' message drove more click through, but 'Environment' message which explained water link to rivers, streams and habitats resonated most strongly in research (80% say it resonated 'strongly')
- **United Utilities**: All messages performed similarly in terms of claimed effect on 'attitude to saving water' (6.97, 7.13 and 7.11 out of 10), but when messages were presented together the change and water security narratives significantly outperformed
- **Yorkshire Water**: Pilot campaign outperformed previous campaigns; Environment themed campaign, in particular, was highly correlated with increasing positive opinions and was claimed to be most likely to change behaviour

Summary

'Why' Narrative

Three messages performed well, but **Environment** performed **best overall** in 4 out of 5 pilots; it appeared to drive intention and interest in finding out more; it also improved perception of water companies

Emphasis on both **personal and collective responsibility** (i.e. water sector and company action) was seen as particularly important.

There was **negative social sentiments** on social, but this **is expected** of water company campaigns

Execution

Wildlife and scenic imagery significantly outperformed people-led visuals.

Soft, inviting language (e.g., "explore") worked better than assertive or judgmental copy.

Respondents valued adverts that were **informative** and included figures, offered relatable context, and delivered clear, simple messaging

A lack of strong call to action was mentioned across many of the pilots (this is addressed in strategy)



Landing the WHY what we learnt from research

“All messages are easy to understand, believable, and speak around something people care about..” ¹⁴

The research tested ‘Environment’ and ‘Change’ narratives as per pilots, plus one that was focused on value and one that ‘doubled up’ the benefits by referencing both energy saving and money saving: a ‘save money and energy by saving water’ narrative.

Overall responses to narratives were positive and similar, at sub-group level there were differences by age and ethnic groups

Environment

This message drives a desire to learn more among younger audiences.

This message performs better with **18-34s** at **driving care** about the issue and a desire to **learn more** than the other 3 messages.

It is also better at driving a desire to **learn more** and **think about water use** than the other messages among **ethnic minority groups**.

Change

Compared to other messages, this performs similarly across groups.

This message is more likely to resonate with **35+ age groups** on **believability**, something to **care** about and **responsibility**.

Value

Compared to other messages, this performs similarly across groups.

However, this message resonates slightly more with older, white people around feelings of responsibility.

Cost + Energy

May drive responsibility among younger people.

Cost + Energy scores well compared to the other 3 messages for **personal responsibility** for those aged **18-34** and **ethnic minority** groups.

But performs **less** well than the other 3 messages amongst those aged **18-34** and **ethnic minority** groups for ease of understanding and being something they care about.

This summary is repeated verbatim from OFWAT research [hyperlink here](#)

- Base: Environment cell n= 1084, Future cell n=1092, Value cell N=1099, Cost + Energy cell n=1075



Landing the 'WHY' Summary of learnings

Across both Pilots and consumer research, the **different 'why' narratives all seemed to be well received**

It is, of course, not possible to draw certain conclusions from any testing at a time of drought and where the creative execution varies considerably, but results were useful and directional:

- **'Environment' narrative performed best** across pilot partners (except for with United Utilities , where it performed well but not as well as the 'change' narrative)
- This messaging terms of both **driving intention, care and interest** in finding out more

In consumer research, **narratives performed remarkably similarly.**

- **Saving water saves energy and cost outperformed** Environment in the consumer research, but this is perhaps not surprising as it ladders up two benefits; this does support the strategy recommendation that the money-saving component of 'why' should be used as a part of any final narrative
- **Environment outperformed the other narratives** in making people 'care', and performed strongest overall with younger audiences



Landing the HOW what we learnt from research

There is much richness of insight relating to water efficiency behaviours available in the upcoming OFWAT research

Whilst detailed campaign tactics are beyond the scope of this project, consideration should be given to how driving the 3 most impactful behaviours (**Fewer Flushes**, **Turn off Taps** and **Shorter Showers**) in a way that recognises the different attitudes towards these behaviours and how they vary by segment e.g.

- Younger people (18–34) are **less willing to sacrifice ‘enjoyment’** (e.g., long showers), whereas older people (55+) are motivated by **waste avoidance and cost**.
- The behaviours people are *least* willing to do are hygiene-related: sharing bathwater (55% unwilling), showering less often (39% unwilling), and not flushing #1s (38% unwilling).
 - Campaigns could play with contemporary obsessions with hygiene to try and **subvert/puncture the culture** of multiple showers a day that appears to be emerging
- Do not suggest ‘sharing bathwater’ as it triggers **high resistance**.
- Focus on ‘Not flushing #1s; as a **gateway behaviour**. Qualitative research shows some already do this at night to avoid noise. Reframe this existing habit as an intentional ‘water-saving act’ rather than just ‘noise avoidance’
- Frame shorter showers as **‘efficient cleaning’** to bypass the hygiene barrier; fewer flushes could also be framed as **‘efficient flushing’**



Recap of literature review campaign recommendations The principles the WEC should adhere to

An integrated approach is needed and likely to be most effective.

Knowledge transfer around water conservation need is important to drive receptivity to behaviour change. Campaigns should be timely, context-specific, and focus on a clear, actionable behaviour-- ideally reinforced by social norms or community identity.



Clear, actionable target

Campaigns are most effective when they promote a specific, easy-to-understand behaviour, building a sense of 'self efficacy' when it comes to the impact of the actions.



Contextual relevance

Effectiveness increases when the campaign is linked to real, visible contexts.



Visibility & timeliness

Information delivered at the point of decision (e.g. in the bathroom, at the tap) or during relevant moments (e.g. news about climate) is more likely to prompt action.



Social norms & identity

Messages that show what others are doing (leveraging 'dynamic norms' and showing how low water users are establishing new norms) or connecting conservation to 'in group' community identity are persuasive.



Reinforcement

Effects are stronger and last longer when messages are repeated and reinforced over time.



Avoid generic messaging

General awareness or information-only campaigns have little impact unless paired with specific actions.



Evaluation

Due to people's weak understanding of their level of use, self-reported usage levels should not be used for evaluation, instead measurement of flow (e.g. via smart meter) should be used. In addition, Randomised Control Trial (ideally Blinded) methodology should be employed where possible.

Thought starters Ideas that spring from the strategy and evidence

Persuasion & Social Norm

Blue Planet/
BBC Special Edition
e.g. The Drying Lands
Mainstream messenger
eg David Attenborough

In-context messaging

Make showers, toilets, rivers
and forests tell the why of
water

Value-Action gap

Highlight difference
of intention vs behaviour
e.g. 'What's my Water
Footprint' comparison tool
and campaign

Event

Water week '26 as the
'moment' where the science
breaks cover
e.g. national event, local
roadshows

Emotion & a positive future

Make it human and tell a
hopeful story of change
through the voice of children

Power of 'new news'

The 'why' and the all-year
round behavioural act
e.g. Every Day is a Good Day to
Save, focus on rainy
executions

Mnemonics for behaviour

e.g. 'Shorter Showers, Turn
off Taps and Fewer Flushes'

Rethinking routines

e.g. surface our habits
comedically and highlight
how new routines should
work

Mass participation/ address value- action gap

e.g. '100 litre challenge'
during water week

Modelling/ Positive neighbour comparison

e.g. together most efficient
neighbours use 40% less
water

Our approach

Context

- The Challenge
- The WEC
- The Brief
- Stakeholder insight and input
- Policy context

Behaviours

- Audiences & Behaviours
- What Needs To Change

Interventions

- Relevance And Effectiveness

Planning & deployment

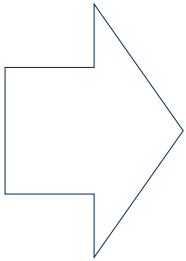
- Analogous Challenges
- Strategy foundations
- Campaign and messaging guidelines
- **Behaviour change system development (channels, partners, policy)**
- Evaluation Considerations



Channels and messengers Connecting with the audience

Relevant Intervention Strategies

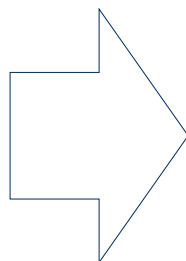
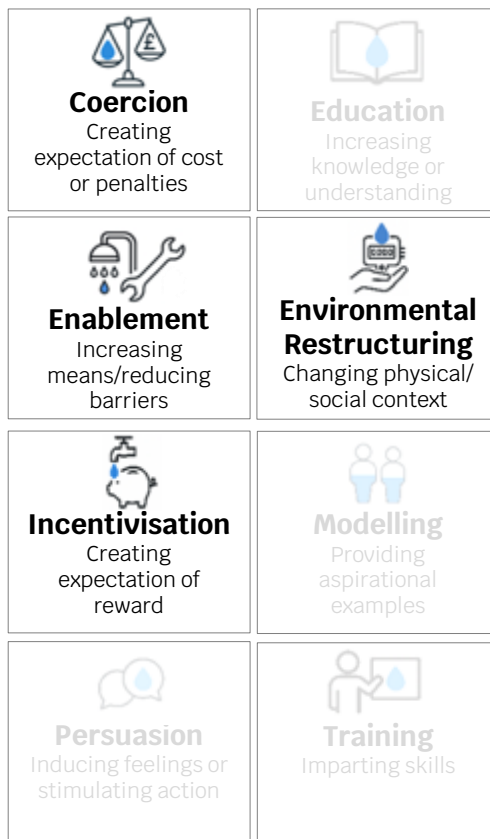
 Coercion Creating expectation of cost or penalties	 Education Increasing knowledge or understanding
 Enablement Increasing means/reducing barriers	 Environmental Restructuring Changing physical/social context
 Incentivisation Creating expectation of reward	 Modelling Providing aspirational examples
 Persuasion Inducing feelings or stimulating action	 Training Imparting skills



- **A broadly-targeted campaign across owned, earned and paid for media including appropriate broadcast media** – is important to social norms.
- **Channels and messengers** should be selected to connect against a broad audience with tailoring of executions, channels and messengers for the below groups. Consideration should be given to the specific routines, individual behaviours and daily patterns of behaviours identified earlier in this work and whether they can drive media/creative targeting.
- **Media and messenger selection criteria**
 - **Reach to target audiences** (Noting the limited high-quality evidence currently available on audiences and the need for further work in this area)
 - **Core audience** (All England and Wales)
 - **Key secondary audiences** identified in this work
 - **Higher using household audiences**, subject to further research eg
 - Households with teenage children
 - Affluent households
 - **Non-household audiences**
 - High using groups (1% of water supply points (SPIDs) consume over half the water in the Business Retail Market (or around 15% of the total public water supply).
 - **Credibility to specific audiences and ability to ‘model’ the desired behaviours** across audiences.
 - This should include a **mass audience**, taking care that the desired behaviours are seen as mainstream and aspirational across a wide range of groups; it could also include **opinion leader audiences**, including those who are already ecologically motivated and interested in sustainable living, with a view that these groups could be influential to others
 - **Engagement with schools via school programmes** is a feature of many successful behaviour-change strategies and is useful in building social norms and establishing behaviours from a young age

Integration with policy levers observations from the evidence

Relevant Intervention Strategies



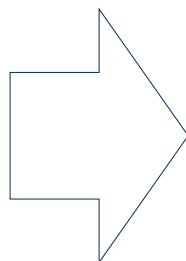
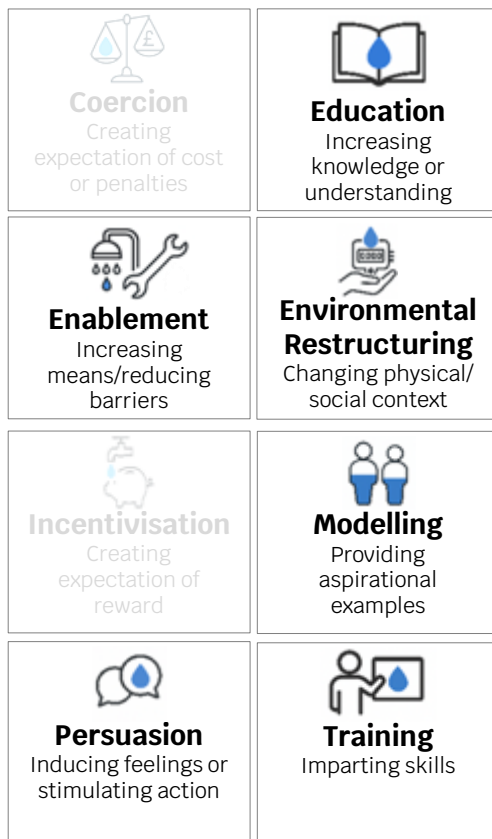
- **Coherent integration** with policy levers is a key part of successful behaviour change practice
 - There is likely to be significant value in coordinating the WEC and the launch of policy levers to
 - Drive coverage and public conversation
 - 'Prepare' sentiment to be supportive of policy launches (c.f. plastic bag charge)
 - Demonstrate that science, government and sector are aligned on the issue

Our rapid evidence review highlighted the impact of policy-related interventions:

- **Coercion:**
 - Restriction notices & penalties (Temporary Usage Bans (TUBS) and restrictions)
- **Environmental Restructuring:** putting objects in the environment that change the context of behaviour and give immediate, contextual feedback, eg:
 - Smart meters & In-Home Displays (real-time dashboards, appliance-level data, leakage alerts); these deliver long term effects beyond the (typically) short impact of communication campaigns
 - Real-time/appliance feedback devices (shower LEDs and timers, numeric displays)
 - Alternative system design & practice change (e.g. alternative bathing practices, clothes reuse, reconnecting water cycles)
- **Incentivisation**
 - Financial incentives & tariff structures (block tariffs, seasonal pricing, monetary savings info); these are a vital part of successful behaviour change initiatives and will be important in both household and non-household contexts

Integration with wider behaviour-change ecosystem

Relevant Intervention Strategies



- **Coherent** action across the various players in water efficiency is a key part of successful behaviour change practice
- **Key partners** will include Water Companies, sustainability and ecologically-focused organisations (e.g. Energy Savings Trust, Wildlife Trust), scientific bodies, schools, manufacturers and retailers
- The **WEC should engage and provide support** that helps
 - Co-ordinate action and events at key moments e.g. Water Week'
 - Provide messaging and collateral that amplifies WEC campaign strategies and tactics
 - Encourage pervasive deployment of water efficiency messaging and action in their activities
- Our rapid evidence review shows which levers can be deployed
 - **Education** and **persuasion**: increasing knowledge and motivation
 - **Enablement**: providing the tools that make it easier to monitor and change behaviour: billing, smart metering, water saving equipment like improved flush technology and shower heads
 - **Environmental Restructuring**: changing the behavioural context, eg:
 - In-Home Displays (real-time dashboards, appliance-level data, leakage alerts);shower timers
 - Appliance design and labelling (in context messaging is effective)
 - Putting messages into the environments where the **impact** of potential water scarcity is most acute e.g. in nature, at new building sites and areas of economic development in cities
 - **Modelling**: ensuring that the desired behaviours are seen as 'for people like me/people I admire'
 - **Training**: helping people learn the skills that reduce consumption e.g. in the garden, fixing leaks

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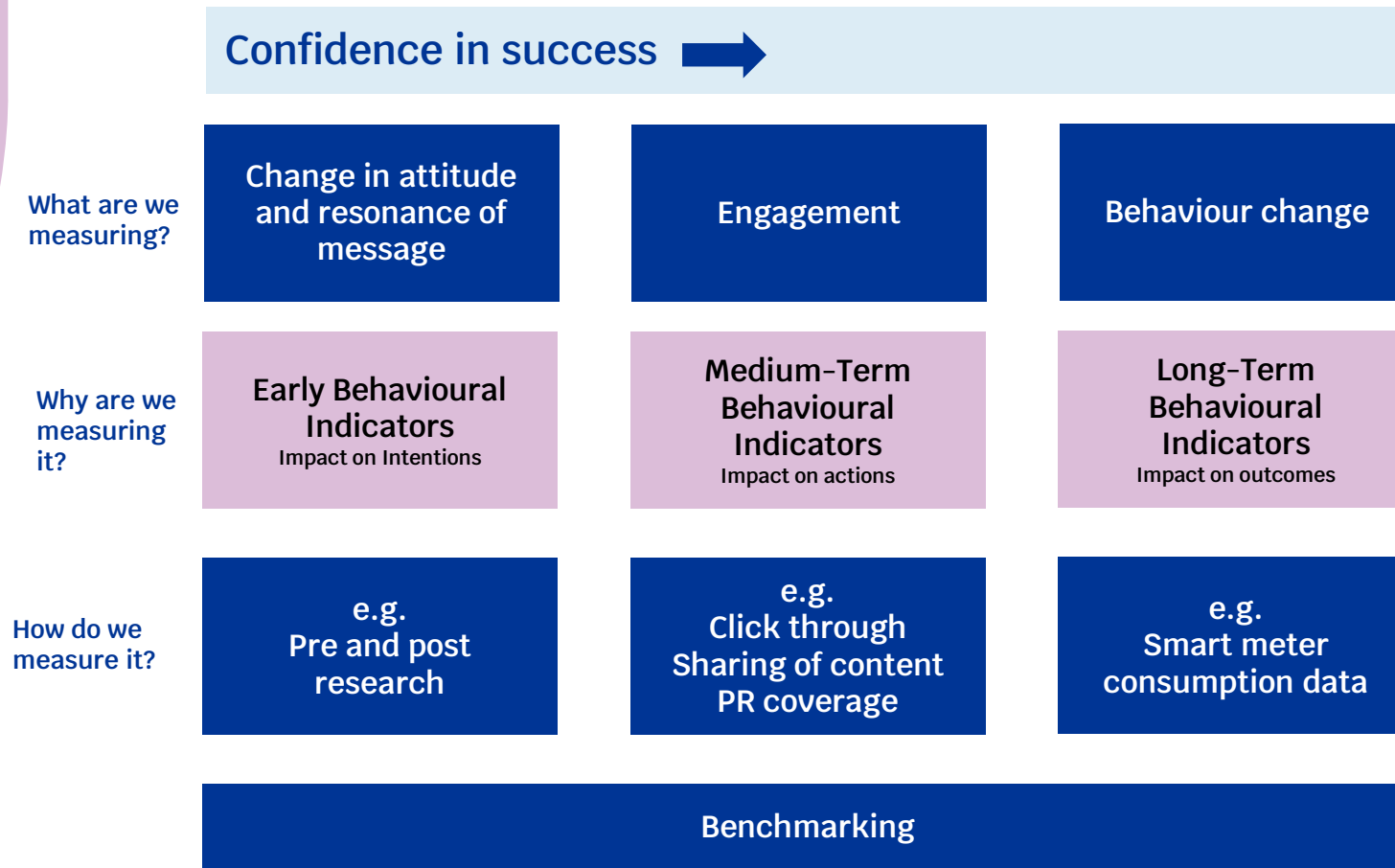
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- **Evaluation Considerations**



How to think about success



- This section continues the theme of this project and is intended as a springboard by the WEC Delivery Body.
- What follows are observations and early thoughts on considerations for evaluation
- In time, the delivery body and ICF will need to develop a full evaluation strategy



Why Evaluate? It's important to start at the beginning

Accountability

Learning



Agreeing the role of the evaluation aims and impact

What's the reason for evaluation?

- To quantify the success of marketing?
- To quantify the impact on usage?
- To quantify outcomes?
- To evaluate the return on investment (ROI) of the campaign?
- To evaluate audience engagement?
- To compare performance across different regions or segments?
- To evaluate the impact of timing and frequency of marketing efforts?
- To measure behavioural changes?
- To understand barriers and enablers to behaviour change?

How will it be used?

- To shape future marketing strategies and campaign planning?
- To influence future budget?
- To share insights with stakeholders to help with decision-making?
- To refine messaging to better reach the target audience?
- To use the data to support business cases for further investment in similar campaigns?



Setting Expectations Long-term and Sustainable

- In many ways, **water efficiency is at the beginning of its journey.**
- It is not part of the public consciousness in the same way as smoking, climate change and plastics. And we've learned the lessons from those movements.
- **This is not a challenge that will be solved overnight.** Half of all households will not drop their water usage by 20% as soon as the campaign goes live
- We need to think about **what good looks** like over a **20-year horizon** and set appropriate **milestones** for success.
- And as part of our evaluation, we shouldn't just focus on numbers. We need to measure ourselves against the things that we **know** deliver **sustainable behaviour change campaigns**. When we look back, will we have met these five conditions?

Credibility

Clarity and consistency of ask

Commitment over the long term

Coherency across partners, stakeholders and all intervention strategies

A 'reset' moment



Aligning measurement with Strategy

It's Important to ensure that any evaluation aligns to the theory of change inherent within the strategy.

Does the audience have the ***motivation***?

Does the message resonate?

Are we providing the why?
Do they want to change their behaviours?

Does the audience have the ***capability***?

Does the audience understand what they need to do?

Are we providing the how?
Do they have a plan?

Does the audience have the ***opportunity***?

Does the audience have the right tools and the right support to make changes to their behaviours

Do they have access to the right tools?

Does the audience change their ***behaviour***?

Does the audience demonstrate measurable declines in water consumption?

Can we use smart meters to measure long term change?

Measurement Strategy

What are the appropriate measures and methodologies to capture each of these core areas necessary to evaluate success?



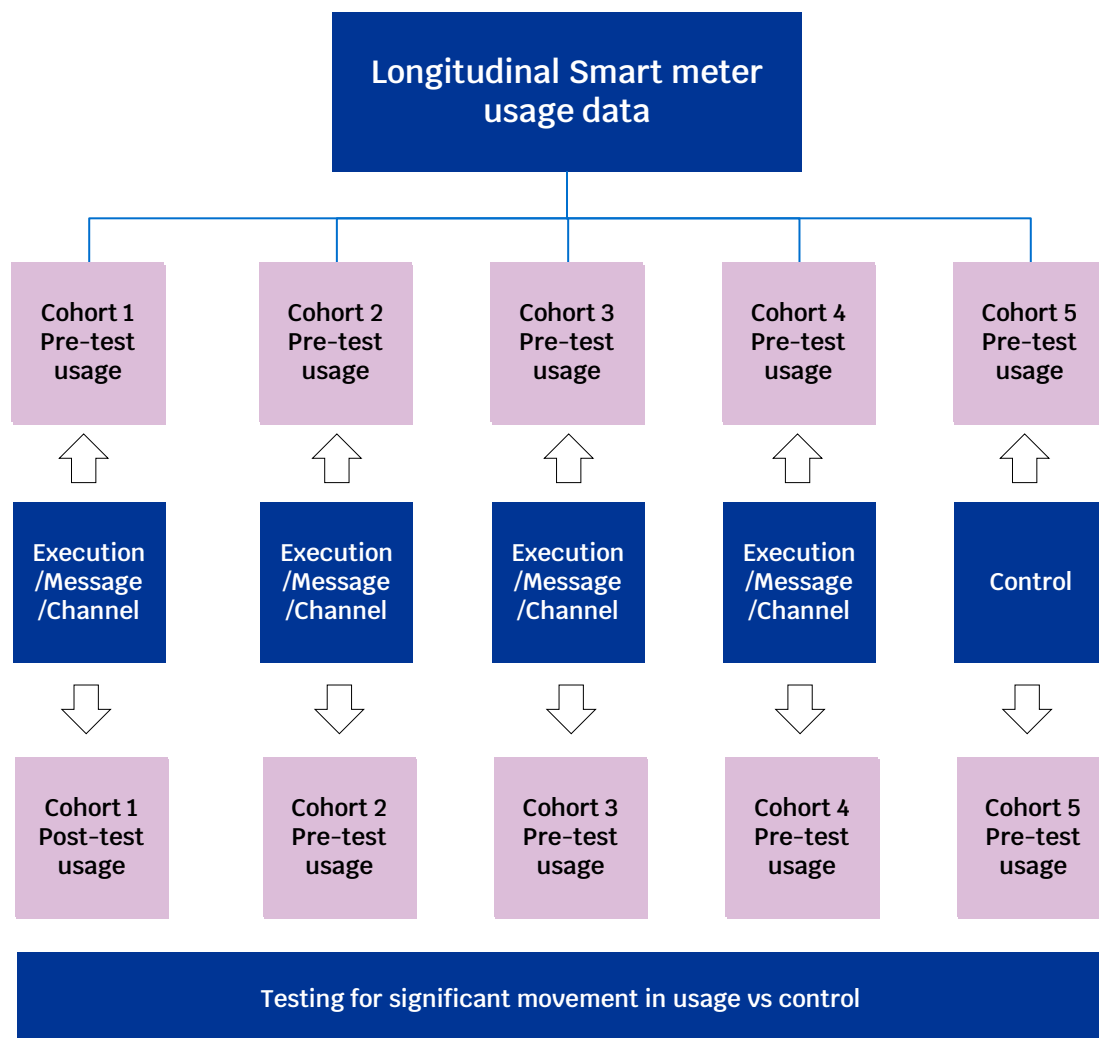
Measuring changes in attitudes

Importance of sample sizes

- One of the challenges in evaluating campaigns through primary research is **overestimating the expected scale of change** and the contribution of marketing.
- Because we are talking about **large target populations** then a **small percentage shift** represents a change in attitude of **many individuals**.
 - For example, if we could be confident that the proportion of adults agreeing that 'Water is Scarce' **moved from 30% to 32%** when comparing pre- and post- campaign, **that's an additional 1M adults** in the population who now recognise the issue – it's a big deal.
 - However, with sample sizes of approximately 1,000 that level of movement **can't be measured with confidence** – you would need a 4% movement to be considered a significant difference. To measure a 2% movement, you would need to **significantly increase samples**.
 - And it's important to note, that even if you can say the results are *significantly* different, **it doesn't mean that the difference is what you measured**, just that there is no meaningful crossover of the confidence intervals.
 - So even though you might measure a difference of 2% across your surveys, the population difference could be much smaller. Or much larger. **The bigger the sample, the less the uncertainty**.
- So, are the expectations for change too high and do we need to **upweight samples considerably** to truly measure the impact of campaigns?



Building a Live Lab Using smart meter data to measure impact of interventions



How will it work?

- We can consider the use of **smart meters** to create **unobserved comparable samples of the population** and subject them to a **different experience**. And then see what happens to their **water usage**
- It could be different campaign executions, free water saving devices, environmental prompts, peer comparison etc
- We can see if it has any **measurable impact of their usage** vs a control – remembering that we should have **realistic expectations** of the likely levels of movement and ensure our cohorts are of **sufficient size** to measure differences with confidence and that measurement horizons are suitable, measuring long-term sustainable changes, not simply short-term impacts as a result of campaign visibility..
- Separately, this can really begin to help us understand the **variations in usage** across ostensibly **similar households** (demographics, size, occupancy etc)
- Finally, as a likely important part of the measurement strategy, perhaps engaging OFGEN to understand how the energy industry is using Smart Meters within a more mature market (approx. 70% penetration).

Building a centralised repository for Water data Create a single source of the 'truth'

- As this process has discovered, the **availability of critically important data** is underwhelming in its quality, consistency and credibility and frequency.
- It represents a clear role for the WEC to **gather this information into a single place** and be recognised as the **owner of water data**.
- It can be used to identify **gaps in knowledge** and work with partners to **fill them**.
- It creates a reason for Water Companies to **share their data** (a willingness that can be seen in STREAM and the open data project) and introduces the idea of **creating longitudinal views** of key data
- Most importantly, it offers the **opportunity to create a standardised set of measures** with prescribed methodology that could be **used by everyone** (water Companies, industry groups, charities etc, researchers) and allow the **comparison** of those measures **across time, regions** etc
- Ideally, this would include the **Live Lab** data outlined previously and ensures that any repository successfully underpins the future evaluation strategy



Useful Data Sources collating data from Water companies

	Theme	Description	Comments
Very Useful	Consumption bands	Average daily or annual water use per property, split into: low, medium, high users (e.g. <80l, 80–150, >150l).	Consumption normalised to person-level. cf. Young professional living alone consuming 200 litres vs family of four consuming 350 litres)
	Consumption distribution	Pareto-style numbers (e.g. top 20% of customers use 50% of total water). Presented in deciles. Can we do Households and People?	Reveals demand concentration and potential efficiency targets. By consumption band.
	Meter penetration	% of customers metered, and among them, % with smart meters.	Smart meters may provide more behavioural levers. Again, by consumption band to see if high users have lower penetration.
	End-use estimates	Breakdown of household water use by category: toilet flushing, showers, taps, washing machines, garden use, leaks.	We've found some data but would be good to see if there is a consistent message across water companies. By consumption band to help understand if proportions hold or whether high consumption is driven by key categories
	Non-household consumption	Proportion of total water used by domestic vs. non-domestic customers (business, industry, agriculture).	Helps understand where savings could have greatest impact.
	Leakage data	Reported leakage (Ml/day and % of total water put into supply).	Comparable across suppliers and potentially helpful when talking to customers about efficiency.
	Behavioural indicators	e.g. % of households reporting use of water-saving devices (aerators, dual-flush, low-flow showers).	To understand headroom. By consumption band. Do low consumption bands have a higher penetration of water-saving devices
Somewhat Useful	Disaggregated end-use (appliance level)	e.g. % use for e.g kitchen taps vs. utility sinks vs bathroom sinks.	Just a little more detail. By consumption bands
	Customer engagement	e.g. % of customers interacting with water efficiency campaigns, smart meter portals, or leak alerts.	Simple engagement measures. By consumption bands
	Weather sensitivity	Correlation between weather (temperature, rainfall) and domestic use.	How do external conditions impact water use. By consumption bands. Are households in high consumption bands because water usage increases in line with drier weather. i.e because they have gardens.
	Household demographics	Average occupancy, property type (flat, detached, etc.) linked to consumption.	We can probably get this from census
	Behavioural trials or pilot results	e.g. outcomes of water-saving pilots.	Context-specific; can't generalise across suppliers. Unlikely to be comparable. However, may be useful for defining broader national trials/idea generation.
Caution	Customer segmentation	Most water companies are likely to have their own segmentation(s)	Methodologies vary, definitions subjective. Unlikely to be comparable
	Customer satisfaction or attitude surveys	e.g. willingness to reduce water use.	Different survey instruments, small samples, varying wording. Unlikely to be comparable. This does become useful if we set up a national tracker funded by water companies.



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ofwat

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