

Saving water in the home: A co-created agenda for research and action

Questions to guide water efficiency behaviour change activity, generated by 107 representatives of 60 UK water sector organisations, v1

<i>Theme</i>	<i>Key questions</i>	<i>Specific questions</i>
Targeting consumers		
Identifying behaviour change targets	1. Which behaviours should be targeted, and why?	<ul style="list-style-type: none"> - Should we prioritise changing behaviours with most impact on water consumption, or behaviours that can most feasibly be changed? - Which behaviours consume most water? - Which behaviours consume most energy? - Which behaviours are most costly to change? - Which behaviours are easiest to change? - Which behaviour changes are most likely to be maintained? - Which behaviours can be changed in the most socially equitable way?
	2. Whose behaviour should be targeted, and why?	<ul style="list-style-type: none"> - Should we target high-consumption users or others? - Should we target end-users or others? - Should we target attitude and behaviour change among children, as consumers of the future?
Understanding water use perceptions and behaviours	3. How do consumers perceive water, and why?	<ul style="list-style-type: none"> - How water-literate are consumers? - Do consumers value water? - How do consumers perceive clean water vs grey water vs rainwater vs wastewater? - How do consumers perceive the suitability of grey water and rainwater for water activities, and why?
	4. How aware are consumers of their water use, and why?	<ul style="list-style-type: none"> - Do consumers know how much water they use through everyday domestic activities? - How can we communicate water consumption to consumers in a meaningful way?
	5. How and why do consumers have showers?	<ul style="list-style-type: none"> - Why do consumers take showers? - How do consumers use showers and showerheads? - What are the main tasks undertaken in the shower? - What prompts consumers to finish showering?

Saving water in the home: A co-created agenda for research and action

		<ul style="list-style-type: none"> - What makes for an optimum showering episode for consumers? - Do consumers accurately perceive their shower time? - Does showering behaviour vary across socio-demographics (e.g., age) and by health status, and if so, how and why? - Does culture influence showering, and if so, how and why?
	6. How and why do consumers flush toilets?	<ul style="list-style-type: none"> - How do consumers understand and use dual-flush systems? - How many toilet flushes could be prevented, and why? - Does toilet-flushing behaviour vary across socio-demographic groups (e.g., age) and health status, and if so, why? - Does culture influence toilet-flushing behaviour, and if so, how and why?
	7. Why do consumers (not) detect or address leaks?	<ul style="list-style-type: none"> - What prompts consumers to detect and address toilet leaks, and why? - Does detecting or addressing leaks vary across socio- and geo-demographic groups, and if so, how and why?
	8. How and why do consumers (not) engage with water efficiency information?	<ul style="list-style-type: none"> - What prompts consumers to engage with communications (e.g., open emails, read messages) regarding water efficiency? - Does engaging with communications regarding water efficiency vary across socio- and geo-demographic groups, and if so, how and why?
Navigating public acceptability	9. How acceptable is the idea of water efficiency through behaviour change among the public, and why?	<ul style="list-style-type: none"> - How can water efficiency behaviour change initiatives be communicated to the public in the most acceptable way? - How can we ensure the public buys in to the idea of water efficiency through behaviour change?
	10. How does the public perceive UK water efficiency stakeholders, and how does this affect the acceptability of water efficiency?	<ul style="list-style-type: none"> - To what extent does distrust of UK water companies influence consumers' willingness to save water? - Can distrust of UK water companies be overcome, and if so, how? - Can we challenge perceptions that water companies are to blame for water scarcity, and if so, how? - Are customers of nationalised water companies more willing to save water than customers of privatised water companies, and if so, why? - Which stakeholders/organisations would the public view as most credible and trustworthy if they were to deliver water efficiency messages, and why?

Saving water in the home: A co-created agenda for research and action

	<p>11. How acceptable are water efficiency behaviour change initiatives among the public, and why?</p>	<ul style="list-style-type: none"> - How acceptable or unacceptable are different water pricing models/tariffs, and why? - How acceptable or unacceptable is a water use cap, and why? - How acceptable or unacceptable is showering at a lower temperature, or for less time, and why? - How acceptable or unacceptable is showering less often? - Are consumers willing to move from water-intensive showers to lower-water showers, and why? - How acceptable or unacceptable is not flushing the toilet, and why? - How acceptable or unacceptable are water-efficient appliances that compromise user experience, and why?
<p>Developing behavioural solutions</p>	<p>12. Which determinants of behaviour should be targeted?</p>	<p><i>Awareness of water efficiency</i></p> <ul style="list-style-type: none"> - How can we best build awareness of water scarcity and the need for water efficiency? - What is the best metric to depict and explain water scarcity and the need for water efficiency? - What makes an effective water efficiency message? <p><i>General motivation</i></p> <ul style="list-style-type: none"> - How can we motivate consumers to voluntarily save water? - How can we motivate non-end-users (e.g., landlords) to save water in the absence of personal benefits? - How can we motivate consumers to voluntarily adopt technology to enable water efficiency? - How can we motivate consumers who do not want to use technology-based solutions to save water? <p><i>Cost</i></p> <ul style="list-style-type: none"> - How important is cost as a motivator for water efficiency behaviour change?

Saving water in the home: A co-created agenda for research and action

		<ul style="list-style-type: none"> - Can we incentivise water efficiency despite the low financial cost of water to the consumer, and if so, how? - How can we promote behaviour change at minimal financial cost to the consumer? <p><i>Emotions</i></p> <ul style="list-style-type: none"> - What are the emotional triggers that prompt engagement in water-efficient behaviours? <p><i>Social influences</i></p> <ul style="list-style-type: none"> - Can we create or harness social norms to drive consumers to save water, and if so, how? <p><i>Habits</i></p> <ul style="list-style-type: none"> - Can we break ingrained water-use habits, and if so, how? <p><i>Decision-making</i></p> <ul style="list-style-type: none"> - How do heuristics and biases affect consumers' willingness to reduce water use?
	13. What are the optimal behaviour change intervention approaches, and why?	<p><i>Generic solutions</i></p> <ul style="list-style-type: none"> - Is there a 'best strategy' for encouraging consumers to change their behaviour, and if so, what is it? - Can we encourage consumers to change their behaviour without using messaging, and if so, how? <p><i>Messaging solutions</i></p> <ul style="list-style-type: none"> - What makes an effective water efficiency behaviour change message, and why? - How can water efficiency messages best communicate the benefits of using less water? <p><i>Feedback-based solutions</i></p>

Saving water in the home: A co-created agenda for research and action

		<ul style="list-style-type: none"> - What is the most meaningful data to feed back to consumers to ensure they recognise and understand their water consumption, and why? - Should feedback be based on water savings, energy savings, money savings, or some other outcome, and why? <p><i>Gamification solutions</i></p> <ul style="list-style-type: none"> - How effective would a water efficiency gamification approach be, and why? - If gamification were used, at what point within a water use event should it be deployed, and why? <p><i>Design solutions</i></p> <ul style="list-style-type: none"> - Would making 'eco' settings the default on appliances reduce water (and energy) consumption? - How do consumers interpret 'eco' settings on appliances, and why? - How can we better communicate the meaning and benefits of 'eco' settings on water-use machines?
	<p>14. What are the optimal behaviour change solutions for specific water use behaviours, and why?</p>	<p><i>Showering solutions</i></p> <ul style="list-style-type: none"> - To achieve most leverage over showering water use, should we target consumers who take longer showers, or those who wait for the shower to warm up? - Where are the opportunities for behaviour change within a showering episode? - What are the main barriers to consumers turning off showers midway through? <p><i>Leak-focused solutions</i></p> <ul style="list-style-type: none"> - How should we encourage consumers to check for and address leaks, and why? - Which behaviours should we target to prevent leaks? <p><i>Water efficiency message engagement solutions</i></p> <ul style="list-style-type: none"> - Can we motivate consumers to engage with data from a water meter, and if so, how?

Saving water in the home: A co-created agenda for research and action

	15. How should effectiveness be defined?	<ul style="list-style-type: none"> - How should we measure behaviour change? - Can the effectiveness of behaviour change initiatives be sustained over time, and if so, which initiatives, how and why? - Should an initiative that has only short-term benefits be deemed effective? - Should effectiveness be based on water consumption only, or on related outcomes (e.g., carbon emissions)? - How should we measure impact beyond behaviour change? - Does increased water efficiency in domestic settings spillover to non-domestic settings?
Contextualising behaviour change	16. When are consumers most receptive to water efficiency initiatives, and why?	<ul style="list-style-type: none"> - Are consumers more receptive to water efficiency initiatives following life transitions, and why? - Are consumers more receptive to water efficiency initiatives after moving on to a water meter, and why? - Which moments of change shape receptiveness to water efficiency initiatives, and why? - Around which moment(s) of change are consumers most receptive to water efficiency initiatives, and why? - Are consumers more receptive to water efficiency initiatives in certain seasons, and if so, why?
	17. How and why do physical environmental factors determine consumers' receptiveness to water efficiency initiatives?	<p><i>Geographical</i></p> <ul style="list-style-type: none"> - Are consumers less receptive to water efficiency initiatives when they perceive greater water availability (e.g., from rainfall, living in wetter areas, importing water from other areas), and if so, why? - Do consumers in different regions respond differently to water efficiency initiatives, and if so, why? <p><i>Structural and related</i></p> <ul style="list-style-type: none"> - Are consumers more receptive to water efficiency initiatives when they are on a water meter or rateable value tariffs, and if so, why?

Saving water in the home: A co-created agenda for research and action

		- Are water efficiency initiatives more or less effective in certain housing stock, and if so, why?
	18. How and why do socio- and geo-demographic factors determine consumers' receptiveness to water efficiency initiatives?	- Are consumers from certain socio- and geo-demographic groups (e.g., age) more receptive to water efficiency initiatives, and if so, why? - Does culture affect receptiveness to water efficiency initiatives, and if so, how and why?
Targeting the water sector		
Building capacity and knowledge	19. How can we best embed behavioural science thinking into the water sector?	- How can the sector best be supported to adopt a behavioural science perspective on water efficiency? - How can water companies be encouraged to engage in more behaviour change experimentation, testing and implementation?
	20. How can we best capitalise on existing insights and expertise within the water sector?	- How can we best facilitate exchange of existing knowledge (e.g., from relevant research and impact activity) among water sector stakeholders? - How should water stakeholders work together in the most mutually beneficial way?
	21. How and what can the water sector learn from other sectors and settings?	- How and what can we learn from people who are highly effective at minimising water use? - How and what can we learn from water efficiency experiences in non-domestic settings? - How and what can we learn from other, water-scarce countries? - How and what can we learn from the energy sector? - How can we ensure cross-pollination of behaviour change ideas between the water and energy sectors?
Moving beyond behaviour change	22. How effective are behaviour change initiatives, and how effective could they be?	- Is behaviour change the best approach to promoting water efficiency? - How effective are behaviour change initiatives? - Is there an upper limit to the effectiveness of behaviour change initiatives?
	23. What other approaches could be used instead of, or alongside,	- Is mandatory regulation required to encourage water efficiency behaviour change?

Saving water in the home: A co-created agenda for research and action

	water efficiency behaviour change initiatives?	<ul style="list-style-type: none"> - Would a systems-based approach be more beneficial than focusing on behaviour change? - How can a behaviour change approach be reconciled with a systems-based approach? - How can the sector best be supported to adopt a systems-based perspective on water efficiency? - If a systems-based approach were adopted, who would be responsible for systems-based change?
	24. How can water companies best balance behaviour change against other priorities?	<ul style="list-style-type: none"> - How can water companies promote behaviour change without increasing cost or decreasing revenue? - Is the assumption that behaviour change may compromise revenue justified? - Would water companies be more or less willing to prioritise water efficiency if volumetric tariffs were adopted (instead of fixed charges)? - Who should bear the financial costs of delivering behaviour change initiatives? - How to promote behaviour change without compromising customer experience/feedback scores? - Can water efficiency behaviour change be successfully promoted without increasing social inequalities, and if so, how?