Understanding household water behaviours and testing water efficiency messages

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Executive summary

This summary sets out key findings from research undertaken by Icaro Consulting and Ipsos MORI on behalf of Defra.

Objectives

The purpose of the research was two-fold:

(a) *Understand household behaviours in relation to water use and the key motivations and barriers*

While there is a significant body of existing research looking into (conscious) attitudes and behaviours in respect of water, there is much less on the processes governing water use that operate sub-consciously and/or independently of wider attitudes and value sets. Therefore, the research sought to take a broader view of water using behaviours, incorporating some of the psychological and sociological drivers associated with certain activities that take place in the home (e.g. laundry, showering). This approach draws upon insights from a range of different theoretical disciplines which re-conceptualise water use as a relatively incidental by-product of 'daily life'.

(b) *Test messages aimed at encouraging water efficient behaviours.*

This forms part of a wider commitment in *Water for Life*[1] to support the development of effective messaging that promotes a perception of water as a valuable resource. A range of messages were developed that go beyond traditional value/attitude driven behaviour change and test the efficacy of messages that target specific household activities and activate emotional, rather than rational, responses (e.g. social proof).

Methodology

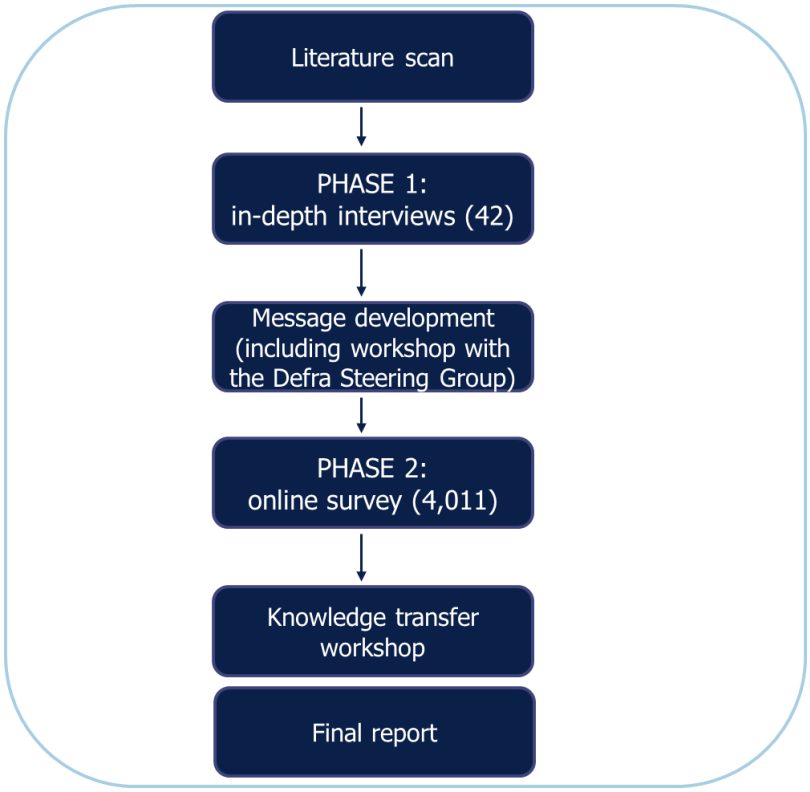
The research methodology, outlined in Figure S1, involved two main phases of research: (a) 42 in-depth home interviews; and (b) a survey of 4,011 households in England.

The qualitative research, undertaken first, explored in-home behaviours and activities, the motivations and barriers to water efficiency, and reactions to some existing communications on water (e.g. from their water company). The survey, building on the qualitative insights, had a narrower remit to test (i) the prevalence of different behaviours in the home across the population as a whole, and (ii) specific water efficiency messages. The messages were developed by the research team in the interim between the two phases and also involved a workshop with the Defra Steering Group.

The research was supplemented by an initial literature scan of the wider evidence base and, following on from the research, a knowledge transfer workshop involving practitioners with expertise in engaging with / communicating to the public on water efficiency.

[1] http://www.official-documents.gov.uk/document/cm82/8230/8230.asp

Figure S1. Overview of the research methodology



In order to avoid priming and social desirability biases both the depth interviews and the survey focused initially on household activities and routines, with direct questioning about water efficiency only undertaken subsequently. Likewise, the invitation to participate in the research made no reference to water efficiency.

It is also important to note that the research is based upon reported, rather than observed, behaviour. In particular, the survey analysis is only able to identify which laundry and showering related behaviours make higher water consumption *more likely*.

Key Findings

I) Household behaviours and activities

The research explored current behaviours in two ways: (i) by asking respondents directly how much effort they go to reduce their water use; and (ii) by focusing on household behaviours and activities that involve water use. The key findings are as follows:

Stated effort to reduce overall water use: reported effort to reduce in home water use varies considerably– with broadly speaking half of households making a concerted effort (either a 'great deal' (18%) or 'fair amount' (35%)) whereas the other half are less inclined (either making 'some effort' (32%) or 'not much/none' (15%)).

This variation is the result of some significant differences across sub-groups within the population – with greater effort to reduce water use reported among older residents, those with a water meter, those with higher household incomes and those who consider themselves to be 'very' environmentally friendly. By contrast, factors such as geography/ levels of actual water stress do not influence stated effort to reduce water use.

Household behaviours and activities - the results of this indirect focus on water consuming activities demonstrate a wide variation across households in terms of the manifestation of the observed activities and behaviours. For example, around one in four households (24%) do 1-2 washes per week while around one in ten (11%) do 8+ washes; and likewise one in ten (10%) wash their towels *after every use* while 14% use their towels *8 or more* times before washing them. There is a strong inter-relationship between the wash frequency of different items and a sub-group of households *systematically* have higher wash frequencies (even though, at the same time, they are just as likely to consider this frequency to be 'average' and typical of others).

The two alternative focuses on water use point to different sub-groups within the population. For example, those questions that ask about the water use directly tend to identify correlations with variables such as environmental values and the presence of a water meter. However, when the focus shifts to specific activities such as showering and laundry then factors such as children, household size, age and gender come to the fore (Table S1). Age is particularly interesting, with younger cohorts (18-34) taking notably longer showers but older cohorts (55+) washing items such as jeans, bedding and towels more frequently.

Table S1 – variations by sub-group across water-using activities
NB. Bold font indicates the sub-group where the correlation is strongest for each category

		LOWER WATER USE MORE LIKELY (e.g. lower wash/watering frequency)	HIGHER WATER USE MORE LIKELY (e.g. higher wash/watering frequency)
LAUNDRY	Wash frequency	Aged 65+ and 55-64; Men; **No children in hh**; water meter	Aged 35-44 and 44-54; Women; Homemaker; **Children in HH**; no water meter
	Jeans	Aged 55-64; **Men**; No children in hh; higher income	Aged 65+; Women; Children in HH; **Homemaker**; lower income
	Towels	**Aged 18-24**; Men; No children in hh; higher income	Aged 65+; Women; Children in hh; Homemaker; **lower income**
	Bedding	Aged 18-24 and **25-34**	Aged 65+; **Homemaker**
GARDENING	Watering	**Aged 65+**	**Aged 18-24** and 25-34; very keen gardeners
DISHES	Dishwasher frequency	**Aged 65+**; No children in HH; No set routine	Aged 18-24; **Children in hh**; Homemaker
SHOWERS	Shower frequency	Aged 65+; Retired	Aged 18-24; Working FT
	Shower time	Aged 55-64 and **65+**	**Aged 18-24** and 25-34

II) Motivations and barriers

The research, drawing predominantly on the in-depth interviews, identifies the following issues that, variously, act as either motivations or barriers.

- **Water as a precious resource:** The research suggests that water is intuitively conceptualised as a precious resource that should not be wasted (tapping into a deeper societal narrative about 'doing the right thing'). Furthermore, there is a subtle but important distinction in the way in which water relates to 'the environment' and 'resource use' (two concepts that can sometimes be considered synonymous among the research and policy community). The links between water and the environment appear relatively weak, whereas the link with resources appears much stronger.

- **Salience:** while the public intuitively recognise water as a precious resource, it continues to be hindered by a lack of salience. So while water is considered *precious* it is simultaneously considered *abundant*; likewise, although individuals are *conscious* of the issue they are not *concerned*. The salience of water is undermined by:
    - *Visual cues* (e.g. green fields, rainy days and even just overcast days) that support a perception that water is abundant in England and also suggest that a 'hot' and/or summer drought will be perceived differently to a 'cold' and/or winter drought.
    - *A lack of feedback*, including weak price signals, bills that are difficult to understand and direct debit payments that give constant payment amounts (irrespective of whether consumption has increased or decreased).
    - *A lack of jeopardy* because households do not feel impacted or threatened by water restrictions (other than, for gardeners in areas with hose pipe bans, a short disruption to their ability to use a hose).

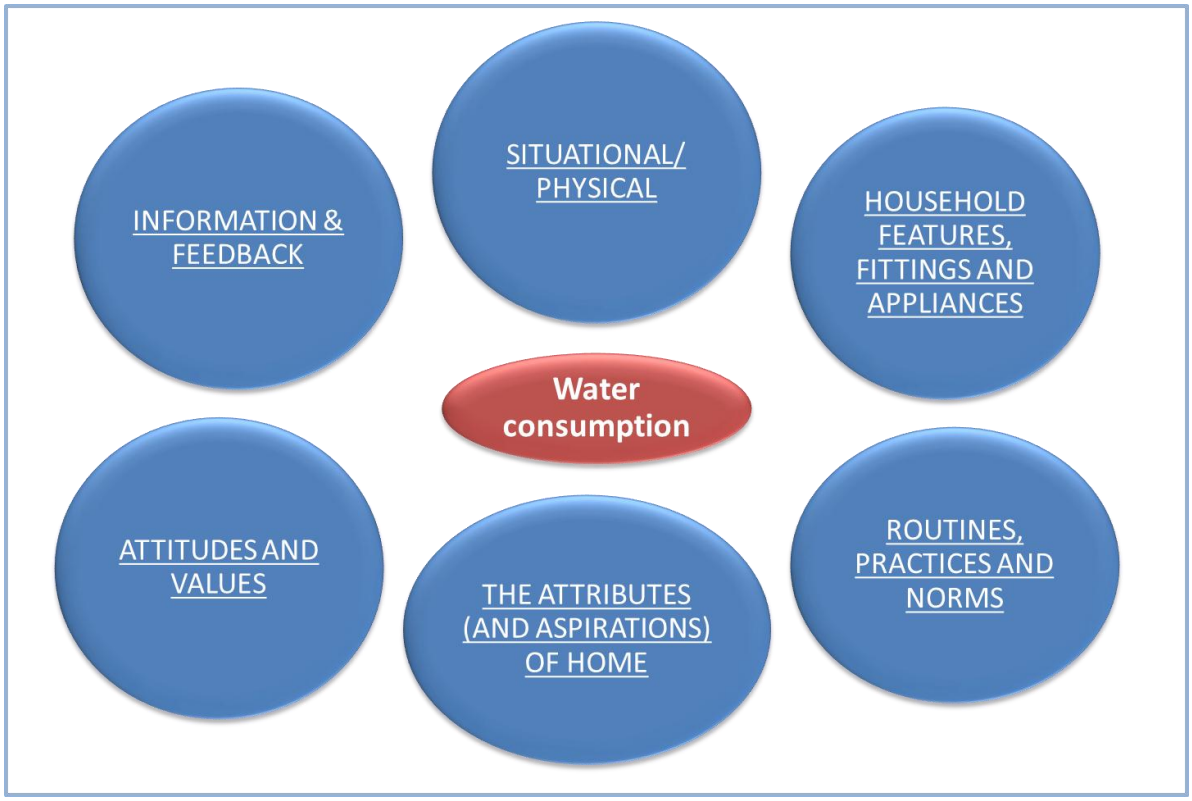
  While drought episodes increase the salience of water (especially when they are supported by cues such as hot/dry weather), their treatment as 'exceptional' short term events potentially block efforts to establish water efficiency as a longer term concern).
- **Lack of potential for change:** a simple but powerful barrier is a perception that there is little scope for change at the household level; that they use 'as much as they need'. The qualitative research suggests that this appears in part to be driven by a perception that water efficiency equates to 'not doing something' rather than 'doing something differently'.
- **Social norms:** because many of the relevant behaviours are private, households are largely unaware of what is 'normal' (beyond what they have learned from parents or – in the case of gardening - what they can observe among neighbours). In the absence of a particular reference point the default assumption is that their own behaviours are typical (even among those with behaviours that are in fact atypical).
- **Use of appliances and settings:** while there is evidence of households making positive adaptations (including the use of quick, eco and/or 30 degree wash settings), others are not taking full advantage of the functionality that their appliances and controls give them. For example, some interviewees were not aware that they already had a dual flush, while others were not clear if their shower was a power shower or not.
- **Competing motivations (hygiene, luxury and relaxation):** even though there may be motivations (such as a dislike of waste) that increase the propensity for water efficiency, competing motivations favour higher water use. Potential conflicts include a desire for home improvements and 'signature' bathrooms (e.g. wet rooms, Jacuzzis), and a strong (and culturally reinforced) desire to prioritise hygiene, cleanliness and relaxation.
- **Children:** in keeping with the wider evidence base, the presence of children (especially teenagers) increases the chances of higher water use.
- **Water meters:** The extent to which water meters drive efficient behaviour is partly confounded by the fact that some households request meters because they are already efficient. The survey highlights that those who *actively request* a meter are more likely to go to a 'great deal' or 'fair amount' of effort to reduce their water use (77%, compared to 62% of those who had a meter installed compulsorily). However, having a meter – whether requested or not – still leads to higher levels of effort when compared to those households without a meter, of which only 43% make an effort to reduce their water use.

- **Leakage:** the research re-affirms a common thread in the literature about the importance of water company leakage rates. In cases where individuals have seen a leak near them it has clearly had a strong emotional impact (making them 'angry' and 'upset'); and more broadly it provides a rationalisation for rejecting the need for individual action.

The insights from the research allow for the development of a simple, working model that outlines the key determinants of in-home water use (Figure S2).

- *Situational/physical factors* – including, for example, the size and condition of the house, the number of bathrooms and the presence and size of a garden;
- *The attributes and aspirations of 'home'* – in particular the services it provides in terms of comfort, relaxation and cleanliness, and aspirations for changes in the future;
- *Routines and practices* – including the division of responsibilities for different tasks and how these are undertaken;
- *Household appliances, fittings and controls* – the presence of new water efficient measures and the way in which households interact with / adapt to them (or not);
- *Information and feedback* – including formal information (e.g. bills, meters); visual cues (e.g. the weather); and social/cultural cues (e.g. the behaviour of others and the prevailing 'normality' and dominance of certain behaviours and societal narratives);
- *Attitudes and values* – in particular the extent to which households consider their water use and the need to conserve water.

Figure S2. Key determinants of water use



III) Messages

Following the in-depth interviews a series of outline messages where developed by the research team for testing. These were not intended to represent finalised, campaign-ready messages, but rather to test the potential for different types of messaging (e.g. traditional communications that have focused on making the environmental case for water efficiency vs. messages that provide social proof or activate emotional responses).

Two distinct types of messages were tested: those aimed at 'making the case' for water efficiency (which we refer to here as the 'wider narrative') and those that focused on specific household activities like laundry, washing up, gardening and showering. The findings for both sets of messages are discussed separately.

Messages focusing on the wider narrative

A 'malleability' question was devised to track the impact of wider narrative statements:

- Prior to seeing any statements, respondents were first asked to place themselves on a scale of 0-100 with a slider bar in terms of how necessary they think it is for households in England to go further to reduce the amount of water they use (where 0 = not at all necessary and 100 = extremely necessary).
- Then, after seeing each of five statements, they were asked to move the slider bar (if the message had changed their opinion) or leave it where it was (if it had not). The statements were randomised to ensure that they appeared in different sequences.

The findings demonstrate that many households already accept, without any messaging, the broad need for households to go further to save water – the average starting score is 70.6. Turning to the impact of specific messages on respondents' average score, the results highlight three key findings:

- The impact of the messages - in combination - is slightly negative, i.e. after seeing five statements (all aimed at *increasing* the perceived necessity for households to go further to reduce their water use) respondents are slightly *less likely* to think it is necessary.
- Some individual messages have a positive impact. The best performing statement is: *Increasing consumption, together with a growing number of households, has put pressure on water supply in England and it is likely that this problem will worsen with climate change. If we do not act the security of our water supplies could be compromised*. Furthermore, messages linking water and energy use also have a modest positive impact.
- By contrast, some statements have a negative impact, particularly so the statement: *The UK is not an exceptionally wet country. London, for example, has around the same average rainfall as Barcelona.*

Furthermore, the depth interviews suggest that messages that invoke a sense of responsibility strike a chord with several 'deep frames' (Crompton, 2010)[2] about the relationship between water companies and consumers. For example, interviewees were notably more dismissive of messages that focus solely on the need for individual action; whereas they were receptive to similar messages re-framed to demonstrate action by water companies and then asking individuals to reciprocate.

[2] See e.g. *Common Cause: The Case for Working with our Cultural Values* (WWF, 2010).

Messages focusing on specific behaviours and activities

The results suggest significant potential for messages that target specific behaviours and activities, invoke social norms and/or elicit emotional reactions. For example:

- Half of households (50%) say they are likely to change what they currently do in response to the message *'clothes not really dirty and just need a freshen-up? Use a short wash cycle to save water and energy'*.
- Likewise, almost one in three (31%) are likely to change what they do in response to the message *'scientists have found that long, hot showers dehydrate your skin; so make it speedy and lukewarm for a youthful complexion'* (i.e. which adopts a beauty and vanity line with no specific mention of water use at all).

The research highlights the potential impact of tweaking elements of the message. For example, a pair of messages about towel washing used different norms – with one message claiming that 'most households use them at least a week before washing them'; and the other using two weeks as the norm. The former of these is notably more successful, and the key difference between them appears to be the distance between the invoked norm and the existing norm, i.e. the latter message – using the norm of a fortnight – appears too far away from what is currently considered 'normal' and therefore is potentially more easily rejected.

The research also identifies situations in which a very direct norm-based message might not be as effective. For example, using a pair of messages about jeans washing, the message '*the majority of people wear their jeans at least 10 times before washing them*' is less effective than the message '*don't ruin your clothes by over-washing them – jeans that are washed after every wear will wear out 5 times faster'*. The latter of these targets a specific (and unwanted) wash frequency rather than the average wash frequency.

IV) Conclusions

The research suggests that a shift in the balance of water efficiency messaging is required, away from high level messages (i.e. that explain, in general terms, why water efficiency is important) towards specific messages that target actions, behaviours and norms, and operate at an emotional, habitual as opposed to rational, level.

Further work is now required to develop/hone the messages, understand who is best placed to deliver them, and evaluate them in a live setting. Encouragingly, the outcomes from the knowledge transfer workshop – which demonstrated a desire among practitioners to work in partnership - provide a useful platform to take the research further.

As a final comment, we re-iterate that, while the research largely focused on message-based interventions (necessarily so give that it was one of the project's main objectives), messages are just one of a suite of possible tools to encourage water efficient behaviours. In particular, and referencing other elements of the 'determinants of water use' model, we note the importance of improving the level of feedback to households (e.g. through better billing and/or metering), as well as the importance of increasing both the penetration of water saving appliances and fittings as well as consumers' ability to interact with them in a way that takes full advantage of the potential savings.

Introduction

This report outlines the findings of research undertaken by Icaro Consulting and Ipsos MORI, on behalf of Defra, to explore the motivations and barriers to water efficient behaviours and test messages aimed at encouraging water efficiency.

Background & objectives

The effects of climate change and a growing population are likely to put increasing pressure on water supplies, and in some areas of England water supplies are already under stress. The recent Water White Paper, *Water for Life*[3], acknowledged that water security cannot be delivered by Government alone. Householders, alongside other actors and agencies, will have a significant role to play in terms of their in home behaviours.

The purpose of this project was two-fold:

(a) Understand household behaviours in relation to water use and the key motivations and barriers

This has already been subject to a significant body of research (e.g. Defra, 2009[4]). However, much of this research has directly focused on (conscious) attitudes, values and behaviours, even though the process governing water use may operate sub-consciously and independently of wider attitudes and value sets. For example, a recent review of the literature by UKWIR[5] concluded that there is much less research to draw on that looks at behaviour changes on account of broader cultural or sociological influences.

Therefore, the research sought to unpick the psychological and sociological drivers of water consumption and develop an understanding of specific water-using behaviours and activities (e.g. laundry, showering, gardening).

This approach draws upon insights from a range of psychological and sociological discourses (e.g. social norms) as well as practice theory (i.e. the 'meanings' associated with health, beauty, cleanliness and comfort) which re-conceptualises water use as a relatively incidental by-product of a suite of household routines that constitute 'daily life'[6]. However, the research does not attempt to adopt an approach that is fully consistent with any one discourse or framework.

[3] http://www.official-documents.gov.uk/document/cm82/8230/8230.asp

[4] *Public understanding of water use in the home*, Defra (2009)

[5] UKWIR - http://www.ukwir.org/site/web/content/reports/reports

[6] See e.g. *Patterns of Water: The water related practices of households in southern England, and their influence on water consumption and demand management*. Final report of the ARCC-Water/ SPRG Patterns of Water projects, March 2013. https://www.escholar.manchester.ac.uk/uk-ac-man-scw:187780

(b) Test messages aimed at encouraging water efficient behaviours.

The second objective forms part of a wider commitment in *Water for Life* to support the development of effective messaging to promote a perception of water as a valuable resource. A range of messages were developed that go beyond traditional value/attitude driven behaviour change. These tested the efficacy of both conventionally environmentally focused messages as well as messages that target specific activities and/or activate emotional, rather than rational, responses (e.g. social proof).

Methodology

The research involved a mixed methods approach, utilizing both qualitative and quantitative methods. It comprised five phases:

i) Scan of the literature

A rapid scan of the literature was undertaken to help shape the design of the research methodology and ensure it was grounded in what had already been established through previous research. It was not, however, intended to provide a systematic, or even rapid, review of the evidence (as defined by government social research guidelines).

ii) Depth interviews

A series of 42 depth interviews was designed to unpick the psychological and sociological drivers of water consumption.

A sampling framework was developed to ensure that a range of households were captured (Table 1), according to their life stage (pre-children, family, empty nesters), whether they have a water meter or not, and whether they live in an area of 'high' or 'low' water stress. The locations for the former were London, Surrey, Suffolk and Norfolk; for the latter they were Bristol, Cheddar, Lancaster and Yorkshire. Participants were also recruited to ensure a broad range of age and gender.

Recruitment was undertaken by the specialist agency Leftfield using a face-to-face approach and according to a recruitment questionnaire. Participants were not told that the research was about water efficiency to avoid priming and social desirability bias. They were paid a £60 'thank you'.

Table 1 - Depth interview sampling framework

		Pre-family	Families	Empty nesters
High water stress	Metered	4	3	4
	Not metered	3	4	3
Low water stress	Metered	3	4	3
	Not metered	4	3	4

In most cases interviews were conducted with one person in the home. However, in other cases (if a partner or family member happened to be at home and willing to take part) they were undertaken with two or more people.

Interviews were undertaken in May and June 2012, after the coverage of drought affecting parts of the country and the subsequent spell of very wet weather.

Interviews were semi-structured, based around a discussion guide (Appendix 1) and lasted 1-2 hours. The interviews focused first on household behaviours and activities that underpin water consumption, including an initial tour of the home to set the discussions in context. It was only subsequent to this – in the second half of the discussions - that water use was directly explored and prompted as an issue.

A range of stimulus material was developed to guide the latter stages of the discussion, once the focus turned directly on water (Appendix 2). This included examples of messages used by water companies during the drought, 'freebie' water saving kits offered by water companies and the new water efficiency label for bathroom products.

iii) Development of messages

The depth interviews explored the drivers, barriers and determinants of water use. These findings were then used to inform the development of a number of water efficiency messages (to test in the online survey at phase iv).

Two distinct types of messages were tested: those aimed at 'making the case' for water efficiency (which we refer to here as the 'wider narrative') and those that focused on the specific household activities of laundry, washing up, gardening and showering. The former set of messages necessarily involved an explicit focus on water efficiency, whereas the latter set of messages does not.

They were not intended to represent finalised, campaign-ready messages. Instead, they were developed in order to provide a 'test bed' for assessing the broad potential of different kinds of messages. They were tested in written form only and using research methods that (necessarily) prompt respondents to consciously take notice and respond to the messages, which is different to how people would experience them 'for real'. The aspiration for Defra, looking beyond this research, is for partners to build upon them and test them in a live setting to observe their actual impact (rather than their potential impact).

iv) Online survey

The survey, building on the qualitative insights, had a narrower remit to test (i) the prevalence of different activities in the home across the population as a whole, and (ii) specific water efficiency messages.

An online survey of 4,011 households in England was conducted to provide both a robust overall sample and allow for detailed analyses of variations across different groups within the population. Fieldwork was undertaken from 19 – 23 October 2012 by ICM Direct.

To ensure that the sample was representative, quotas were set on age, gender, work status and region according to the known profile of the English population, using Census 2011 data (Table 2). Furthermore, and as a further measure to ensure sample quality, the quotas on age/gender and region/gender were interlocked. Minor post-hoc weighting was also used on an additional variable – tenure – to ensure the sample matches the profile of the population.

Table 2 – Survey quota profiles (drawing on Census 2011 data for England)

	Men (%)	Women (%)	Overall
18-24	6.1	5.9	12.0
25-34	8.6	8.6	17.2
35-44	9.0	9.2	18.2
45-54	8.7	8.8	17.5
55-64	7.3	7.6	14.9
65+	9.1	11.0	20.1
North East	2.5	2.5	5.0
North West	6.5	6.5	13.0
Yorkshire & Humber	5.0	5.9	10.0
East Midlands	4.25	4.25	8.5
West Midlands	5.25	5.25	10.5
East of England	5.5	5.5	11.0
London	7.5	7.5	15.0
South East	8.0	8.0	16.0
South West	5.0	5.0	10.0
Working full time			44
Working part time			12
Not working			44

At several points in the survey the sample was split into two halves (i.e. 2 x 2,000) to test the impact of varying aspects of the water saving messages (e.g. water consumption represented as a cost vs. litres used; or as the number of Olympic swimming pools it would fill). Matched sampling was used to ensure that each half of the sample had identical profiles in terms of age, gender, work status, region and tenure.

The survey was undertaken online. All survey types have their own embedded biases and idiosyncrasies, and some approaches are more suited to certain types of study than others. While online surveys do not yet provide the same level of coverage as face-to-face and telephone approaches, this has improved markedly as internet access has increased among the population. Furthermore, this method was particularly appropriate for this study given the need for large sample sizes and the need to present respondents with visual prompts. It does, however, preclude those with no internet access.

The survey was 20 minutes in length to allow for detailed questioning and to explore water efficiency from a number of different angles. In order to avoid priming or social desirability bias the flow of the questionnaire followed the approach of the depth interviews whereby actual household activities were explored first and direct questioning about water efficiency positioned later on. The invitation to participate in the survey, and the introduction, made no direct reference to water efficiency.

Filter questions were used to ensure that respondents answered only questions about behaviours and activities for which they had shared or full responsibility for in their home. The full topline results are outlined in Appendix 3.

v) Knowledge transfer workshop

A knowledge transfer workshop was convened by the research team on behalf of Defra and held in London on the 19th November 2012, attended by 55 practitioners from across Government, academia and the water sector, all with expertise in engaging with/communicating to the public. The workshop involved initial presentations, including interim data from this research project, followed by a series of round table discussions. The agenda and attendees are outlined in Appendix 4.

The key objective for the day was to identify areas where practitioners can work together to develop common water efficiency messages. A number of partnership working opportunities were identified, summarized in Appendix 5.

Structure of the report

The report is presented in two main parts, guided by the two central research objectives:

Part A: Understanding in-home water use

1. *Household features* – establishing what appliances and features households have that have implications for water use.
2. *Behaviours and activities* - a baseline of how households in England use water in the home, using both direct questioning about their water use as well as an alternative focus on household routines, dynamics and practices.
3. *Key drivers and barriers* – building on the existing evidence base, this section identifies the key drivers and barriers around water efficiency and develops a working model to describe the key determinants of in-home water use.

Part B: Messages

4. *Water messages I: the wider narrative* – testing the impact of high level water messages that focus on 'making the case' for water efficiency.
5. *Water messages II: specific behaviours and household activities* – testing the likely impact of messages that target specific activities and focus on the emotional drivers of behaviour.

A concluding chapter draws the findings together and discusses the implications of the findings and 'next steps'.

Interpreting the report

The research involved both quantitative and qualitative methods, and it is important to note the strengths and limitations of these approaches when interpreting the findings.

Qualitative research

Qualitative methods provide rich data, allow issues to be studied in detail and unpicked and focus on the 'how' and 'why' that underpins headline attitudes and behaviours. Nonetheless, they are not intended to be representative of the wider population. For this reason, when referencing the findings from the depth interviews, the report uses the language of 'participants' as opposed to 'the public'.

Quantitative research

Base sizes: The number of respondents answering a particular question (i.e. the 'base size') varied across the survey. For example, the questions focussing on specific household activities were asked only of those with sole or joint responsibility for each practice. It is important to understand who the results are referring to and so, therefore, base sizes are listed throughout in the tables and graphs.

Margins of error: Quantitative research provides hard empirical data that allows for an assessment of how attitudes and behaviours are distributed across the population as a whole. However, because they involve a *sample* of households (as opposed to asking all households in the country) the results are subject to 'margins of error' (sometimes referred to as 'confidence intervals').

Given the large sample size deployed in this research, the margins of error associated with the results are small (and therefore the accuracy associated with the results is high). For example, if the survey finds that 80% of all respondents (N = 4,011) pay attention to their water bill then the actual result[7] – if everyone in the country had been asked – would be within a range ±2 (i.e. somewhere between 78 - 82%). Furthermore, if 80% of those respondents living in flats (N = 659) say they pay attention to their water bill then the actual result – if all residents living in flats in the country were – would be between ±4 (i.e. 76-84%).

Statistical significance: Where the report uses the term 'statistically significant' in relation to the survey findings, this refers to results that are statistically significant at the 95% confidence level (i.e. $P < 0.05$).

Percentages: Percentages ('%') are used where the base size is greater than 100. Where the base size is lower than 100 the percentage is quoted alongside the actual number ('N') in brackets. Where the base size is lower than 30 the actual number ('N') is listed.

Where percentages do not add to 100% this is due to computer rounding of the raw data or multiple response questions. An asterisk (*) denotes a value greater than zero but less than one per cent.

[7] At the 95% confidence level, i.e. 95 times out of 100.

PART A:

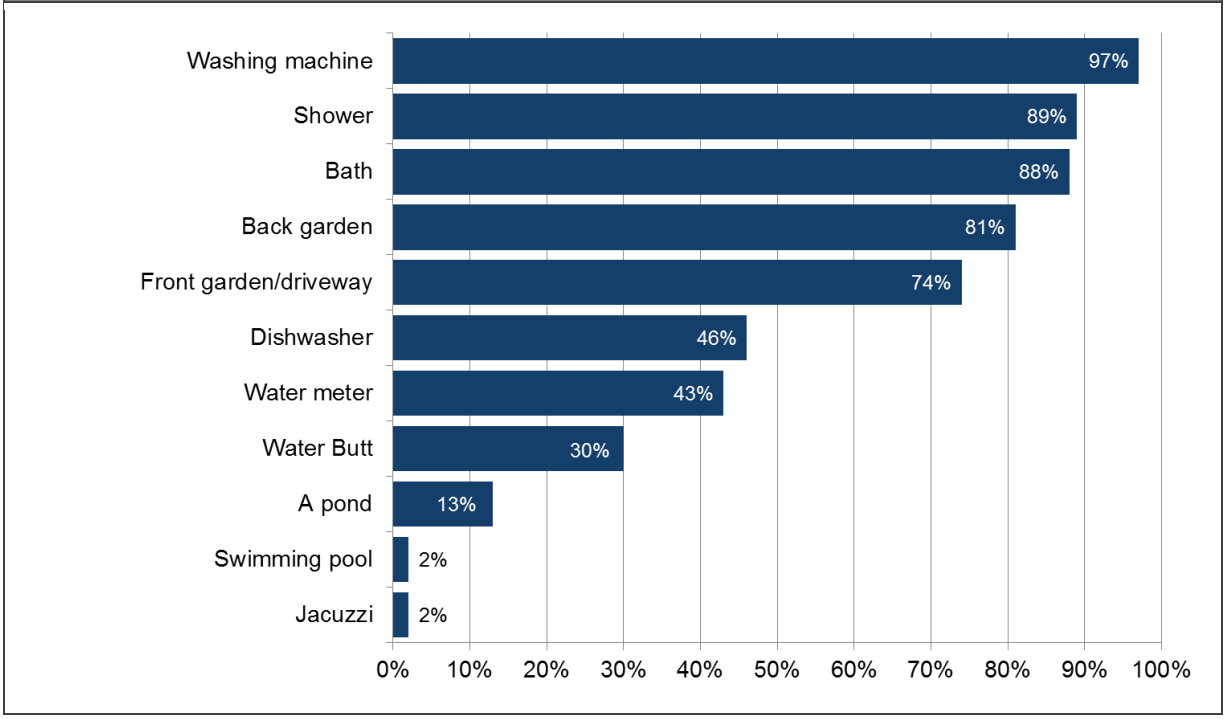
Understanding in-home water use

1. Household features

This first section of the report draws on the survey findings to provide a short, scene-setting summary of the features that households have with implications for water use. It demonstrates that virtually all households (97%) have a washing machine (Figure 1), while roughly even (and very high) proportions have a shower (89%) and a bath (88%). Almost half of homes (46%) have a dishwasher (although Section 2.3 demonstrates that not all of these use them), 43% have a water meter and 30% have a water butt. Only very small proportions have either a swimming pool or a Jacuzzi (2% and 2%, respectively).

Figure 1 – Household features and appliances

Question: *Which of the following, if any, does your household have? Please tick all that apply?*
Base: All (4,011)



The presence (or absence) of these features is linked most closely to dwelling type. For example, 97% of those living in a detached house have a shower and 94% a bath (compared to 83% and 82%, respectively, among those in flats). Furthermore, 78% of those in detached houses have a dishwasher (compared to 23% of those in flats) while 22% have a pond (compared to 3% of those in flats). With respect to Jacuzzis and swimming pools there is a small association with income (e.g. 5% of households with an income of more than £50,000 have a Jacuzzi, compared to very few households in other income groups).

The penetration of water meters varies across different households, notably by *age* (57% of those aged 65+ have a meter compared to 29% of those aged 18-24); *dwelling* (62% among those living in detached homes vs. 39% in flats) and *region* (ranging from 28% in the North East to 56% in the South West and 58% in the East of England).

2. Behaviours and household activities

This section, drawing exclusively on the survey findings, explores current behaviours and establishes a baseline for England in 2012. It does so in two ways:

(a) asking respondents directly how much effort they go to reduce their water use; and
(b) focusing on specific behaviours and household activities that lead to water use.

The former of these is consistent with conventional approaches to understanding attitudes and behaviours in respect of water use; whereas the latter is guided by a range of discourses (e.g. social norms, practice theory). The section is presented as follows:

- Effort to reduce water use (2.1)
- Laundry (2.2);
- Dishwashing (2.3);
- Gardening (2.4); and
- Showering (2.5).

2.1 Effort to reduce water use

The extent to which households try to reduce the amount of water they use varies across the population (Figure 2). Almost one in five (18%) say that they go to 'a great deal' of effort to reduce their water use, while around one in three (35%) say they go to 'a fair amount'. Taken together, this suggests that just over half of households (53%) are actively making some effort to reduce their water use. By contrast, a significant proportion (32%) say they make only 'some effort' while 15% say they make 'not much' or 'none'.

This varied picture is the result of significant variations across sub-groups in the population:

- *Age* – those aged 65+ are more likely to say they go to a great deal of effort (27%), compared to just 7% of those aged 18-24;
- *Household income*[8] – those with an income less than £20,000 per year are more likely to go to a great deal of effort (20%), compared to 12% with an income of £40,000+;
- *Environmental outlook* – over half (54%) of those who consider themselves 'very' environmentally friendly say they go to a great deal of effort, compared to 17% who say 'fairly' environmentally friendly and only 5% who say 'not very/not at all'.
- *Water meter* – just over one in four households (27%) with a water meter say they go to a great deal of effort, compared to 11% without a meter. Those who requested the meter are more likely to go to a great deal of effort compared to those who live in a home where the meter was already installed (32% vs. 24%, respectively).

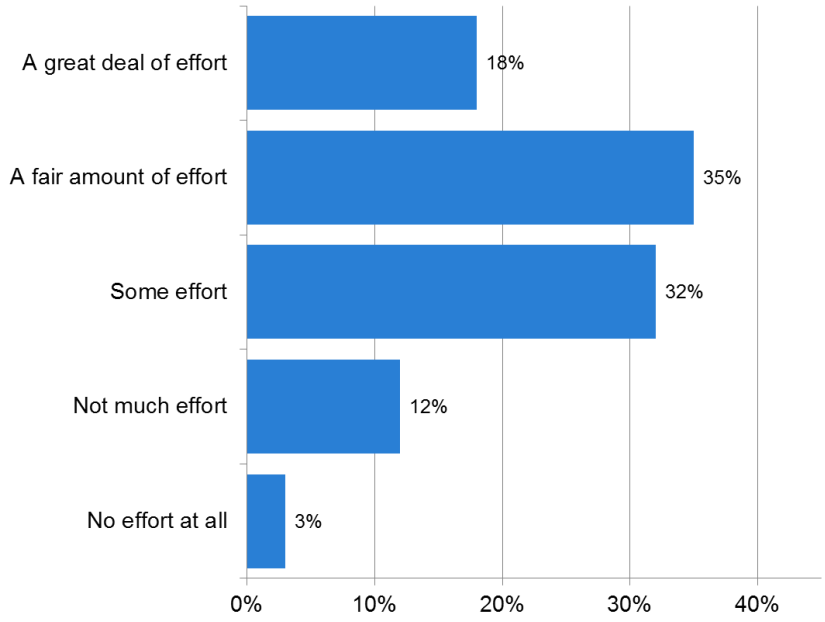
[8] Household income for respondents of working age, i.e. excluding those who are retired or in full time education

- *Attention paid to the water bill* – those who pay 'a great deal' of attention to their water bill are more likely to go to a great deal of effort to reduce their water use (42%, compared to 7% among those who do not pay much attention to the bill).

By contrast, there is no variation according to other factors – most notably levels of water stress - which appears to exert little influence on propensity to reduce water use.

Figure 2 – Effort to reduce water use

Question: *How much effort do you go to reduce the amount of water you use in the home?*
Base: All (4,011)



It is important to note that this question is based on individuals' own self-perception and is therefore subject to several caveats. For example:

- Individuals might not actually be cognisant about how their behaviours in the home translate into water consumption (i.e. they may judge that turning the tap off while brushing their teeth counts as a great deal of effort even though the water savings associated with this behaviour, on its own, are modest).
- The premise of the question – i.e. effort - does not necessarily equate with low use (indeed, a substantial proportion – 28% - of those households with a swimming pool and/or Jacuzzi say they go to 'a great deal' of effort).
- There is also a risk of social desirability bias (i.e. respondents inadvertently being guided to the 'right' answer).

Therefore, alongside direct questioning of this nature, the research also explored specific household behaviours and activities without any reference to water use. The results of this focus are outlined in the sections that follow.

2.2 Laundry

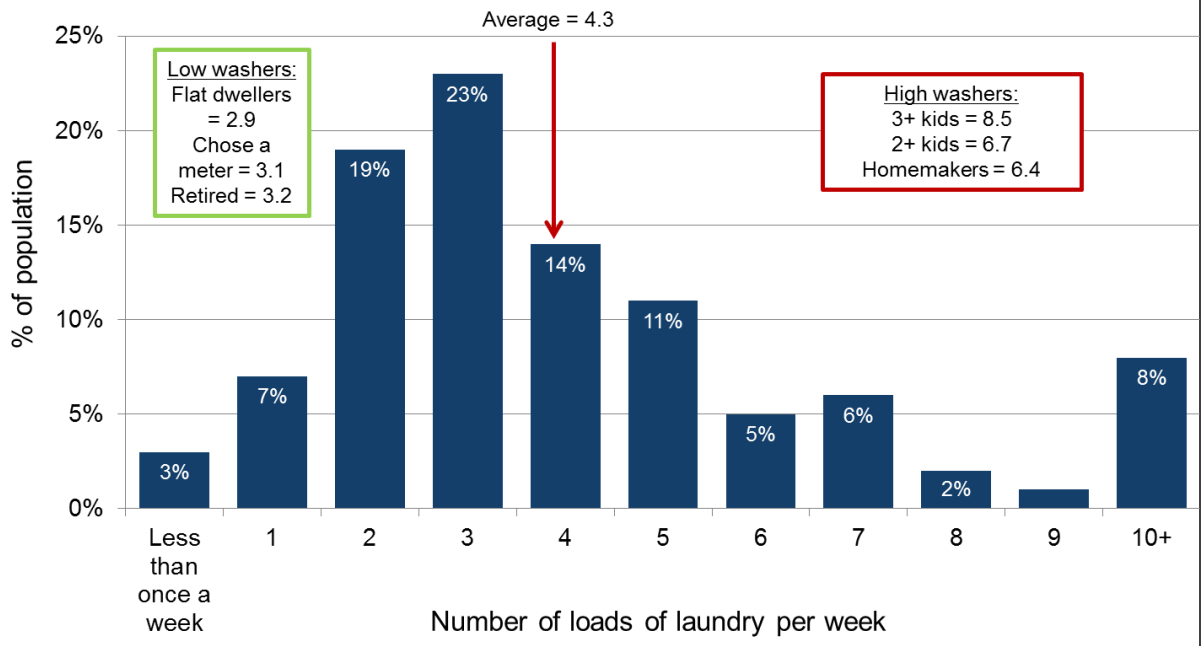
Number of laundry washes.

The survey finds that households in England undertake 4.3 laundry washes per week on average (Figure 3). This masks a diversity of wash frequencies – ranging from around one in four households (24%) who do 1-2 washes per week through to around one in ten (11%) who do 8+ washes. This supports the findings of recent research led by the Energy Savings Trust[9], involving observed rather than reported behaviours, which likewise found a large variation in frequency of use of the washing machine (with an average of 5 times/week).

Figure 3 – Number of laundry washes per week

Question: *In a typical week (i.e. 7 days), how many loads of washing does your household usually do?*

Base: Those with full or shared responsibility for laundry in their household (3,096)



The number of people in the household – and in particular the presence of children – is the strongest influence by some margin. Households with two children undertake 6.7 washes per week while those with 3+ children undertake 8.5 washes per week. Likewise, by association housewives/husbands undertake a higher number of wash loads (6.4) than average. This compares to 3.6 washes per week among households with no children. There are also a series of other factors that exert an influence, albeit to a lesser extent:

- *Age* – the average number of washes peaks among those aged 35-44 (5.3 - in part reflecting the presence of children) and is lowest among those aged 65+ (3.2).
- *Attention paid to water bill* – those who pay 'a great deal' of attention to their water bill do 4.1 washes per week, compared to 4.5 among those who do not pay much attention.

[9] *Powering the nation: household electricity-using habits revealed*, Energy Savings Trust, Defra and DECC, 2012. http://www.energysavingtrust.org.uk/About-us/What-we-do/Recent-reports

- *Water meter* – those with a water meter report a lower number of washes per week (3.8, compared to 4.6 among households with none), which in part reflects the fact that penetration of water meters is higher among older age groups.
- *Environmental outlook* – those who say they are 'very' environmentally friendly do fewer washes per week than those who are not environmentally friendly (3.8 vs. 4.5).

The number of washes per week has no relationship with how planned (or otherwise) households' laundry routines are. For example, those who wash according to a set routine do 4.7 washes per week, similar to those who wash according to no set routine (4.4).

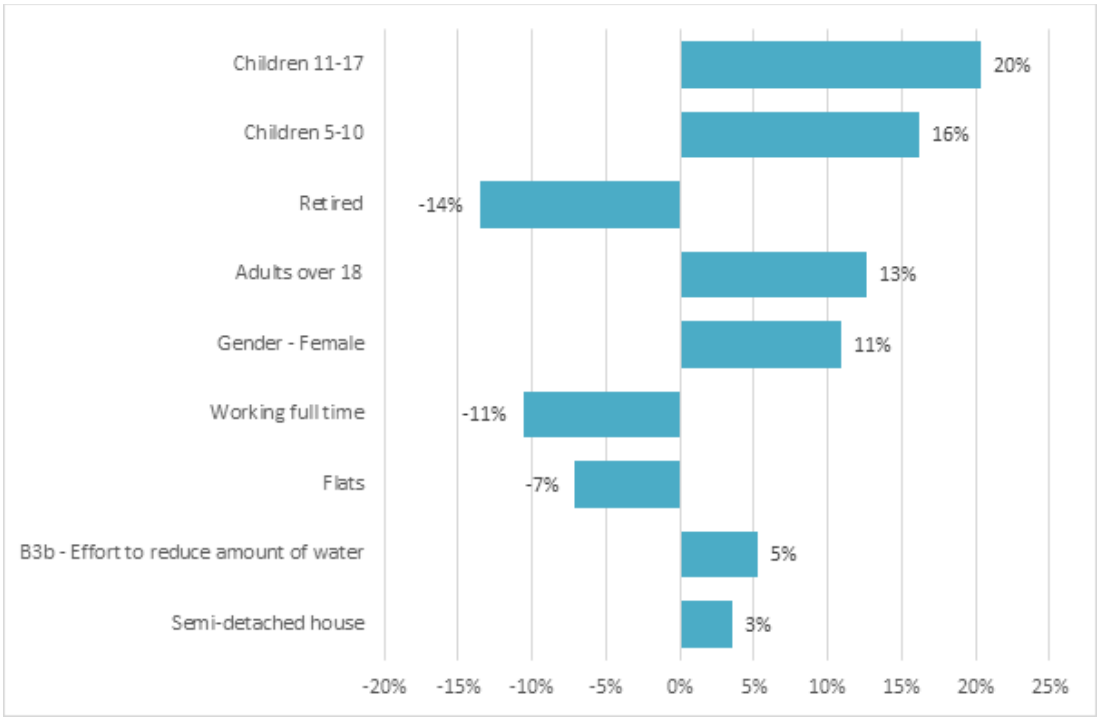
To take the analysis further and establish the relative strength of different variables on wash frequency, regression analysis was undertaken using Key Drivers Analysis (using all of the socio-demographic variables collected through the survey). This also removes any variables that appear significant but which are just auto-correlating with other variables of significance (i.e. they are only linked to wash frequency thorough casual association).

The results confirm many of the trends above, notably the presence of children which is the strongest driver - 20% of the variation in wash frequency is explained by the presence of children aged 11-17 in the home, and 16% by the presence of children aged 0-5 (Figure 4). The number of adults aged 18+ in the home and gender also drive wash frequencies. In contrast, and looking at the factors that appear to the left (i.e. which reduce the number of washes per week), being retired is associated with lower wash frequencies, as is working full time. The regression analysis shows that respondents' self-claimed effort to reduce their water use does have some impact but, in comparative terms, its influence is relatively minor.

Figure 4 – Key Drivers of number of laundry washes per week

Question: *In a typical week (i.e. 7 days), how many loads of washing does your household usually do?*

Base: Those with full or shared responsibility for laundry in their household (3,096)



Size of laundry load

The research shows that, while full loads are common place, there remains scope for improvement. Out of every 10 'typical' loads the majority (6.7) are full loads, 2.1 loads are 'quite full', 0.9 are half loads and 0.3 are 'small loads' (Figure 5). Furthermore, the number of full loads for laundry lags behind the number of full loads for dishwashers (8.2/10).

There is very little variation across the population in terms of size of laundry load. The exception is a relatively minor (but still statistically significant) trend according to children in the home – with households with 2+ children in the home reporting 7.2 full loads out of 10 compared to 6.6/10 among those with no children.

Laundry wash settings

Almost two in three households in England (65%) frequently use a 40 degree wash setting (Figure 6). This is followed by a 30 degree setting, which is now used frequently by more than two in five households (43%), as well as quick washes (30%) and 60 degrees (20%). Relatively few households regularly use eco-washes (11%), delicates (7%) woollens (6%) or a cold wash (4%).

Taken together, fewer than one in ten (7%) always use the same setting, almost two in five (38%) have a dominant wash setting but still use others from time to time, 29% alternate between two main wash settings and 24% regularly use three or more wash settings.

There are some minor variations according to environmental outlook, with those who say they are 'very' environmentally friendly more likely to use a 30 degree setting and an eco-wash (16%, compared to 4% who say they are not environmentally friendly). However, they are no more likely to use a quick wash. In contrast, the presence of a water meter has no impact on wash settings; nor does attention paid to the water bill.

Key considerations when doing laundry

The most frequent consideration when doing laundry – cited by 56% of households in England - is putting like colours together (Figure 7). This is followed by not under-filling the machine (39%) and putting like items together (33%). Not over filling the machine is also a key consideration (cited by 27%), as is how long the wash will take (26%). It is also notable that energy efficiency features more prominently than water efficiency (28% vs. 15%, respectively).

Figure 5 – Average size of load

Question: *Out of every 10 washes, how many of the following loads will you typically do?*

Base: Those with full or shared responsibility for laundry in their household (3,096)

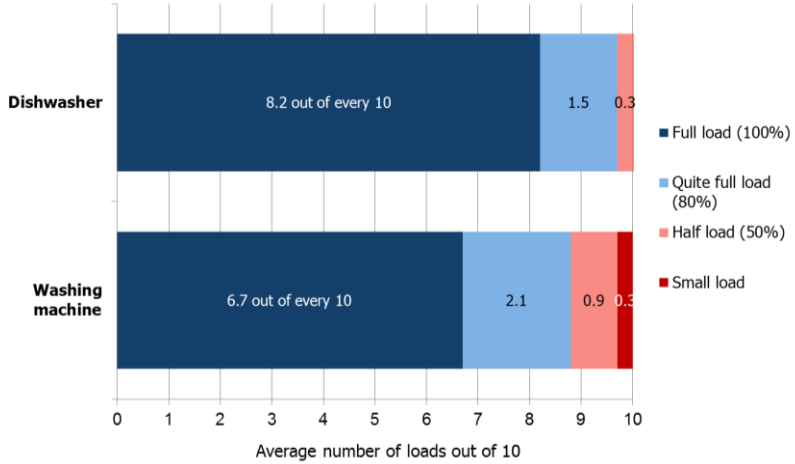


Figure 6 – Laundry wash settings used frequently

Question: *Which setting(s) do you frequently use?*

Base: Those with full or shared responsibility for laundry in their household (3,096)

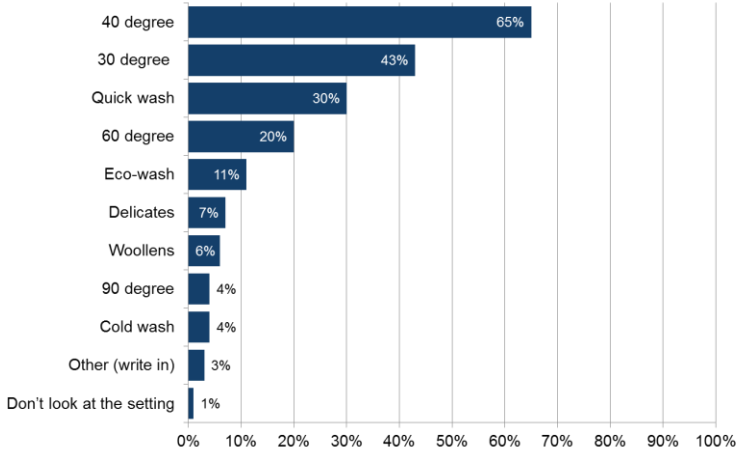
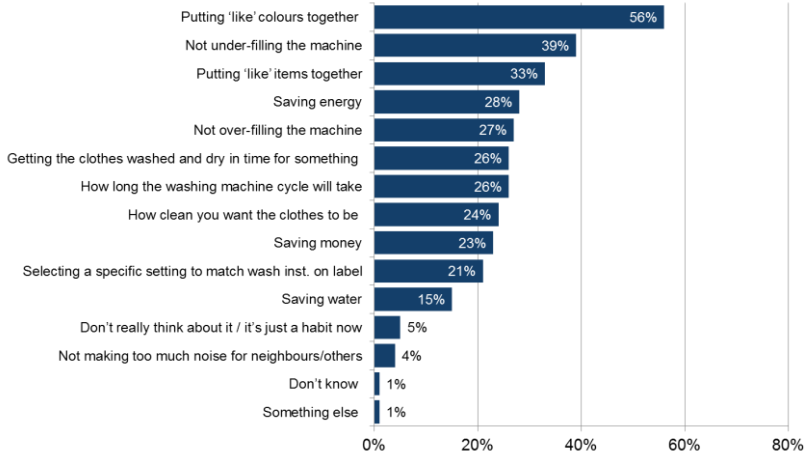


Figure 7 – Key considerations when doing the laundry

Question: *When you are doing the laundry, which of the following, if any, are typically the most important things for you? Please tick up to 4.*

Base: Those with full or shared responsibility for laundry in their household (3,096)



Wash frequency - jeans

The average number of wears in between washes for jeans is 5.3 (Figure 8). This masks a wide variation across the (jeans-wearing) population, with one in twenty (5%) washing jeans after every wear, through to 13% who wash their jeans after 8+ wears (with a particularly long 'tail' on the graph which extends out to 30-40 wears in between washes). There are a number of key variations by sub-group:

- *Gender* - men wash their jeans less frequently (after 6.8 wears on average, compared to 4.7 among women).
- *Children* – the average number of wears among those with children is 4.4 compared to 5.8 among those households with no children. Housewives/husbands have the highest wash frequency of any group (after 4.3 wears).
- *Income* - there is an inverse correlation with income, with more frequent jeans washing among lower income groups (and social renters in particular).
- *Age* – those aged 18-24 do not wash their jeans any more frequently than other age groups (5.7 wears). In fact, it is those aged 65+ who the most frequent washers (4.9) and those aged 55-64 the least frequent (6.3).

By comparison, there appears to be little variation according to how environmentally friendly people say they are, how much effort they go to reduce their water use or whether or not they have a water meter.

Wash frequency - towels

The average number of uses for towels in between washes is 5.4 (Figure 9). Just as with jeans, the survey finds a wide range of washing frequencies – as many as one in ten (10%) wash their towels after every use while 14% use their towels 8 or more times before washing them (with a long 'tail' on the graph that extends out to 30-40 uses in between washes). There are a number of similar variations by sub-group as there are for jeans:

- *Gender* - men wash their towels less frequently (6.2 uses in between washes, compared to 4.9 among women).
- *Children* – those households with children wash their towels more frequently than those without (4.4 vs. 5.7). Housewives/husbands once again have a particularly high wash frequency (4.0 uses in between washing).
- *Income* – wash frequency decreases with increasing income. Social renters have a notably high wash frequency (3.5).
- *Age* - those aged 18-24 and 25-34 wash their towels least frequently (7.0 and 5.9, respectively), while those aged 65+ wash them most frequently (4.7).

There is a strong inter-relationship between the wash frequency of jeans, towels and bedding. One sub-group of households in the population *systematically* have higher wash frequencies across a range of items (but, at the same time, are no more likely to acknowledge that they are above average). For example, those who wash their jeans after every use also have a high wash frequency for towels (after 3.2 wears), whereas those who wash their jeans after 8+ wears have a lower wash frequency for towels (after 9.9 wears).

Figure 8 – Norms around washing jeans

Question: *How many times do you typically wear jeans in between washes?*

Base: Those with full or shared responsibility for laundry in their household who wear jeans (2,540)

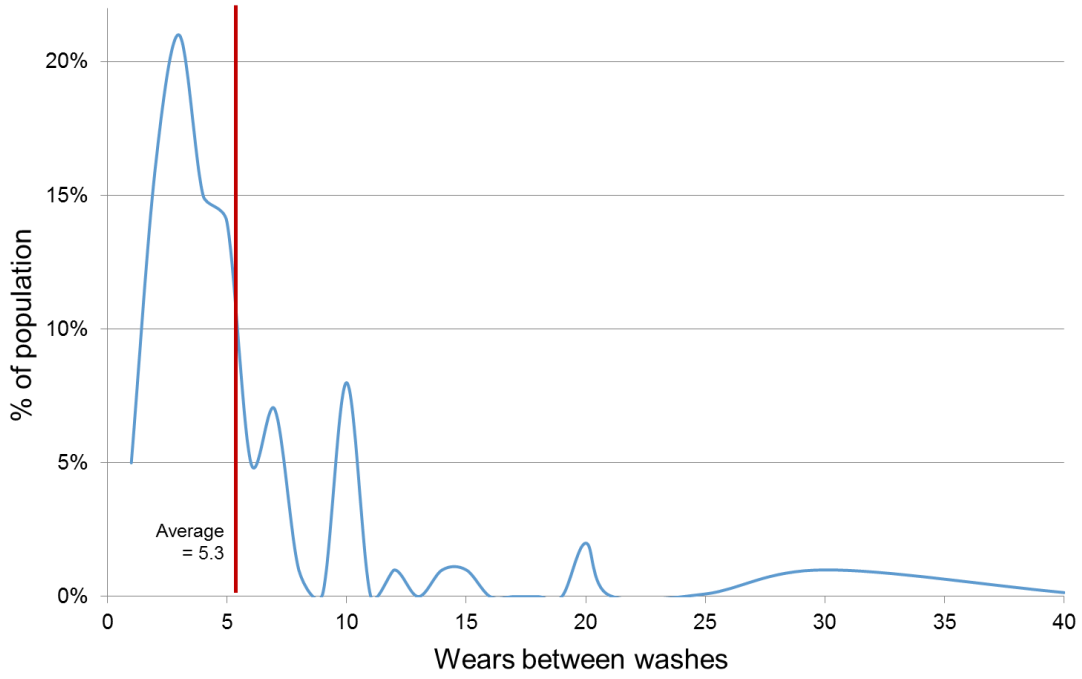
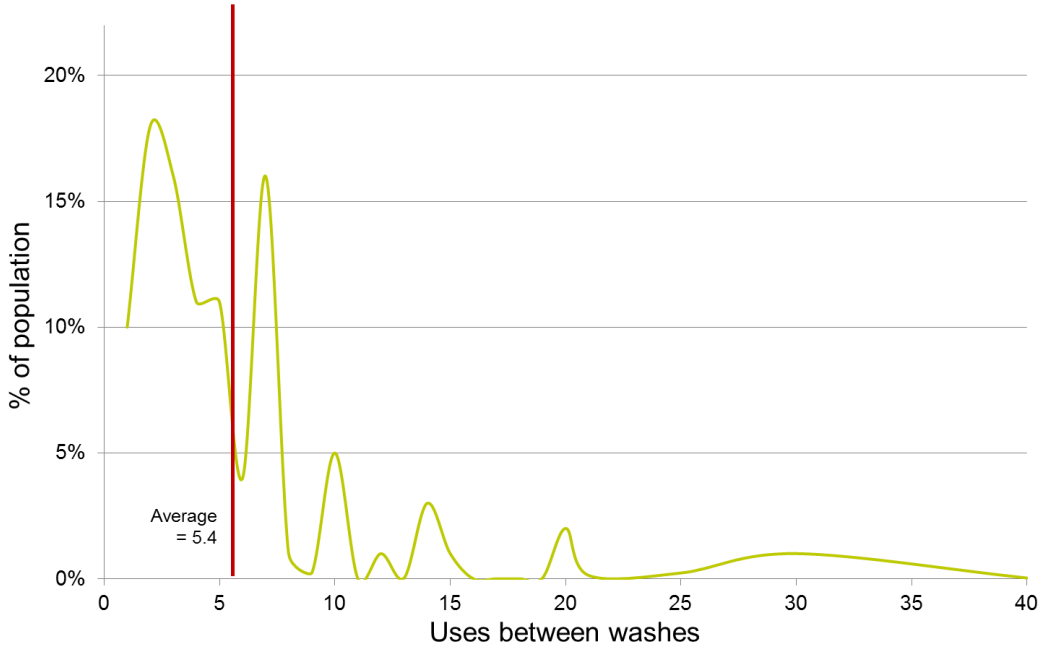


Figure 9 – Norms around washing towels

Question: *How many times do you typically use bath towels in between washes?*

Base: Those with full or shared responsibility for laundry in their household who use towels (3,010)



2.3 Washing dishes

Just under half of households in England (46%) have a dishwasher (Table 1). Of these households, close to two in three (68%) wash all or most of their dishes in the dishwasher, 11% use the dishwasher roughly half of the time, while just over one in five (21%) do not often use the dishwasher and instead opt to wash all or most of the dishes by hand.

Table 1 – Proportion of households with a dishwasher – and how often it is used			
Do not have dishwasher	54%		
Have dishwasher	46%	*Of those who have a dishwasher…*	
		All / most of the dishes are washed by hand	21%
		Roughly half of the dishes are washed by hand, and half in the dishwasher	11%
		All / most of the dishes are washed in the dishwasher, and sometimes by hand	68%

Number of loads per week

Households who both have and use a dishwasher undertake 4.4 dishwasher loads per week on average (Figure 10). This masks a diversity of wash frequencies – ranging from close to one in five households (21%) who use the dishwasher once or twice per week to a similar proportion (20%) who use them daily and a further 8% who use them 8+ times per week. There are a number of key variations by sub-group:

- *Children* – this is the strongest influence, with households with 3+ children undertaking 7.3 washes per week on average, compared to 3.8 loads per week among households with no children. Likewise, housewives/husbands are more likely to undertake a higher number of wash loads (5.6).
- *Routine* - whereas Section 2.2 demonstrates that there is no relationship between the number of laundry loads and the degree of routine, there is a relationship apparent for dishwashers – those who use the dishwasher according to a set routine do significantly more loads per week (6.0) than those with no set routine (4.0).

Dishwasher settings

The settings used for dishwashers are different and more varied than for washing machines. The eco-wash is the most frequently used setting (Figure 11), cited by around one in three households (29%). For comparison purposes, only 14% cited this setting in relation to laundry. This setting is used more by those who say they are 'very' environmentally friendly (35%) and those who say they go to a great deal of effort to reduce their water use (40%).

Other frequently cited wash settings include 60 degrees (19%), 50 degrees (14%) and 40 degrees (12%). A substantial proportion (17%) frequently uses the quick wash setting, although this is notably smaller than it is for laundry (30%). A similar proportion (15%) do not look at the setting they use (which is more likely to be true of those aged 18-24).

Figure 10 – Number of dishwasher loads per week

Question: *In a typical week (i.e. 7 days) how many times do you usually use the dishwasher?*

Base: Those with full or shared responsibility for washing up in their household and have a dishwasher that they use (1,547)

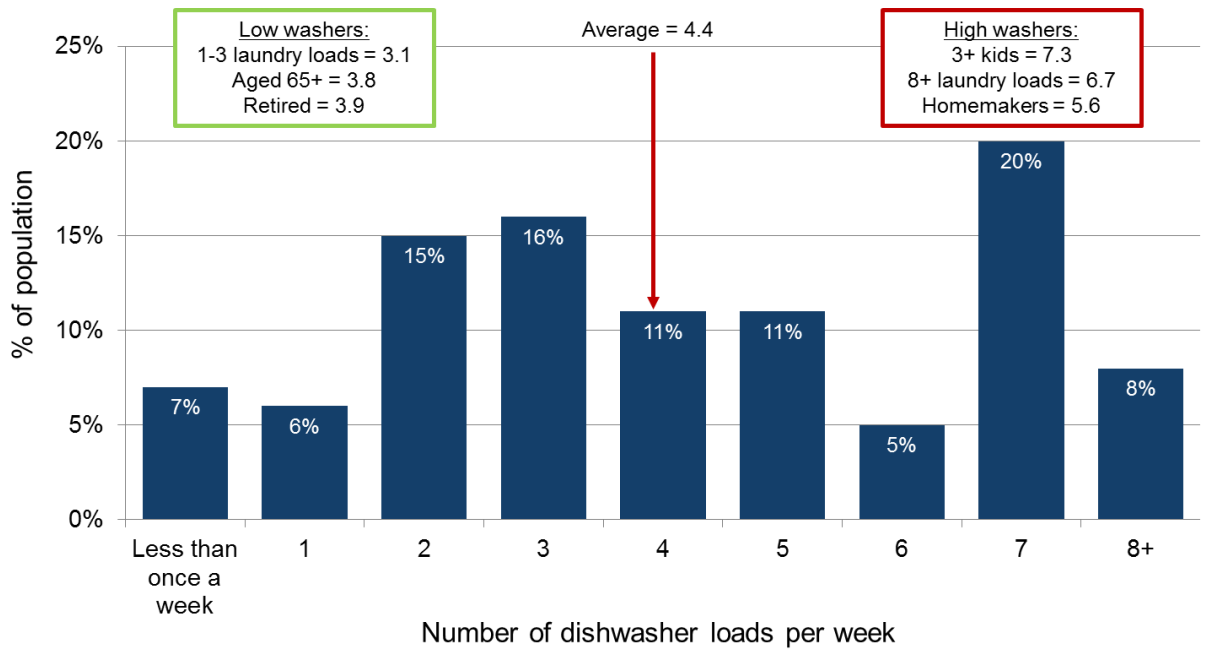
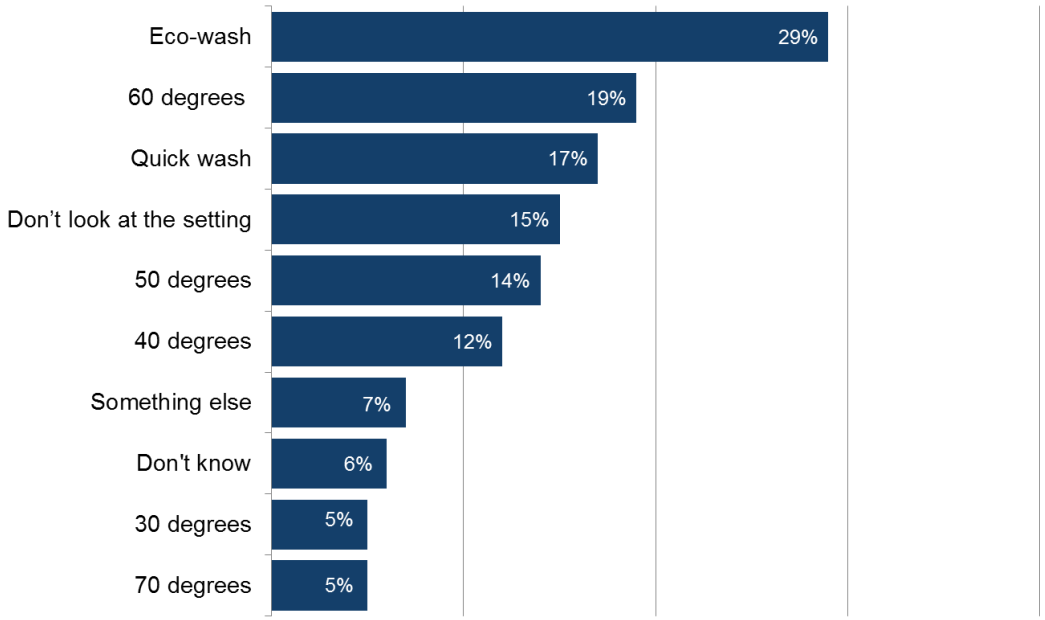


Figure 11 – Dish washer settings used most often

Question: *Which setting(s) do you frequently use?*

Base: Those with full or shared responsibility for washing up in their household and have a dishwasher that they use (1,547)



2.4 Gardening

The survey finds that around four in five households in England (81%) have a back garden and 74% have a front garden or driveway. Key garden installations include a water butt (30% have these), a pond (13%), swimming pool (2%) and Jacuzzi (2%). Key garden features include a lawn (64% have this), plants in borders (58%), plants in pots or hanging baskets (57%), vegetable plots (23%) and plants in greenhouses (16%).

Keen gardeners

Through asking how interested people are in gardening and how much effort they go to in the garden, the research established a 'keen gardener' metric (Table 2). This demonstrates that 22% of gardeners are classified as 'very keen' (i.e. they are 'very' interested in gardening and put 'a great deal' of effort into gardening), while 25% are classified as 'keen gardeners'. The same proportion (25%) express interest but do less in the garden, while 28% have a passing interest only.

Table 2 – Keen gardener metric for England	
Base: Those with full or shared responsibility for gardening in their household and water their garden (2,264)	
Very keen gardeners	22%
Keen gardeners	25%
Keen but time limited	25%
Passing interest only	28%

Frequency of watering

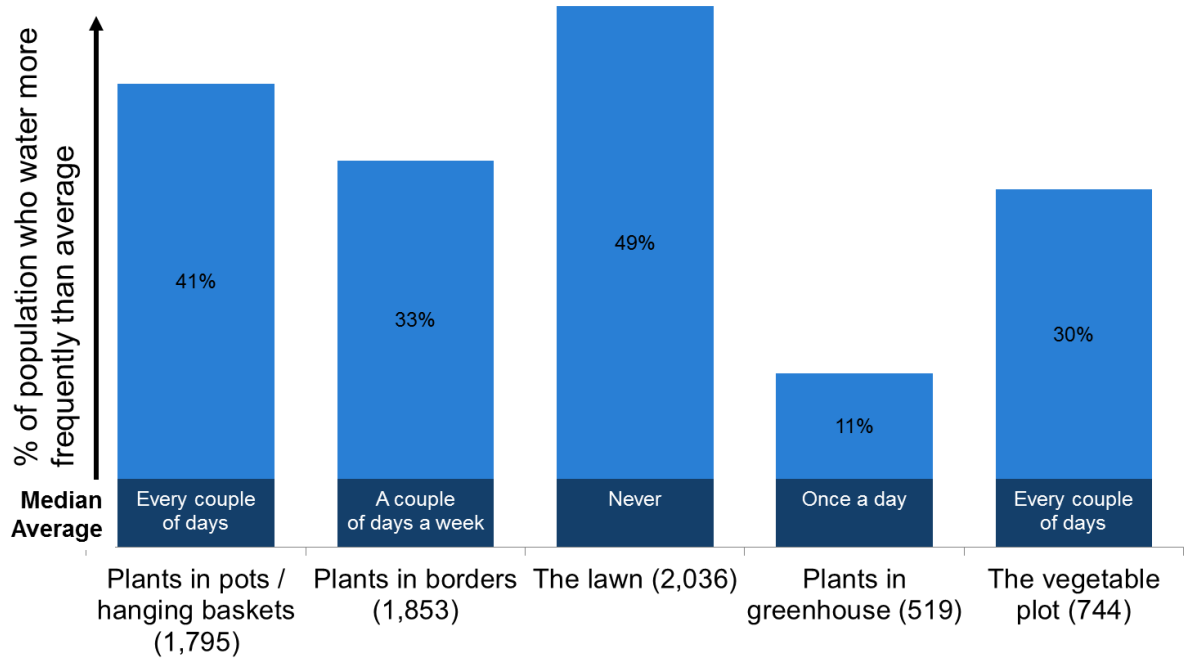
Frequency of watering in a typical summer month varies across different parts of the garden. For example, the median average watering frequency for plants in borders is a couple of days per week, for plants in pots/hanging baskets and the vegetable plot it is every couple of days, and for plants in greenhouses it is daily (Figure 12). The graph also demonstrates the proportion of households who water more frequently than the median average.

Watering regimes for lawns are notably varied: While the median average is 'never' (representing 51% of households with a lawn who say they never water it), a substantial proportion water the lawn – including 8% who do so daily or every couple of days. Watering the lawn varies according to age, with those aged 55+ more likely to never water it (57%) compared to those aged 18-24 (38%) and 25-34 (45%). They also vary according to interest in gardening, with 'very keen' gardeners more likely to water the lawn – 18% water daily or every couple of days, compared to 5% among gardeners with a passing interest.

Figure 12 – Watering regimes for different areas of the garden

Question: *In a typical summer month how often, if at all, do you or someone else in your home water these parts of your garden?*

Base: Those with full or shared responsibility for gardening in their household and have each element in their garden (figures shown below)



Some differences are evident according to geography when comparing gardeners in drier regions (i.e. London, the South East and East of England combined) with gardeners in wetter regions (i.e. North East, North West and Yorkshire & Humberside combined). These differences are statistically significant although still relatively modest. For example:

- 17% of gardeners in drier regions water plants in borders daily in a typical summer month, compared to 12% in wetter regions;
- 26% of gardeners in drier regions water their garden at least once a week in a typical summer month compared to 21% in wetter regions;
- 43% of gardeners in drier regions water hanging baskets daily in a typical summer month, compared to 39% in wetter regions.

One notable exception – where a larger difference is evident – is vegetable plots. Among gardeners who have these, 37% water them daily in a typical summer month in drier regions compared to 24% in wetter regions.

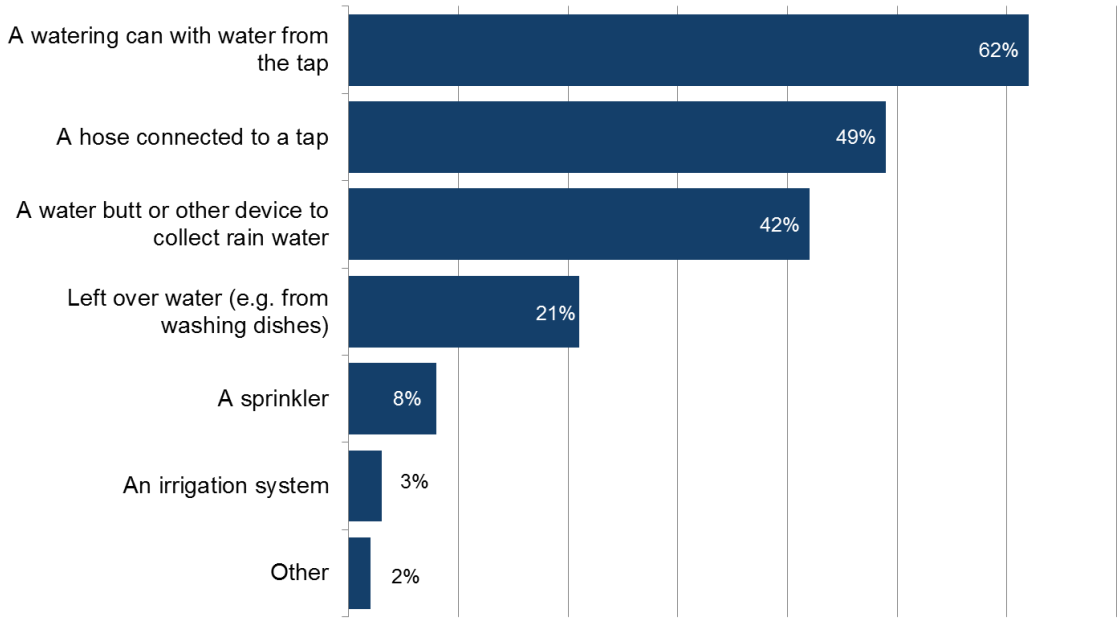
There are also notable variations according to the 'keen gardener' metric. For example, 59% of 'very keen' gardeners water plants in pots/hanging baskets daily in a typical summer month, compared to 28% of those who have a 'passing interest only'. Likewise, 22% of very keen gardeners water plants in borders on a daily basis in a typical summer month, compared to 16% of 'keen gardeners' and 8% with a 'passing interest only'.

Turning to how households water their garden (Figure 13), a watering can using water from the tap is the most frequent method (used by 62% of gardeners), followed by a hose (49%) and a water butt/other device to collect rain water (42%). Just over one in five gardeners (21%) use left over water (e.g. from the dishes), while 8% use a sprinkler. Sprinkler use is correlated with income (rising to 12% among those with a household income of £50K+), whereas using left over water is more prevalent among older groups aged 55+ (27%).

Figure 13 – Means of watering garden

Question: *Which of the following, if any, do you use to water your garden? Tick all that apply.*

Base: Those with full or shared responsibility for gardening in their household and water their garden (2,264)



2.5 Showering

The survey demonstrates that almost nine in ten households in England (89%) have a shower, and 88% have a bath.

Number of showers per week

The average number of showers taken at home in England, excluding those who never take a shower, is 5.5 per week (Figure 14). This reflects a wide spread of frequencies, ranging from 13% who take 1-2 showers per week through to 36% who have a shower at home 6-7 times a week and 9% who shower 8+ times a week.

There is a weak age gradient evident (with those aged 18-24 taking 5.9 showers per week compared to 5.0 among those aged 65+), otherwise shower frequencies are relatively consistent across sub-groups within the population.

Shower time

Around one in six (16%) describe showers not involving hair washing as 'in and out', while over half (59%) describe it as 'quite quick' and 21% say they spend 'a reasonable amount of time' in the shower. In contrast, only 4% describe it as 'quite long' or 'long' (Figure 15).

This is different for showers involving a hair wash, with the majority split between 'quite quick' (44%) and 'a reasonable amount of time' (41%). Only 4% say they are 'in and out', while a larger minority (11%) say they spend 'quite a long time' or 'a long time' in the shower.

Turning to average shower time estimates, the survey demonstrates that the average time for a shower at home without involving washing hair is 7.1 minutes and 10.4 minutes with a hair wash. While it is important to acknowledge that subjective methods for estimating shower time require a heavy caveat (and are not as effective as methods involving objective timing), these results are broadly in line with shower time estimates conducted by Unilever that did use actual measurements[10].

There is a reasonable match between estimated times and the descriptions. For example, and taking showers involving washing hair (the right hand side of the graph), the average shower time among those who say they shower 'quite quickly' is 7.4 minutes, rising to 11.8 minutes among those who say they spend 'a reasonable amount of time' in the shower and 18.4 minutes among those who spend 'quite a long time' in the shower.

There is a significant variation by age in terms of *shower length* – the average shower time (including washing hair) for those aged 18-24 is 15.1 minutes compared to 8.0 minutes among those aged 65+. There is also a difference according to gender (9.1 minutes for men; 11.7 for women). In contrast, there is no variation according to pro-environmental outlook, those who have a water meter or those who say they go to a lot of effort to reduce their water use.

[10] http://www.unilever.co.uk/aboutus/newsandmedia/2011/sustainableshowerstudy.aspx

Figure 14 – Number of showers per week

Question: *In a typical week (i.e. 7 days) how many times do you shower at home?*

Base: All (4,011)

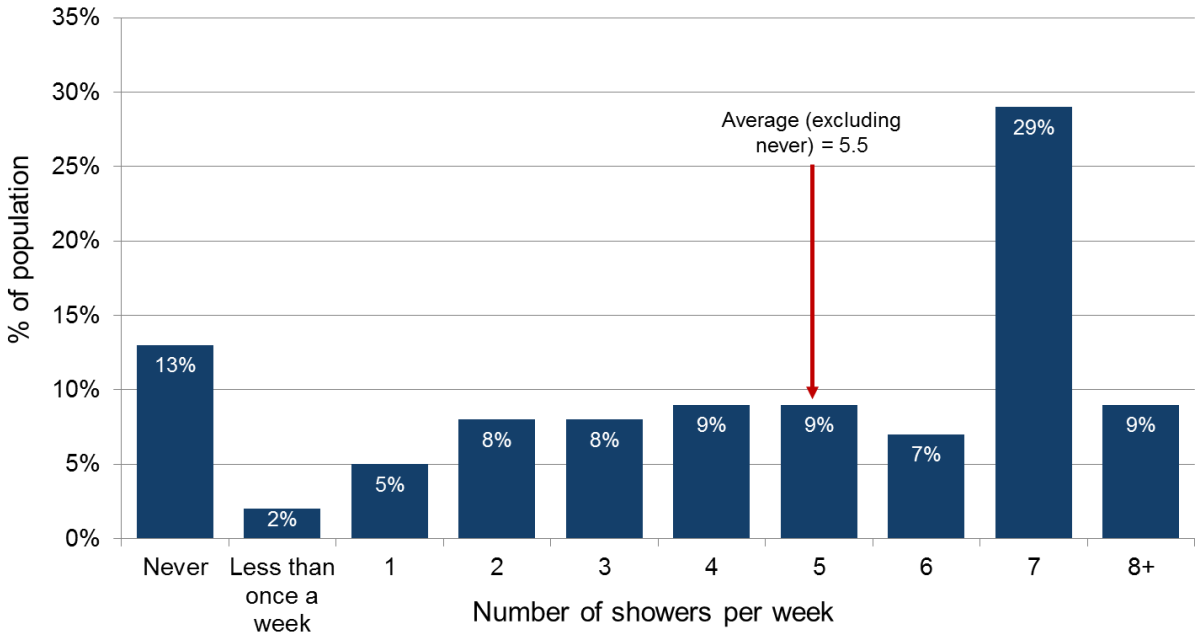
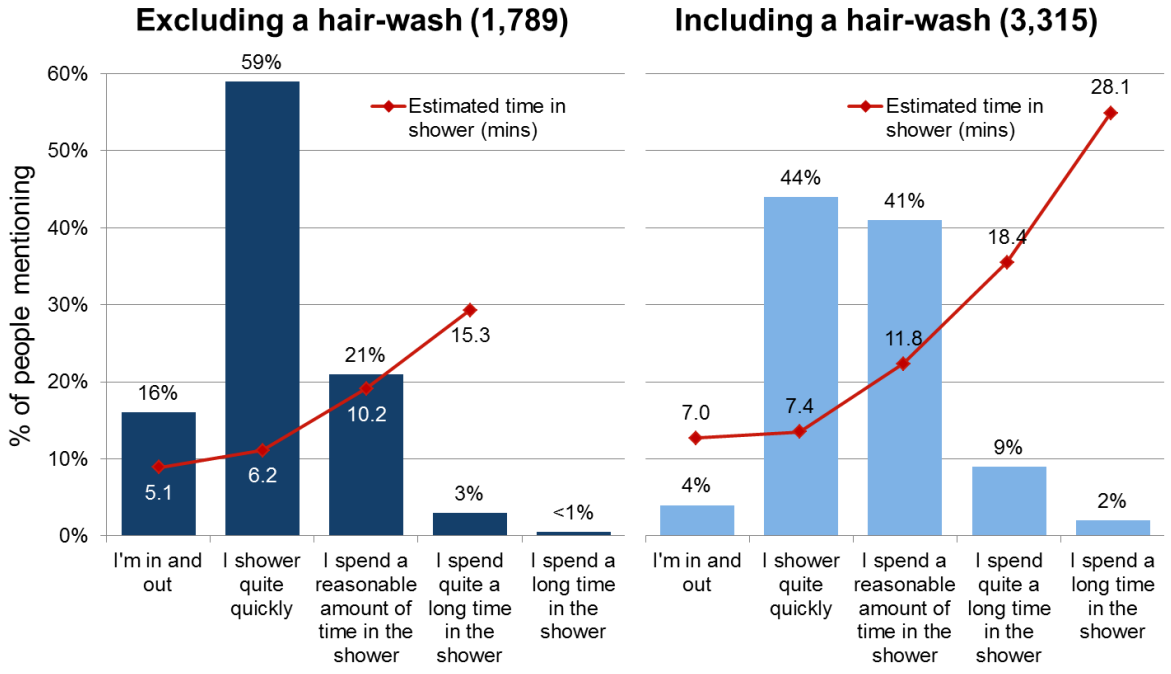


Figure 15 – length of showers

Question: *How would you describe the amount of time you typically spend in the shower?*

Question: *How long would you say you spend, on average, in the shower?*

Base: Those who have showers (base sizes shown below)



3. Key drivers and barriers

This section outlines the key drivers and barriers for water efficiency, drawing largely on the depth interviews (with substantiation, where available, from the survey). It provides both an update of the factors identified in previous research (e.g. Defra, 2009) as well as an exploration of additional influences (particularly around social norms and the influence these have on in-home behaviours and activities). It is structured as follows:

- Key drivers (3.1);
- Key barriers (3.2);
- A model for understanding the determinants of in-home water use (3.3); and
- Case studies (3.4).

The reader should note that there is a degree of overlap between the drivers and barriers, given that the same issue may act as a driver for some and a barrier for others.

3.1 Drivers

The research identifies six key factors that encourage water efficient behaviours, as follows.

i) Valuing resources / a general dislike of waste

The in-depth interviews highlight an important distinction between the way in which participants relate to the words/concepts of 'environment' and 'resource use'. The former appears to be associated relatively narrowly (e.g. animals/nature, the countryside/ conservation and recycling) and does not naturally extend to water use. In contrast, the link with resource use is much stronger, and water is intuitively conceptualised as a precious resource that should not be wasted - tapping into a deeper societal narrative about 'doing the right thing' (a phrase that many participants used in the course of the conversation).

> *I was taught to waste not want not. I don't think my mum was aware of the environmental side - it was just a sense of not wasting anything.*
>
> F, 59, C1, Empty Nester, high water stress area

> *There are people in the world who don't have water. I say it's like pouring liquid gold down the sink.*
>
> F, 53, C1, Family, high water stress area

> *It makes you feel better if you are doing the right thing.*
>
> F, 41, C1, Family, high water stress area

ii) Droughts and hosepipe bans

The media coverage of the drought in early 2012, as well as the accompanying hose pipe bans in parts of the country, did increase the general profile and salience of water use among some participants.

> *I registered the hosepipe ban and I thought we might be next. It made me more aware.*
>
> F, 36, C2, Family, low water stress area

However, and as section 3.2 goes on to outline, the impact appears to be limited to some participants and/or a short term concern (particularly since, by the time of the interviews, there had been a prolonged - and well publicised - spell of wet weather).

Although their impact in the longer term may be limited, short term events do appear to offer a window of opportunity to deliver water efficiency messages. In particular, many participants spoke in terms of the 'weird' or 'changing' weather, which potentially provides an important entry point for messages making the case for water efficiency (particularly those that have a theme around planning for an unpredictable future; ensuring security of supplies, etc.)

> *I think the weather is changing in this country. You just don't know what we're going to get next.*
>
> M, 61, C2, Empty Nester, low water stress area

iii) Water meters

In keeping with the existing evidence base[11], the research suggests that water meters do play a role in encouraging water efficient behaviour. Many participants with a meter commented on its impact, and even some of those without a meter said they would change their behaviour if they had one.

> *I do think about it, because Jess won't turn taps off properly and we're on a meter now. So I can hear it going 'drip, drip, drip' and over the course of a day that must fill more than a pint glass. And I have to pay for that.*
>
> M, 29, C1, Pre-family, low water stress area

> *It's like having a contract with a phone. When you've got free minutes you'll chat away but if you have to pay you'll keep things a bit more brief.*
>
> F, 41, C1, Family, high water stress area

> *I'm really glad I don't have a meter - I don't want to worry about how much water I'm using.*
>
> F, 45, DE, Family, low water stress area

[11] For example, research by Savills Research/YouGov (2009) shows that many more people agree that water saving is important to save money (92%) than think that saving water helps the environment (48%). Furthermore, Walker (2009) found that respondents with meters are also more likely to say they have taken other measures to reduce their water use.

However (and also in keeping with the evidence base, e.g. Defra 2009), the research suggests that other factors serve to restrict the influence of meters by hindering the feedback loop between consumption and behaviour. This includes the inaccessibility of some meters (e.g. they are underground) as well as payment mechanisms like Direct Debit that mask usage by setting a fixed monthly amount (see 3.2).

Furthermore, the issue of metering is partially confounded by the fact that some of the interviewees had specifically requested one because they wanted to save money or water (i.e. their water efficiency led them to get a meter, not the other way around). On this subject the survey findings show that:

(a) those who request a water meter are more likely than any other group to say they go to a 'great deal' or a 'fair amount' of effort to reduce the amount of water they use at home (77%, compared to 62% of those who either had a meter installed already or had one installed compulsorily), and they are more skewed to older age groups – 41% are aged 65+ compared to 15% who had a meter installed compulsorily.

(b) However, having a meter – whether requested or not – still has a pronounced impact on the effort that households say they go to reduce their water use. Only 43% of those without a meter go to a great deal or fair amount of effort, compared to 62% who have had a meter installed compulsorily and the same proportion who have moved into a home with a meter already installed.

The subject of 'smart' water meters was raised briefly with participants as a prompted issue, with many expressing some degree of interest and a few noting that they had already enquired about this on the back of having real time displays for electricity.

> *I phoned them [the water company] up about it [smart water meters] but it seems they don't have any plans at the moment - which is a shame because we'd definitely have one like the electricity one we had.*
>
> M, 54, C1, Empty Nester, low water stress area

iv) Habit

For some behaviours, such as turning off the tap whilst brushing teeth (something spontaneously mentioned by almost all participants), the key driver is not a motivation per se (in the sense of a desire for something) but rather a habit.

> *Some of these things I just do automatically, it's just habit.*
>
> F, 51, C2, Empty Nester, high water stress area

> *We've been doing these things for so long that it just feels like second nature.*
>
> M, 36, C1, Pre-family, high water stress area

> *It's like recycling, everybody thought it was bloody ridiculous at first but they all got used to it and now it's a habit.*
>
> M, 29, DE, Pre-family, low water stress area

v) Social norms and the influence of others

The evidence base[12,13] contends that individuals are more likely to adopt environmental behaviours if 'people like them' have adopted them. The in-depth interviews demonstrate that, at the current time and because of the inherent privacy of the in-home setting, that the norming process is heavily influenced by immediate family members. Indeed, participants made frequent references about how parents or grandparents had brought them up this way.

> *I brush my teeth using a glass of water – I was taught that by my grandmother.*
>
> F, 30, C1, Pre-family, high water stress

> *It's been tapped into me from a young age really because my mum was on a meter so she'd always tell me to turn the tap off.*
>
> F, 28, C1, Pre-family, high water stress area

> *My mum says that putting a full load in means that the clothes don't come out as clean, so I tend to go for quite full washes instead.*
>
> F, 30, C2, Pre-kids, low water stress

While the influence of others is currently less powerful, some interviewees did still reference the behaviours of others. This was particularly true in relation to behaviours that are visible (e.g. gardening, or drying clothes in the garden) or where the norm can be transferred / cascaded in other ways.

> *Jason Orange pops into my head every time I brush my teeth! I always turn the tap off. I was a Take That fan as a girl and I remember him saying he did this in an interview once.*
>
> F, 30, C1, Pre-kids, high water stress

> *I've been told you should only fill your machine 2/3 full so you get a gap at the top. [Who told you that?] John Lewis. Whatever they say, I do.*
>
> F, 74, C1, Empty Nester, low water stress area

> *Yeah, my friend has got a brand new washing machine with lots of buttons and we were chatting about that at the BBQ. She was saying that she has used the cold wash and it's brilliant.*
>
> F, 28, C1, Pre-family, low water stress area

The survey provides further evidence of the potential for a norms-based approach. Those responsible for gardening were asked if they water their garden above, below or about average, and then asked – in an open ended format - to explain their answer. The results – set out in Table 3 (and based upon post-hoc coding of the open ended responses) - demonstrate that, irrespective of whether they feel above, below or about average, the underpinning explanation focused on comparisons with their neighbours.

[12] Jackson, T. *Motivating Sustainable Consumption - a review of evidence* (2005)

[13] *Understanding Moments of Change: Interactions between Customers and Installers* (2011), Defra 2011 (unpublished)

Table 3 – Reasons (unprompted) why gardeners think they are above, below or in line with the average					
Q. Why do you say [above average/average/below average]? Base: Those with full or shared responsibility for gardening in their household who water the garden (base sizes outlined below in brackets) – TOP 3 REASONS					
Those who think that they are above average (253)		Those who think that they are about average (958)		Those who think that they are below average (976)	
Compared to neighbours	20%	Compared to neighbours	33%	Compared to neighbours	22%
Have more/lots of plants	13%	Only water when needed	19%	Don't water often	22%
Have a vegetable plot/greenhouse	13%	That's just what I think/assume average	19%	Don't have many plants	9%

vi) Use of appliances, fittings and settings

Some interviewees had already made key adaptations in respect of their appliances and settings that have positive implications for water use. This includes using the eco wash and quick wash settings on their washing machines and dishwashers, having flow regulators on showers and taps, and washing at 30 degrees. The latter in particular demonstrates the simplicity with which some behaviours change in response to a simple cue (such as a change in washing instructions on the garment label and/or the washing liquid/powder).

> *I will always try and put it on the eco cycle. We have like, 40 degrees eco, 30 degrees eco... I don't know what it does or why I do it - I just feel better!*
>
> F, 29, C1, Pre-family, high water stress area

> *It says on the [clothes] label I can wash it at 30 degrees. So I do.*
>
> F, 28, C1, Pre-family, low water stress area

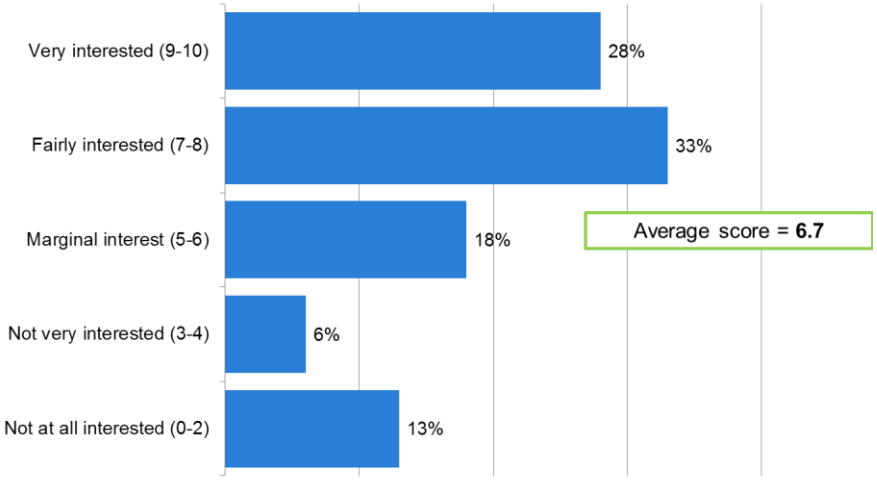
> *The shower here is awesome. The last place it was a shower off the taps - there was no pressure and you felt like a scientist trying to get the right temperature. On this one there is an eco-setting with a half turn. It works really well. I've only used the full setting a few times when I'm really dirty.*
>
> M, 28, C1, Pre-family, low water stress area

Furthermore, the survey demonstrates latent demand for product innovations around laundry. It asked respondents how interested they would be (on a scale of 0-10 where 0 = not at all interested and 10 = very interested) in a (hypothetical) new sensor light on washing machines to let them know when they have reached a full load. The results (Figure 16) demonstrate that around three in five consumers with responsibility for laundry (61%) would be 'very' of 'fairly' interested in such a functionality (i.e. a score of 7+ out of 10).

Figure 16 – Effort to reduce water use

Question: *On a scale of 0-10 (where 0 = not at all interested and 10 = extremely interested] how interested would you be in a washing machine with a sensor light that indicates the weight of the washing load – so you know when you are under filling or over filling the machine?*

Base: Those with full or shared responsibility for laundry in their household (3,096)



3.2 Barriers

The research, drawing predominantly on the depth interviews, identifies seven key barriers to water efficient behaviours.

i) Low salience

Previous research has consistently found that water efficiency suffers from a lack of salience which, in light of the prominence of this factor in behaviour change models[14], presents a key challenge. The qualitative research supports this finding and, despite some instances of interviewees acknowledging water use as an issue and citing the recent drought (as discussed in Section 3.1), the issue appears to lag some way behind energy and recycling in the public psyche. This is a product of several inter-related factors, as follows:

Weak price signals and feedback – many of the interviewees commented that their water bills were cheaper relative to electricity and gas. Furthermore, Direct Debit payment structures potentially blur the link between consumption and cost, with many interviewees assuming that their consumption is relatively constant (given that their bills, via Direct Debit, are constant). Price signal feedback is effectively removed since bills neither increases during periods of higher consumption nor decreases in response to periods of lower consumption and/or efforts to save water. Some participants also noted their bills were hard to understand (other than the headline amount they have to pay).

[14] E.g. the MINDSPACE behaviour change model developed by the Institute for Government and being deployed across Government by the Cabinet Office's Behavioural Insights team - see http://www.instituteforgovernment.org.uk/our-work/better-policy-making/mindspace-behavioural-economics

I feel ashamed to tell you I don't know how much I pay. I have a direct debit set up and just pay it.

F, 57, C1, Empty Nester, low water stress area

The bill is always the same, it's exactly the same every month. It never changes. So I don't really check it that closely – not like the telephone bill where I've got to keep an eye on her [his fiancée].

M, 29, C1, Pre-family, low water stress area

I find it [the bill] quite confusing. I just scan it for the headline amount [price] and then file it away. I can always go back to it later if I need to get the phone number to call them up or anything.

F, 46, AB, Family, high water stress area

Visual cues – when discussing the importance of water efficiency (once it had been formally introduced), many interviewees referenced visual cues (e.g. green fields and rainy days) that provided a powerful and intuitive counterweight to reasoned arguments.

Furthermore, the interviews suggest that overcast/'grey' days are not easily distinguished from days of rainfall – explaining in part why messages about the exceptionally dry winter did intuitively resonate with interviewees (since, in their view, it was still a 'bad' winter). By contrast, it is conceivable that prolonged periods of heat and/or sunshine would provide intuitive cues that support the need for water efficiency (although, given the timing of the interviews, this could not be tested). One or two of the interviewees did notice, for example, that the local reservoir was looking 'lower than normal'.

It's hard to take the drought seriously when it's pelting down with rain outside. However, I have heard we are playing catch up so I know it's not necessarily that simple.

F, 32, C2, Pre-family, high water stress area

Describing it as 'exceptionally dry' is hard to swallow. [pauses] I think it's hard to distinguish dry weather from rubbish winter.

F, 30, C2, Pre-family, high water stress area

Lack of jeopardy – many interviewees commented that they do not feel threatened by water shortages. This view was held equally in low and high water stress areas, even though some interviewees in high water stress area acknowledged the potential for occasional and short term hosepipe bans. However, and even in this circumstance, there was a perception that the worse that will happen is a short disruption to their ability to water the garden.

It's always there and I never expect to be without it. I don't use a hose pipe so a ban isn't going to affect me.

M, 26, C2, Pre-family, high water stress area

It [the drought] would have to get really bad before it affected me.

F, 30, C1, Pre-family, high water stress area

ii) Perception that there is no scope for change

A simple but powerful barrier for many interviewees was a perception that there is limited scope for change. This was driven in part by a perception that being more efficient would mean 'not doing something' as opposed to 'doing something differently'. Some interviewees took the view that they use 'as much as they need' and no more. There are some overlaps here with recent work for DECC[15] which demonstrated that, while households are very aware of the scope for efficiency in respect of electricity (i.e. lighting, power) they are less aware of efficiency in relation to gas and space heating (with interviewees adopting a similar view that they use as much as they need to feel warm).

> *I can imagine the water meter ticking away which makes me a bit nervous, but it's just a necessity - we have to have showers, we have to wash clothes.*
>
> F, 37, C1, Family, low water stress area

> *I don't feel I use in excess so telling me to save water doesn't work. I don't feel there's anything I could cut out to save any.*
>
> F, 30, C1, Family, high water stress area

> *I use water that I need, it's not like I'm tipping it away for fun. So when I see this [message] I don't know what I'd stop doing. It feels disconnected as they're telling me to do something I don't feel I can do anything about.*
>
> F, 54 C1, Empty Nester, low water stress area

iii) Competing motivations

Even though there may be motivations (such as a dislike of waste) that increase the propensity to undertake water efficient behaviours, so too are there competing motivations that operate in an opposing direction. Indeed, the depth interviews suggest that the desire and aspiration for some things may be more powerful, and override, the desire to use resources efficiently. Potential conflicts include a desire for home improvements and 'signature' bathrooms (e.g. wet rooms, Jacuzzis), and a strong (culturally reinforced) desire to prioritise hygiene, cleanliness, relaxation and freshness.

> *I don't like that [water saving tip about using a bowl to wash fruit and veg], I want my fruit and veg to be really clean. I don't want them sat in their own dirt. That's why I don't like baths.*
>
> F, 36, B, Family, high water stress area

> *We got a pack with a hippo and something for the shower. I installed the hippo but I haven't installed the device for shower yet because I am a bit worried that it will affect the shower - I do like my shower powerful.*
>
> M, 30, C1, Pre-family, low water stress area

> *Showering is one of the comforts of my life, I'm not prepared to give it up. When I shower I feel rejuvenated.*
>
> F, 59, AB, Empty Nester, high water stress area

[15] *Domestic energy use study: to understand why comparable households use different amounts of energy* (Brook Lyndhurst and Icaro, 2012)

iv) Children

The presence of children was a repeated theme of discussion among interviewees with families (and - as Section 2 outlined - this does appear to be correlated with practices that make higher water use more likely):

> *The girls always leave their clothes on the floor and I try and filter out what's only been worn once but I don't really have time so a lot of it just gets washed. So maybe we're a bit above average [for amount of laundry].*
>
> F, 41, AB, Family, high water stress area

> *We're trying to change his habits. If he comes home has a shower after football then puts something clean on and doesn't get dirty again he'll put it in the basket that night. There's no need for that.*
>
> M, 49, C2, Family, low water stress area

The subject of children has also been the subject of other studies[16] that highlight the role of parents in transferring cultural understandings and practices around showering to their children, and the strength of social norms among teenagers relating to cleanliness practices.

v) Use of appliances, fittings and settings

While a number of participants have made some adaptations to new appliances, fittings and settings that potentially had positive implications for water use (as discussed in Section 3.1), others are not taking full advantage of the functionality that these give them. For example:

- several noted how they are accustomed to using the same setting on their washing machine/dishwashers (even though they are not resistant per se to using other settings);
- many did not know if their shower is a power shower or not;
- some were not aware that they in fact already had a dual flush toilet (which was noted by the researcher as part of the initial household tour of the home); and
- there appears to be a widespread view that dishwashers use a significant amount of water, leading some to avoid using them.

> *What is that, a duo flush? [interviewer: You've already got it] Oh, I didn't know that! [interviewer: What do you do at the moment?] Press the whole lot I think. Oh, I never knew, [turns to her son] I'll have to show you that now.*
>
> F, 30, C1, Family, high water stress area

Specifically in relation to retrofitting water efficient measures (e.g. tap and shower inserts), while some participants are comfortable installing them on their own others express concerns about ruining their taps or showers, or causing a household leak.

> *No [I wouldn't fit it] I'd be scared to get it wrong and have water all over the floor or something!*
>
> F, 30, C2, Family, high water stress area

[16] Gram-Hanssen, K. (2007) *Teenage consumption of cleanliness: how to make it sustainable?* See http://sspp.proquest.com/archives/vol3iss2/0609-030.gram-hanssen.html

> *It's either too much effort or we just don't know how to install it. If he came back [a water company representative who visited previously] and helped us a bit more then that would be ideal.*
>
> F, 36, B, Family, high water stress area

Households' attitudes to, and relationship with, their appliances and fittings is a key issue and one that has been the subject of some recent research[17] which suggests that consumers can be categorised into one of three groups in terms of their preferences for the in-home management of energy and water: those who want their systems to be as simple as possible (i.e. no gadgets or 'playing around'); those who want the opposite (i.e. smart/intelligent home systems that alert them to high consumption / opportunities to save); and those who prefer systems with two main setting choices (i.e. high flow; low flow).

vi) Responsibility

The research re-affirms a common thread in the literature about the importance of water company leakage rates. In cases where participants had seen a leak near them it had clearly had a strong emotional impact (making them 'angry' and 'upset'); while more broadly it provides an easy justification to reject the need for them to take action themselves.

> *It's ridiculous to say it's everyone's problem when they don't fix leaks and maintain system properly.*
>
> M, 49, AB, Family, high water stress area

> *There was a leak down the road and the water company didn't want to know. They just didn't care. It just really upset me seeing the water running down the road for two or three days. It was such a waste. How can they then turn round and ask me to save water?!*
>
> F, 30, C1, Family, high water stress area

The issue of leakage sits within the broader issue of responsibility. Interviewees were receptive to messages around shared responsibility but notably more dismissive of messages that focus solely on the need for individual action. These messages triggered an attempt by participants to shift responsibility on to others, with repeated references that "*they* should do more" (with "they" referring, variously, to water companies, Government and local authorities). This included suggestions to build more reservoirs, desalinate sea water and/or create a national grid for water to move it from the north to the south of the country.

> *It is awful how we have so much rain in this country and we can't collect it properly. The infrastructure is not up to scratch. The water companies are inefficient. I don't understand why they can't create a national grid for water.*
>
> M, 73, AB, Empty Nester, high water stress area

[17] Adeyeye, K (2011). *Beyond the minimum requirement: Policy-Led Strategies for Increasing Water Efficiency in Buildings. Creating Value with Water-Users*

Furthermore, these narratives around responsibility also strike a chord with several 'deep frames'[18] about power and fairness in society. For example, several of the older participants were dismissive of their water company on the grounds of 'young executives' (a term that was used in a subtly derogative sense) trying to tell them what to do; whereas other narratives involved foreign/multinational companies owning the country's resources.

> *These young executives think that they know better.*
>
> M, 62, C2, Empty nester, high water stress area

> *Foreign companies own all our water - it is sinful how the companies are all privately owned. Multinationals are making a fool of this country*
>
> F, 60, C1, Empty nester, high water stress area

vii) Weak social norms

As per the discussion in Section 3.1, social norms can be an effective motivating force by giving individuals a cue or reference point for their own behaviour. However, the research demonstrates that households can also take negative cues from others.

> *I never used to rinse the plates under the tap, but my friends were horrified the bubbles [of washing up liquid] were still there so now I've changed.*
>
> F, 32, C1, Pre-family, high water stress area

> *When you see other people wasting [like people in street always washing car] you feel less bad for using a little bit of water here and there.*
>
> F, 53, A, Family, high water stress area

> *I actually think we do less than others. One of my friends on Facebook the other day was saying she does 3 washes a day! Which I'm amazed by.*
>
> M, 49, C2, Family, low water stress area

Because many water using behaviours in the home are private, many participants do not have a means for comparison and so, in the absence of a reference point, they tend to assume that they are 'average'. For example, some participants said they washed their towel after every use whereas others said they used them for two weeks or more. In both these instances the practice was considered 'normal' and/or 'average' by the participants.

> *I don't think I'd like it if I was above average. But I only shower, not bath, so I'm probably there or there abouts.*
>
> F, 24, C1, Pre-family, high water stress area

> *Who doesn't shower or bath this often? I can't imagine it varies that much.*
>
> F, 28, C1, Pre-family, high water stress area

[18] See e.g. *Common Cause: The Case for Working with our Cultural Values* (WWF, 2010). To paraphrase the literature , humans rely upon deep narratives in two crucial ways: firstly, as a basis for a sense of self; and, secondly, as a means by which an individual belongs to a wider collective (a nation state, a religion, etc.). Narratives need to be consistent and so new information that does not 'fit' with the prevailing narrative is generally rejected, whereas that which reinforces, or taps into, a deep narrative is generally accepted.

I think the towel thing [washing after every use] is normal. It's not something you really talk about to others but everyone wants a clean towel, right?

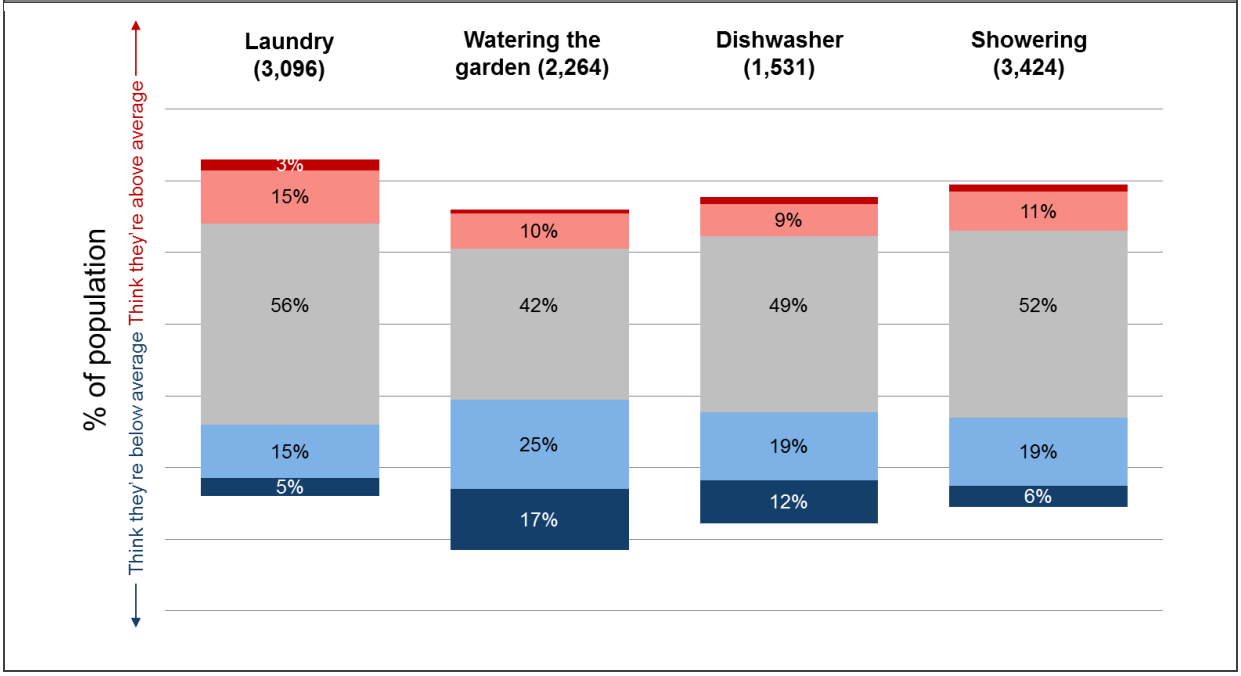
M,28, C1, Pre-family, low water stress area

This is supported by the survey which highlights that the majority of households think they are average (Figure 17), with the only minor exception being gardening (which is, in any case, the most visible of the activities). The widespread perception of being 'about average' holds *even when* actual behaviours deviate from the average. For example, the majority of those who wash their jeans and towels after every use (which is not the norm) still classify their laundry washing frequency as 'about average'.

Figure 17 – Perceptions of own behaviours vs. the norm

Question: *Compared to other households like yours (e.g. the same size/number of people), do you think that the amount of laundry/dishwashing/watering the garden/showering your household does is...[well above average; slightly above average; average; slightly below average; well below average]?*

Base: Those with full or shared responsibility for laundry in their household (3,096)

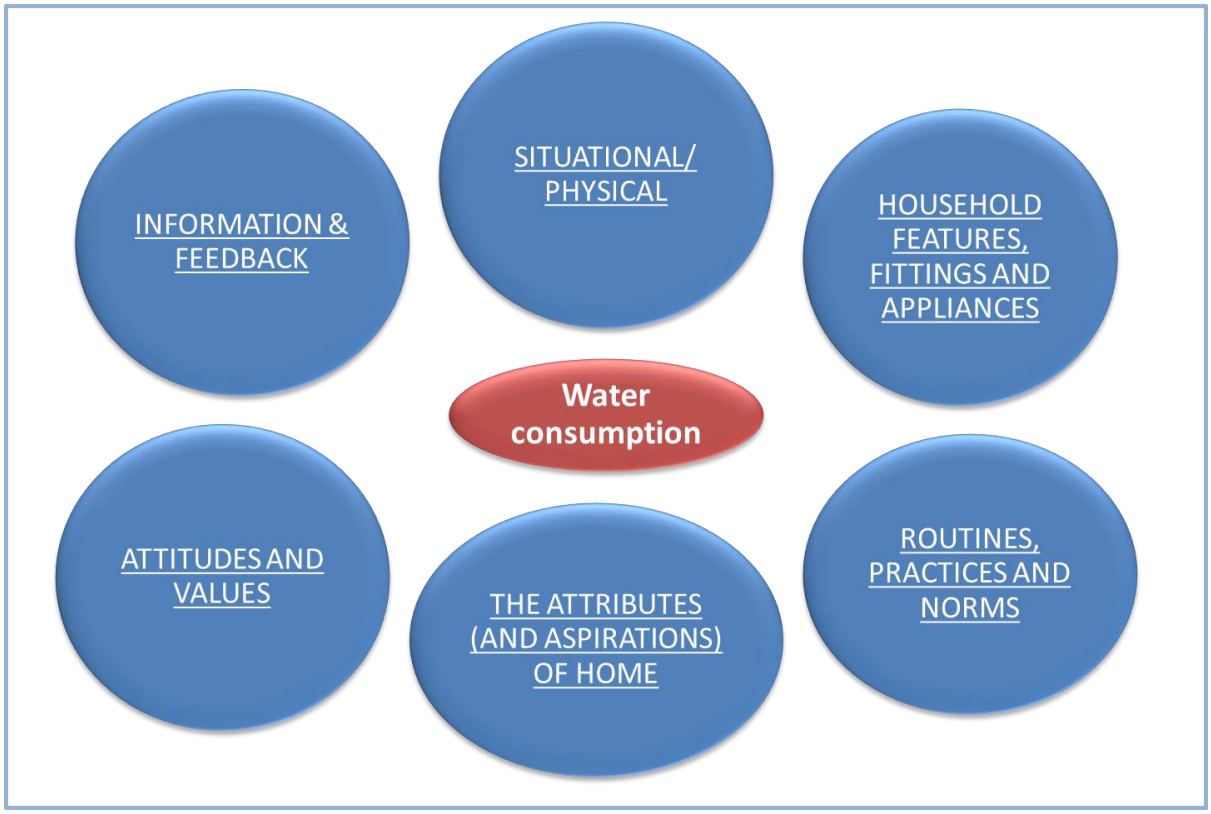


3.3 A model for the determinants of water use

The insights from the research allow for the development of a simple model that outlines the key determinants of in-home water use. While not intended to provide an exhaustive or definitive model, it nonetheless demonstrates that water use in the home can be explained by variations along six axes:

- *Situational/physical factors* – including, for example, the size and condition of the house, the number of bathrooms and the presence and size of a garden;
- *The attributes and aspirations of 'home'* – in particular the services it provides in terms of comfort, relaxation and cleanliness, and aspirations for changes in the future;

- *Routines and activities* – including the division of responsibilities for different tasks and routines and the dynamics of home;
- *Household features, fittings and appliances* – the presence of new water efficient measures and the way in which households interact with / adapt to them (or not);
- *Information and feedback* – including formal information (e.g. bills, meters) as well as a broader suite of visual cues (e.g. the weather, local water bodies, etc.) and social/cultural cues (e.g. the behaviour of others and the prevailing 'normality' and dominance of certain behaviours and societal narratives);
- *Attitudes and values* – in particular the extent to which households consider their water use and the need to conserve water; as well as perceptions of responsibility.



3.4 Case studies

Having summarised the key drivers and motivations in 3.1 and 3.2, this section – through four case studies taken from the 42 depth interviews – gives a flavour of how some of the factors play out at the level of individual households. The case studies are not intended to be reflective of particular 'groups' of households; they are simply a means of bringing some of the issues to life and – in doing so – highlight the difficulties associated with the notion of an 'average' household in respect of patterns of water use.

Case study – F, C1, family, high water stress area

Christine lives with her partner and 12 year old son. They are a sociable family often throwing BBQ's or drinks. All the extended family lives close by so they often pop by.

Christine loves the gym and goes 3-4 times/ week, and her son plays rugby 3 times/ week and enjoys fishing with his Dad. They do not cook much - they eat little fruit and veg and enjoy takeaways at the weekend.

Their main uses of water are laundry (every couple of days) and showering. They love showers and can often spend up to 20 minutes showering. Christine often has two showers a day if she goes to the gym (but one of these will be at the gym and the other at home). They have a decent-sized front and back garden but, apart from keeping the lawn presentable, it is generally left to 'fend for itself'.

She thinks that water is precious but doesn't worry about it or think much about how much she uses. Her brother uses so much that, in comparison, she feels that she doesn't use much (although it is noteworthy that her brother's "excessive" use upsets her). She is the environmental representative at work but, until now, has only focused on recycling and energy. She says that she will now consider water use as well.

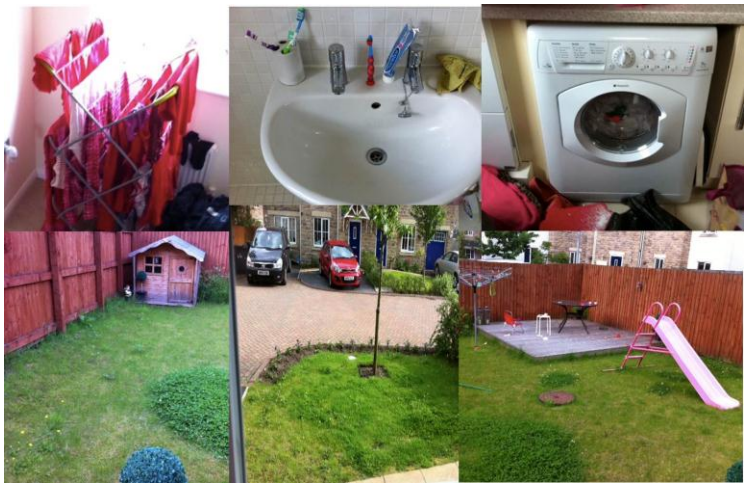
Case study – F, C1, pre-family, high water stress area

Cath lives by herself in a very small and well decorated flat. She is very sociable and often out (BBQ's, drinking, cycling, swimming, etc).

She is very house proud ("tidy house, tidy mind") and likes things in control. Home is a place of calm and comfort and sometimes a social space for pre-night out drinks. She would like to meet someone special to share her life with.

She does not use much water. She has a water meter which she 'loves' and says that she has a £5-10 bill every month (down from £20 previously). Baths are a rare indulgence and taps are always turned off when brushing teeth. Her water efficient outlook does not stem from environmental concerns (she feels guilty acknowledging this but feels that there are more important things to worry about). Instead, the behaviours are governed by a desire for cost-savings as well as independence/control because she lives on her own and "no-one else is going to look out for her". Habit also plays a role in her water behaviours – it was something that her mother frequently spoke about and enforced in the home.

Case study – F, D, family, low water stress area



Lynsey lives in fairly large three-storey house with her husband and their two daughters. They both work full-time. They are a close and active family and enjoy lots of socialising.

They run a chaotic but clean household - the washing machine (once or twice a day), dishwasher (once a day) and shower (at least four times a day) are always going. They have a large low-maintenance garden out the back that Gavin would like to spend more time on. The small front garden he spends a bit of time on.

They think they use an average amount of water for a family of four. Lynsey doesn't worry about water but she is 'conscious' - she does little things to save it, thinks it's a privilege to have it, and tries to instil this in the girls. Gavin doesn't think about it at all. They are open to further change esp. if fun or free but it is not a priority. Further changes must not impact their time, hygiene, décor/aesthetics (e.g. they really like the idea of a colour changing shower mat!) but they are willing to pay a little more for them.

Case study – F, D, family, low water stress area

Sandra lives with her son Bryn in a small council house with a small and well-tended garden. Her partner stays over once a week. She is a curious person who likes to understand the world she lives in. Sandra does a laundry wash almost every day, they shower every day and she also cooks from scratch (preparing lots of fresh fruit and veg which she washes).

She enjoys her garden and gets lots of tips about it from her mother / in-laws. Sandra says she is passionate about the environment, although this relates more specifically to animals, nature and the countryside primarily. She is conscious about her water usage but not unduly worried. She's very aware that water is a precious resource and is strongly influenced by her brother and her partner - a farmer - whose livelihood means that he knows a lot about it. Regular laundry and her many pot plants in the garden are the biggest uses of water in her household. She knows about most water-saving tips and carries out a lot of them. However, hygiene is a barrier to her undertaking more (e.g. particularly around doing less laundry or showering less).

PART B:

Messages

4. Messages I – the wider narrative

This section turns to the message testing elements of the research. Two distinct types of messages were tested: those aimed at 'making the case' for water efficiency and those that focused on specific household activities like laundry, washing up, gardening and showering. The former set of messages, discussed in this Section, involve a direct and explicit focus on water efficiency. The latter set of messages, discussed in Section 5, do not.

This section is structured as follows:

- The case for water efficiency (4.1);
- Reciprocity and responsibility (4.2); and
- Water efficiency campaign 'tag lines' (4.3).

4.1 The case for water efficiency

A 'malleability' question was developed involving an initial question that establishes the perceived importance of water efficiency, followed by a series of statements designed to increase perceived importance. For the initial question, respondents were asked to place themselves on a scale of 0-100 with a slider bar in terms of how necessary they think it is for households in England to go further to reduce the amount of water they use (where 0 = not at all necessary and 100 = extremely necessary)[19]. The survey sample was the split into two halves (i.e. 2 x 2,000), with half shown five statements and the other half shown five alternative statements (Table 4).

Table 4 – Water efficiency messaging: the wider narrative

Split sample 1	Split sample 2
In England we have less water available per person than most other European countries because of the density of the population.	The UK is not an exceptionally wet country. London, for example, has around the same average rainfall as Barcelona.
Droughts in the UK are likely to become more commonplace while at the same time more intense rainfall will increase the chance of flooding. If we do not act the security of our water supplies could be compromised.	Increasing consumption, together with a growing number of households, has put pressure on water supply in England and it is likely that this problem will worsen with climate change. If we do not act the security of our water supplies could be compromised.
The average person in England and Wales uses 150 litres of water a day, around 50% more than 25 years ago. By 2020 the demand for water could increase by 800 million extra litres of water a day.	The average person in England and Wales uses 150 litres of water a day, around 50% more than 25 years ago. By 2020 the demand for water could increase by over 300 full Olympic swimming pools

[19] This form of questioning asked respondents about their perceptions about households in England *in general* (as opposed to their own household). This approach was taken because the messages under investigation are about building a wider society-level narrative about water efficiency. In contrast, and in Section 5 where the messages being tested relate to specific individual behaviours, the opposite approach was taken (i.e. focusing on the perceived impact on the respondent's own behaviour rather than households in general).

	per day.
In many developing countries water consumption is as low as 20 litres per day per person. In the UK it is 150 litres per day per person.	Even if a family of four, with an average sized house, could collect every single drop of rain that fell on them in a year- they could still only collect ½ the amount of water they would typically use in a year.
Water use is also linked to energy - domestic water heating is responsible for 5% of UK CO2 emissions, and makes up around 25% of your household energy bill. A typical family of four could save about £100 a year on their bills simply by reducing each shower length by one minute.	Water use is also linked to energy. Treating waste water and supplying our homes with clean, drinkable, water creates five million tonnes of greenhouse gas emissions.

After seeing each statement, respondents were asked to move the slider bar accordingly - if the message had changed their opinion of how necessary they think it is for households to go further they could adjust their initial score upwards (i.e. increasing perceived importance) or downwards (i.e. decreasing perceived importance). They could, alternatively, leave their score if the statement had not changed their initial view. The statements were randomised to ensure that they appeared in different sequences.

Looking first at respondents' starting score (i.e. prior to seeing any of the statements), the amalgamated score for both halves of the samples is 70.6 out of 100 (Figure 18). This reflects close to one in three (34%) who give a score between 81-100 and 18% who give a score between 71-80. With the exception of a (non-trivial) minority (22%) who give a score of less than 50, this suggests that many households already accept – without any messaging - the need for further water savings. There are a number of key variations by sub group:

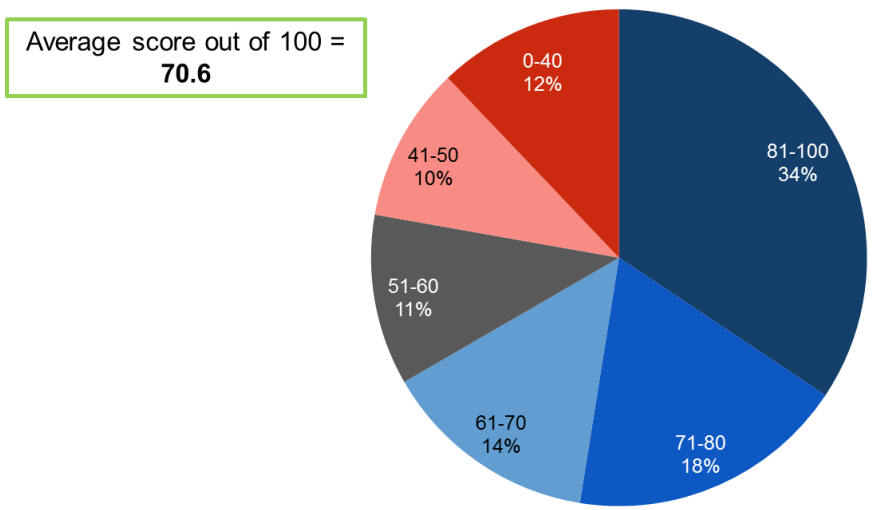
- *Environmental outlook* – those who say they are 'very' environmentally friendly are more likely to think it is necessary for households to go further to reduce their water use (84/100 vs. 74/100 among those who are 'fairly' environmentally friendly, 63/100 among those environmentally friendly in 'one or two things' and 48/100 among those who say they are not environmentally friendly).
- *Efforts to reduce water* – those who say they go to a 'great deal' of effort to reduce their water usage are more likely to think it is necessary for households to go further (84/100, compared to 53/100 among those who do not go to much effort).
- *Water meter* – those with a water meter are more likely to think it is necessary for households to go further than those without a meter (76/100 vs. 67/100).
- *Keen gardeners* – the starting score among 'very keen' gardeners is 80/100, compared to 68/100 among those with only a passing interest in gardening.

In contrast, there is no difference according to levels of water stress in their area - with both high and low stress areas recording similar starting scores (71 and 70, respectively).

Figure 18 – Perceived need for households in England to go further to reduce the amount of water used

Question: *On a scale of 0-100 (where 0 = not at all necessary and 100 = extremely necessary), how necessary do you think it is for households in England to go further to reduce the amount of water they use?*

Base: All (4,011)



Turning to the impact of the statements (Table 5), the survey flags three key findings:

- The impact of the five statements in combination is negative, with the finishing score 1.2 percentage points lower than the starting score (in one half of the sample the fall was 0.3 percentage points; in the other 2.6 percentage points). In other words, after seeing the five statements (all aimed at *increasing* the perceived necessity for households to go further to reduce their water use) respondents were actually *less likely* to think this.

- Despite the overall negative impact, the reaction to some of the statements is positive. The best performing statement – which focuses on the triad of future pressures in terms of consumption, population growth and climate change – has a modest impact on scores (+3.2 percentage points). Messages linking water consumption with energy use and greenhouse gas emissions also have a small positive impact (supporting recent work by the Energy Savings Trust and Waterwise that water and energy efficiency advice can be successfully integrated for customer engagement[20]).

- By contrast, some statements actually have the opposite effect and impact negatively on scores. In particular, the statement comparing the level of rainfall in London to Barcelona causes a significant decrease of -7.1 percentage points, performing worse than any other statement. Drawing on the reactions from the depth interviews, it would appear that this statement is intuitively rejected because of the widespread belief, discussed earlier, that there are high levels of rainfall in the UK. Attempts to contradict this basic belief are not only ineffective; they are highly counter-productive.

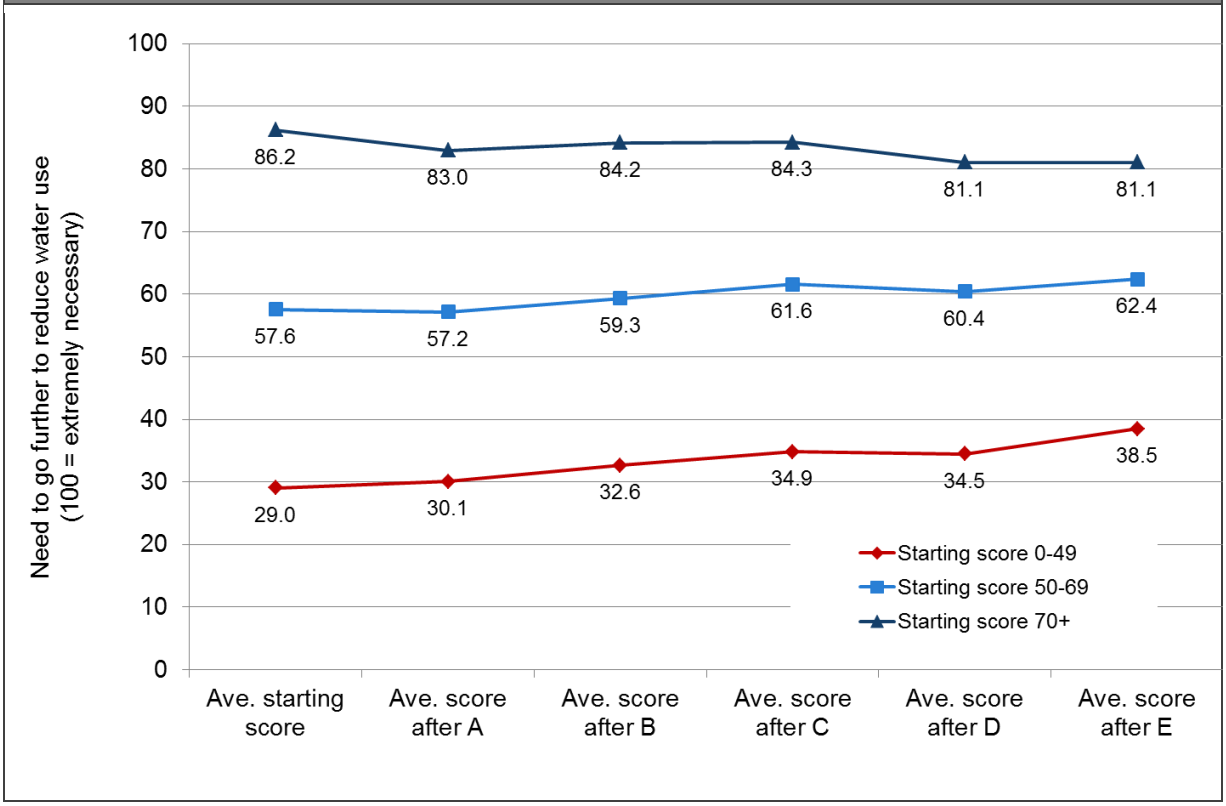
[20] *EU Life+ Project: Combining Water and Energy Efficiency*. Energy Saving Trust and Waterwise UK, 2011.

Table 5 – The impact of wider narrative messages	
Base: All (4,011)	
Statement	**Average movement caused by statement**
Increasing consumption, together with a growing number of households, has put pressure on water supply in England and it is likely that this problem will worsen with climate change. If we do not act the security of our water supplies could be compromised.	+3.2
Water use is also linked to energy. Treating waste water and supplying our homes with clean, drinkable, water creates five million tonnes of greenhouse gas emissions.	+1.7
Droughts in the UK are likely to become more commonplace while at the same time more intense rainfall will increase the chance of flooding. If we do not act the security of our water supplies could be compromised.	+1.7
Water use is also linked to energy - domestic water heating is responsible for 5% of UK CO2 emissions, and makes up around 25% of your household energy bill. A typical family of four could save about £100 a year on their bills simply by reducing each shower length by one minute	+1.1
The average person in England and Wales uses 150 litres of water a day, around 50% more than 25 years ago. By 2020 the demand for water could increase by 800 million extra litres of water a day.	+1.0
The average person in England and Wales uses 150 litres of water a day, around 50% more than 25 years ago. By 2020 the demand for water could increase by over 300 full Olympic swimming pools per day.	+1.0
Even if a family of four, with an average sized house, could collect every single drop of rain that fell on them in a year- they could still only collect ½ the amount of water they would typically use in a year.	-1.3
In England we have less water available per person than most other European countries because of the density of the population.	-1.9
In many developing countries water consumption is as low as 20 litres per day per person. In the UK it is 150 litres per day per person.	-2.2
The UK is not an exceptionally wet country. London, for example, has around the same average rainfall as Barcelona.	-7.1

Furthermore, the results demonstrate that the statements have a differential impact according to respondents' starting scores (Figure 19). The net impact of the statements is negative on those with a starting score of 70+ (i.e. who already agree it is necessary for households to go further). Among this group, the average score falls from 86.1 at the start to 81.1. However, among those respondents who give a lower initial score, the collective impact of the statements have a beneficial impact – among those giving an initial starting score of less than 50, the average score increases from 29.0 at the start to 38.5 at the end.

Figure 19 – Impact of the statements – according to the starting scores

Base: All (4,011)



4.2 Reciprocity and responsibility

The research has already noted, in Section 3.2, the tendency for participants in the depth interviews to focus responsibility onto others, notably Government and water companies. Whether this represents an attempt to shift responsibility away from themselves, or recognition of a mutual responsibility, is unclear. However, and in either respect, the water companies perceived poor performance on leakage continues to provide an easy way to reject the need for individual action.

Indeed, recent research[21] around the 2012 drought found that around three quarters of consumers (77%) identified 'leaks from water pipes' as a cause of the drought (ranking joint 1st alongside 'not enough rain'), followed closely by 'water companies not capturing and storing water effectively' (76%). Furthermore, over half (52%) disagree that their water company is doing enough to fix leaks.

However, the in-depth interviews suggest potential gains for messages from water companies that emphasise, and lead on, shared responsibility and reciprocity. During the discussions participants were shown a range of messages taken from early 2012 when hosepipe bans were being enacted in parts of the country. Of these, one of the messages – containing the line "it's everyone's responsibility - we're working as fast as we can to prevent leaks, but we need your help too" – appeared to resonate with many of the participants:

[21] *Research into restrictions on the use of water*. Consumer Council for Water, June 2012

I like this one [message]. It's saying we need your help, we're doing everything we can, and it doesn't put everyone into panic

M, 46, C1, Family, high water stress area

The message that everyone is responsible is good and helpful. Good as not trying to blame anyone, just asking people to be more careful.

F, 57, AB, Empty Nester, low water stress area

They [water companies] need to say "we're doing this and you can help us by doing this". At the moment the impression they're giving is "it's not our fault, it's nothing to do with us, it's all down to the consumer"

M, 64, B, Empty Nester, high water stress area

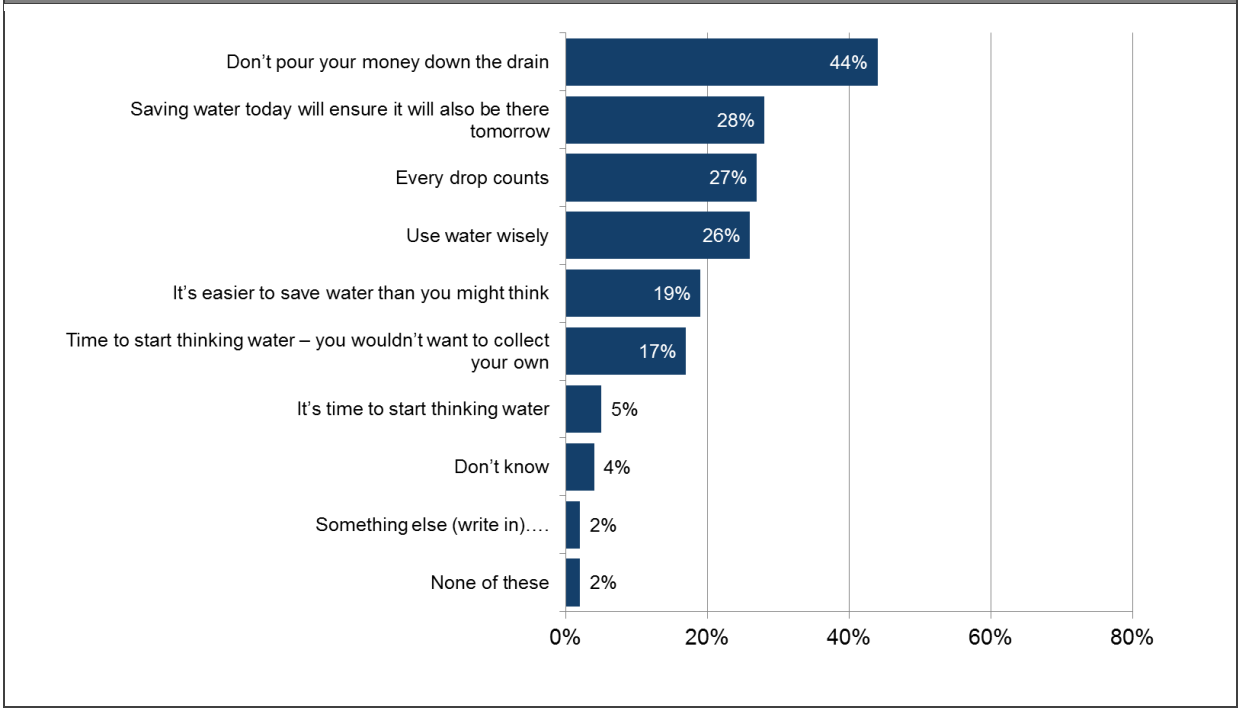
4.3 Water efficiency campaign 'tag lines'

In addition to testing messages that 'make the case' for water efficiency, the survey tested a number of high level 'tag lines' that, for example, might front a campaign. These were developed by the research team, alongside Defra, and were guided by real examples (either in the UK or internationally). The results demonstrate that the most popular tag line amongst those tested, preferred by 44%, is '*don't pour your money down the drain*' (Figure 20). This is followed by '*saving water today will ensure it will be there tomorrow*' (28%), '*every drop counts*' (27%) and '*use water wisely*' (26%).

Figure 20 – High level tag lines for water efficiency campaigns

Question: *Which one or two of the following, if any, do you think is the most effective message to encourage people to save water? [select up to 2 only]*

Base: All (4,011)



There are some notable variations in preferences according to age. For example:

- Younger age groups are more likely to prefer the tag line ‘don’t pour your money down the drain’ – chosen by 50% of those aged 18-24 (compared to 42% aged 65+).
- By contrast, older age groups are more likely to prefer the inter-generational equity tag line ‘saving water today will ensure it will be there tomorrow’ – 35% of those aged 65+ opt for this message compared to 21% among those aged 18-24.
- Likewise, the tag line ‘use water wisely’ also has a much stronger appeal among older age groups – chosen by 35% of those aged 65+ compared to 15% of those aged 18-24.

5. Messages II – specific behaviours, norms and household activities

This section of the report sets out findings from the online survey about the potential impact of messages that target specific behaviours and activities.

The messages were developed by the research team, drawing on the findings from the depth interviews as well as insight from the wider evidence base (e.g. Gram-Hanssen (2007) notes that perceptions of health risks related to excessive showering may be the most effective arguments for changing individual practices among teenagers in Denmark).

Some of the messages developed for testing are instructive; some directly reference a norm whereas others infer one; and some give a specific 'action' to verify the message (i.e. 'do this in order to know this'). It is important to note that this was not a systematic test of specific message types. Rather, the research recognised the plurality of possible approaches and, accordingly, sought very simply to test a range of approaches.

They are not intended to represent finalised, campaign-ready messages. Instead, they were developed in order to provide a 'test bed' for assessing the broad potential of different kinds of messages. Unlike the wider narrative messages explored in Section 4 (which are all accurate), the messages used in this part of the survey are broadly accurate but have a degree of 'artistic license' to test how the presentation of different norms impacts on reactions.

The survey sample was split into two halves (i.e. 2 x 2,000), with half shown a series of statements and the other half shown similar statements but with key details amended (Table 6). Respondents were asked three questions about each statement – (i) whether they have heard of it before or not; (ii) whether they consider it to be believable or not; and (iii) how likely – on a scale of 0-10 - it would be to change what they currently do (where 0 = not at all likely and 10 = very likely).

The section is presented as follows:

- The potential for alternative water efficiency messages (5.1);
- Understanding what make these messages more or less effective (5.2);
- Non-verbal messages (5.3).

Table 6 – Water efficiency messaging: Specific behaviours and activities	
Split sample 1	**Split sample 2**
Showers (asked of all of those who have showers)	
Quicker, cooler showers are better for the health of your hair and skin	Scientists have found that long, hot showers dehydrate your skin; so make it speedy and lukewarm for a youthful complexion
The average person showers for 4 minutes. Do you? Take the challenge.	The average person showers for 4 minutes. Do you? Cutting the length of time in the shower helps to save water. Take the challenge
By reducing your average shower time by 2 minutes you could save around 5000 litres of water a year	By reducing your average shower time by 2 minutes you could save around £20 a year off your bills
New 'air showers' that mix air into the water keep your shower powerful and could save the average household £100 per year on their bills.	Buy an aerated showerhead – by mixing air in with the water you get the same shower pressure and save water.
A dripping tap could end up costing you over £18 per year	A dripping tap can waste 5,500 litres of water a year: enough to fill a paddling pool every week for the whole summer
Laundry and dishes (asked of all of those with responsibility for laundry and dishes in the home)	
A full washing load uses less water and energy than two half loads. Put your hand in and make a fist, if you're touching the top of the drum and the top of the laundry then you've filled it perfectly!	A full washing machine load uses less water and energy than two half loads
The majority of people wear their jeans at least 10 times before washing them	Don't ruin your clothes by over-washing them. Jeans that are washed after every wear will wear out 5 times faster
Ever feel like a slave to the washing machine? There's no need to wash items like towels after a single use. Most households use them for a fortnight before washing them	Ever feel like a slave to the washing machine? There's no need to wash items like towels after a single use. Most households use them for at least a week before washing them
Give your eco button a try! It saves water, electricity, money and time and gets your clothes just as clean	Some households are wasting water and electricity by using the same setting without thinking. Give your eco button a try! It saves water, electricity, money and time and gets your clothes just as clean
According to a study modern dishwashers often use less water than washing the dishes by hand	Clothes not really dirty and just need a freshen -up? Use a short wash cycle to save water and energy
Gardening (asked of all of those with responsibility for gardening in the home)	
Don't water the garden with tap water – get a water butt and use natural rainwater	
Leave plants and shrubs dry until they show signs of wilting – watering too often causes shallow roots	
A water sprinkler in the garden can use as much water in one hour as a typical family of four uses in a day	
Watering your plants early in the morning or in the evening reduces evaporation and is more effective than watering at other times in the day	
As the climate changes so will the plants in your garden. Some traditional plants will struggle with less water so keep your garden looking good by choosing drought-tolerant plants	

5.1 The potential for alternative messages

The results suggest potential for these types of messages. For example, half of households (50%) say they are likely to change their behaviour (i.e. give a score of 7+/10) in response to the message *"clothes not really dirty and just need a freshen-up? Use a short wash cycle to save water and energy"* (Figure 21). This message achieves an average 'likelihood of change' score of 6.1 out of 10, and appears to also resonate with key groups such as those with children (6.8) and those who think they do more laundry washing than average (6.8).

Likewise, almost one in three (31%) are likely to change what they do in response to the message *"scientists have found that long, hot showers dehydrate your skin; so make it speedy and lukewarm for a youthful complexion"*, which adopts a beauty and vanity line with no specific mention of water use at all (Figure 22). The average score for this message is 4.8 and, while it does not have the same level of widespread appeal as the 'freshen up' message (above), it has a targeted appeal to specific groups – women (5.1) and those who have 8+ showers per week (5.6).

Figure 21 – Likely impact of messages – laundry

Question: *On a scale of 0-10 (where 10 = very likely and 0 = not at all likely) how likely is it that you would change what you currently do if you heard this information?*

Base: Those with responsibility for laundry, Sample A (1,550)

"Clothes not really dirty and just need a freshen -up? Use a short wash cycle to save water and energy"

Greater effectiveness:
- Those with children = 6.8
- Homemaker = 6.4
- Those who think the number of laundry washes they do is above average = 6.8
- Aged 25-34's = 6.8
- Pay attention to water bill = 6.7

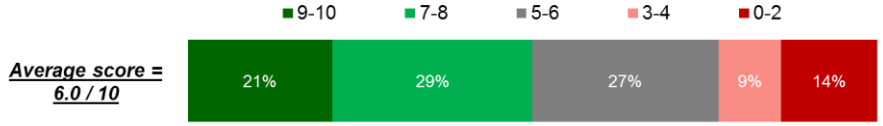
Lesser effectiveness:
- 65+'s = 4.4
- Those who go to not much or no effort to reduce their water use = 4.1

Figure 22 – Likely impact of messages – shower products

Question: *On a scale of 0-10 (where 10 = very likely and 0 = not at all likely) how likely is it that you would change what you currently do if you heard this information?*

Base: Those who have showers, Sample A (1,734)

"New 'air showers' that mix air into the water keep your shower powerful and could save the average household £100 per year on their bills"



Greater effectiveness:
- Those with 2+ kids = 7.0
- Those who think they spend longer than average in the shower = 6.9
- Aged 25-34 = 6.6
- Aged 35-44 = 6.5
- Homemakers = 6.5
- Go to great deal of effort to reduce water = 6.5

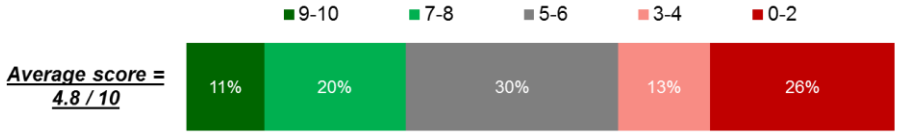
Lesser effectiveness:
- Aged 65 = 5.5
- Those who go to not much or no effort to reduce their water use = 5.2
- Those not at all or not very green = 4.1

Figure 23 – Likely impact of messages – shower length

Question: *On a scale of 0-10 (where 10 = very likely and 0 = not at all likely) how likely is it that you would change what you currently do if you heard this information?*

Base: Those who have showers, Sample B (1,746)

"Scientists have found that long, hot showers dehydrate your skin; so make it speedy and lukewarm for a youthful complexion"



Greater effectiveness:
- Women = 5.1
- 8+ showers per week = 5.6
- Aged 25-34 = 5.3
- Homemaker = 5.2
- 'Very' environmentally friendly = 5.7

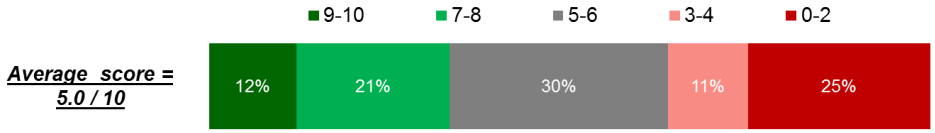
Lesser effectiveness:
- Men = 4.5
- Aged 65+ = 4.4

Figure 24 – Likely impact of messages – shower length

Question: *On a scale of 0-10 (where 10 = very likely and 0 = not at all likely) how likely is it that you would change what you currently do if you heard this information?*

Base: Those who have showers, Sample B (1,746)

"The average person showers for 4 minutes. Do you? Cutting the length of time in the shower helps to save water. Take the challenge"



Greater effectiveness:
- Women = 5.2
- Aged 25-44 = 5.3
- 'Very' environmentally friendly = 6.1
- 8+ showers per week = 5.7
- Pay attention to water bill = 5.7

Lesser effectiveness:
- Men = 4.7
- Aged 18-24 = 4.7
- Aged 65+ = 4.7
- Not very environmentally friendly = 3.2

The research also highlights the need for some messages to move beyond a presentation of a fact and invoke emotional responses. For example, the survey demonstrates that the message "*watering your plants early in the morning or in the evening reduces evaporation and is more effective than watering at other times in the day*" has been widely heard before (by 78% of gardeners), and likewise that it is considered believable (by 91%). However, fewer than half (46%) say it is likely to change what they currently do (Figure 25).

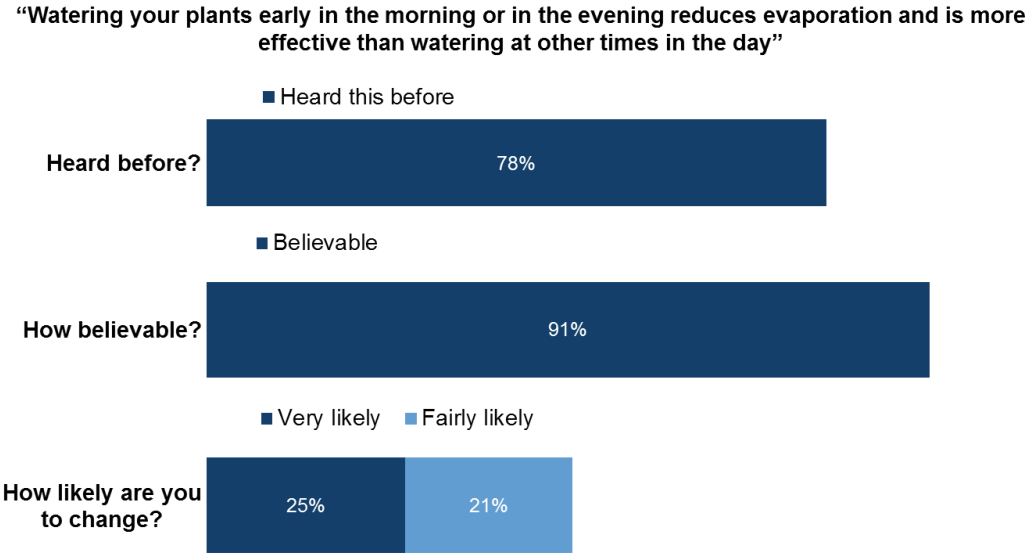
Figure 25 – Gardening messages – watering early and late in the day

Question: *Have you heard this before or is it the first time you have heard this?*

Question: *How believable do you think this information is?*

Question: *How likely is it that you would change what you currently do if you heard/saw this information?*

Base: Those with full or shared responsibility for gardening (2,580)



5.2 Understanding what makes these messages more or less effective

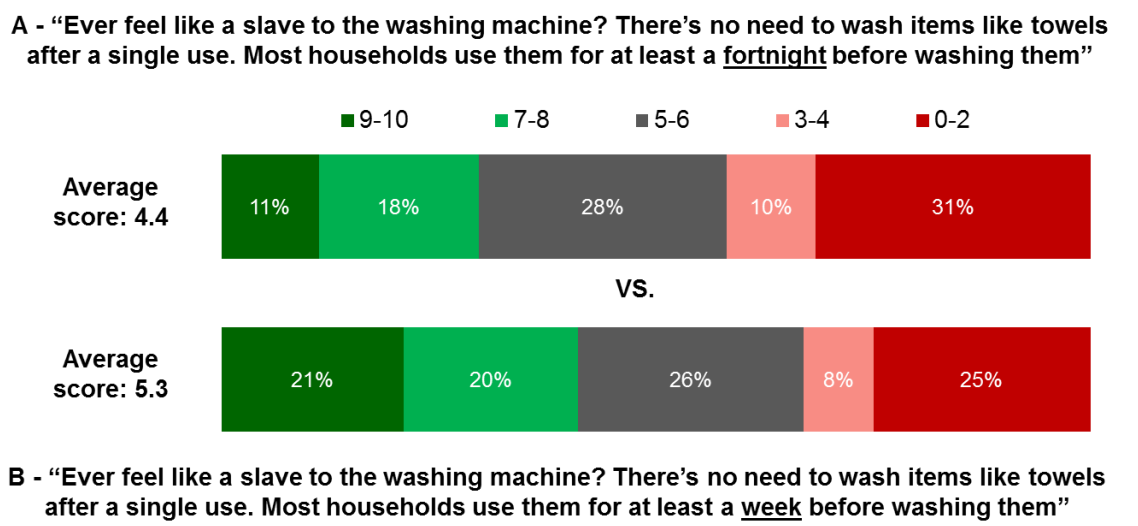
The research highlights the potential impact of tweaking elements of the message. For example, a pair of messages about towel washing used different norms – with one message claiming that 'most households use them at least a week before washing them'; and the other using two weeks as the norm[22].

The former of these is notably more successful (Figure 26), with 41% claiming a message like this would change what they currently do (and an average score of 5.3). In contrast, only 29% say they are likely to change in response to the latter, which achieves an average score of 4.4. The key difference between the two is the distance between the invoked norm and respondents' existing behaviours, i.e. the latter message – using the norm of a fortnight – is potentially too far away from current behaviour and what is currently considered 'normal'.

Figure 26 – Comparing messages: norms around laundry

Question: *On a scale of 0-10 (where 10 = very likely and 0 = not at all likely) how likely is it that you would change what you currently do if you heard this information?*

Base: Those with responsibility for laundry – Sample A (1,572); Sample B (1,550)



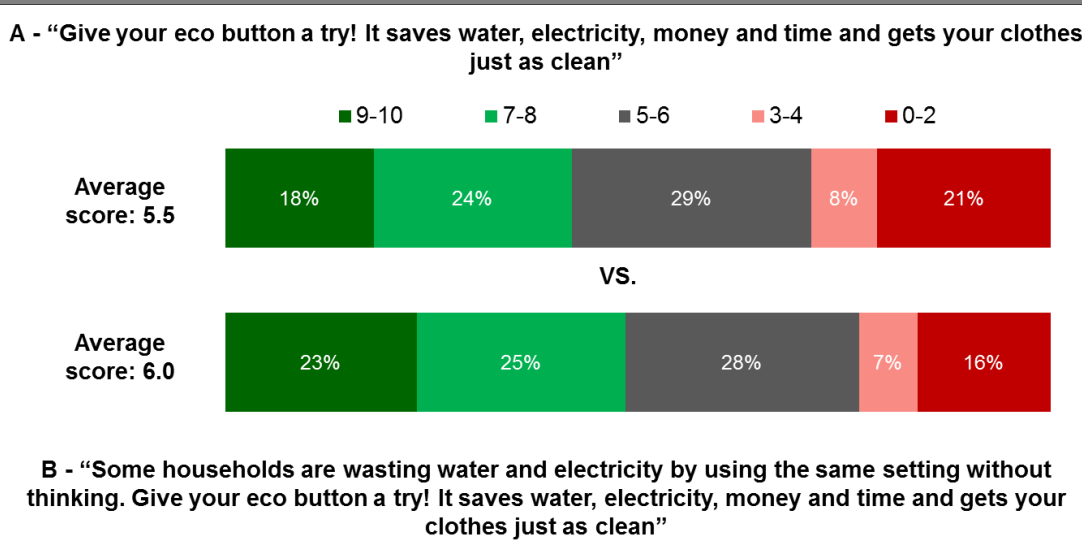
Likewise, and using a pair of messages about washing machine settings (Figure 27), the survey again suggests that messages which invoke the behaviour of others can improve the efficacy of the message. For example, the message "*give your eco button a try - it saves water, electricity, money and time and gets your clothes just as clean*" scores 5.5 on its own. However, it is more effective – scoring 6.0 - when it includes the precursor "*some households are wasting water and electricity by using the same setting without thinking*".

[22] Prior to undertaking this research and establishing the norm there was no data on which to make factually accurate claims about the actual norm of washing towels – and so this is an example of the research's 'artistic license'.

Figure 27 – Comparing messages: washing machine settings

Question: *On a scale of 0-10 (where 10 = very likely and 0 = not at all likely) how likely is it that you would change what you currently do if you heard this information?*

Base: Those with responsibility for laundry – Sample A (1,572); Sample B (1,550)

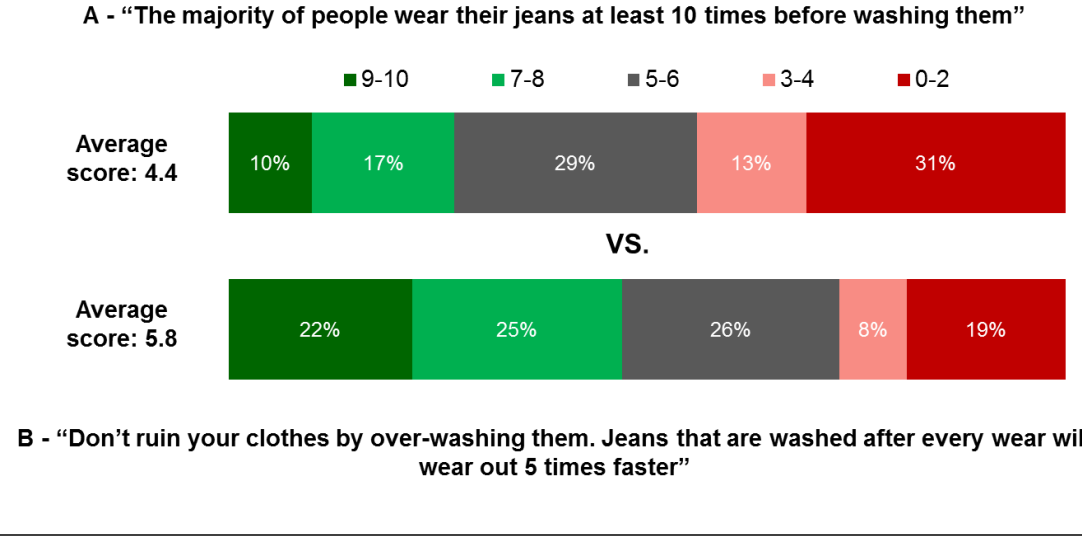


Nonetheless, the research also identifies situations in which a very direct social norm-based message might not be as effective (Figure 28). For example, using a pair of messages about jeans washing, the message '*the majority of people wear their jeans at least 10 times before washing them*' is less effective than the message '*don't ruin your clothes by over-washing them – jeans that are washed after every wear will wear out 5 times faster'*. The latter of these targets a specific (and unwanted) wash frequency rather than the average wash frequency.

Figure 28 – Comparing messages: norms around jeans-washing

Question: *On a scale of 0-10 (where 10 = very likely and 0 = not at all likely) how likely is it that you would change what you currently do if you heard this information?*

Base: Those with responsibility for laundry – Sample A (1,572); Sample B (1,550)

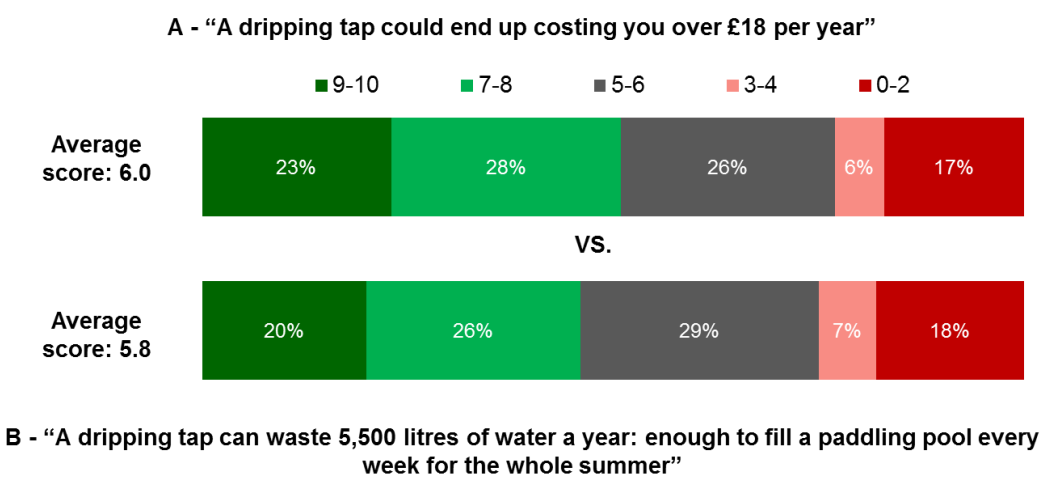


Finally, the relative power of cost and water consumption was tested using a pair of statements based around a leaking tap (Figure 29). This demonstrates - at least for this price point/level of consumption - that there is relatively little difference in impact. In fact both messages appear to resonate strongly with high average scores (6.0 and 5.8, respectively).

Figure 29 – Comparing messages: costs vs. litres

Question: *On a scale of 0-10 (where 10 = very likely and 0 = not at all likely) how likely is it that you would change what you currently do if you heard this information?*

Base: All – Sample A (2,005); Sample B (2,006)



The depth interviews provide further insight about the presentation of cost and water consumption figures. For example, participants were generally comfortable with litres as a basic unit (drawing comparisons with e.g. a pint glass or bottle), but struggled with metres cubed (as per the presentation of water consumption of bills).

> *[Interviewer: so you used 44 cubic meters in the last 6 months, can you visualise that?] No, not at all. [Interviewer: what if I told you it was 44,000 litres?] Wow, that's loads.*
>
> F, 30, C1, Family, high water stress area

> *I suppose it's better than gas or electric which are just units I don't even know what they mean. I mean 2 litres is a bottle of coke.*
>
> M, 49, C2, Family, low water stress area

Furthermore, they suggest that cost information is particularly sensitive to the scale used. For example, participants were typically surprised – when presented in the discussions with 'cost per use' figures – with the low cost (which was substantially lower than they would have guessed in the absence of the information). Indeed, this inadvertently *discouraged* water efficiency among some participants by reducing its perceived value and significance.

> *So my 15 minute shower only costs around 25p? That's not bad is it! I suppose it's daily but it's actually less than I thought it would be. I don't have to worry so much then.*
>
> M, 29, C1, Pre-family, low water stress area

They should put the costs in terms of monthly/annual – the per cycle cost makes it look too small.

M, 46, C2, Family, high water stress area

5.3 Non-verbal messages

Not all messages need to be verbal, and the depth interviews demonstrate the potential for other water efficient cues in the home. Most notably, there were positive reactions among several participants (especially among younger participants and those with children) to Thames Water's four minute shower timer that was shown as a prompt in the discussions, and a suggestion to extend the timer principle to outside taps.

There is actually something weirdly appealing about that. They should make one that dings too as you wouldn't keep looking at it…

F, 30, C1, Pre-kids, high water stress area

Why don't you have some kind of timer on an outside tap. It would just remind you of time passing as it's easy to lose track if you're watering the garden or washing the car.

M, 64, B, Empty Nester, high water stress area

The water people told us we should try and minimise it to about 5. I do try. But we need one of those timer things. They did actually give us one but I can't remember where I've put it. It was just an egg timer thing (no sucker), so it's got lost.

F, 39, B, Family, high water stress area

Likewise, and in a similar vein, reactions were also positive among some participants to the idea of a shower mat that changes colour according to the length of the shower[23]. Some participants, on the other hand, found this and similar ideas to be too 'gimmicky', or objected to the principle of monitoring how long they spend in the shower.

I love it! It would be good to be able to choose your own colours. The kids would love it too but it might make them shower longer to see the change! I'd probably buy it myself, it's quirky.

F, 32, DE, Family, low water stress area

That's a really cool idea [colour changing shower mat]. It's brilliant. It's great. A shower mat that changes colour! Does this exist?!

M, 29, C1, Pre-family, low water stress area

Why would you want to know? You can take as long as you like.

F, 60, C1, Empty Nester, low water stress area

[23] This idea was a shortlisted finalist in the Guadian Sustainable Business competition 'Post it in the shower', in association with Unilever - http://www.guardian.co.uk/sustainable-business/shorter-sustainable-shower-competition-unilever?INTCMP=SRCH

6. Conclusions and implications

This final section sets out the research team's conclusions based on the research findings and discusses some of the key implications for Defra. It is important to note that these reflect the analytical insights of the research team, not Defra.

1. Salience remains a key barrier

On the one hand, the public are cognisant of water efficiency and intuitively recognise water as a precious resource that should not be wasted. However, and on the other, the issue continues to be hindered by a lack of salience. So while water is considered *precious* it is simultaneously considered *abundant*; likewise, while individuals are *conscious* of the issue they are also not *concerned*.

The salience of water is undermined by a core belief (reinforced by visual cues) that water is an abundant resource in England. It is also undermined by a suite of issues that hinder feedback to consumers (including weak price signals, direct debit payment structures and poor billing information) as well as a lack of jeopardy (i.e. a perception that the worse that will ever happen is not being able to use a hosepipe to water the garden for a short period).

While short term events such as droughts go some way to redressing this, the impact is limited to specific sections of the population and to a short period of time. Indeed, the treatment of droughts as an 'exceptional' event requiring short term action (and one that is a binary choice between a ban and no ban; or limited water vs. plentiful water) serves to weaken the perception that it is a longer term issue requiring sustained attention.

2. There is strong potential for a focus on norms and related activities

A focus on norms and activities offers an alternative (or parallel) approach to increasing water efficiency for the simple reason that they operate independently of the salience of water (and arguably of values and attitudes) to peoples everyday lives. The research demonstrates that:

(i) Specific behaviours and activities vary considerably across households, with some making high water consumption much more likely;
(ii) Because many of these behaviours and activities are undertaken privately they are rarely subject to social norms. In the absence of a specific reference point for what is considered 'normal', households tend to assume that their behaviour is average – even when their practices deviate from the norm;
(iii) While the impact of social norms may be weak at present, individuals are influenced by what others do (particularly 'people like them', i.e. that they personally identify with and relate to). In the semi-private setting of gardening, for example, households already make assumptions about their own watering behaviours relative to their neighbours.

3. **The interface between households and their appliances, fittings and settings also offers potential for water efficiency.**

While new appliances, fittings and settings offer households potential water efficiency gains, it is by no means a given that these gains will be realised in practice. The research suggests a mixed picture and, while it appears that households know how to make their home 'work', they do not necessarily know how to make it work in the most efficient way. Alongside similar findings for DECC in relation to energy and heating (i.e. the link between gas consumption and boiler / radiator settings), this appears to be a key line of enquiry.

4. **High level messages that 'make the case' for water efficiency need to be deployed strategically.**

The research suggests that many already accept – without any messaging - the need for households to go further to save water. This does not mean, in our view, that there is no role for such messages (indeed, they have a role to play in wider efforts to increase the saliency of water). However, it does call into question *the extent* to which they are used (given their relative dominance at present) and also *the way* in which they are used.

For example, the evidence suggests that while they have an obvious role at specific points in time (e.g. periods of drought), they should not focus exclusively on atypical circumstances (since this only serves to reinforce the perception that water is an ephemeral concern). Thames Water's 'come rain or shine' messaging is a positive case in point (whereas its 'we are in drought' messages led to an uncomfortable scenario when drought messages were still publicly displayed when it was raining heavily). The research also suggests that not all water narratives are created equal. For example:

- Messages that seek to contradict the widely held belief that rainfall is abundant in England appear destined to fail (and, worse still, likely to antagonise in the process);
- By contrast, households appear more receptive to messages focused on population pressures, climate change and ensuring security of supply in the face of an unpredictable future (of which 'weird weather' may be a part);

Furthermore, the twin issues of fairness and responsibility emerge as highly significant, given that both form a key part of individuals' 'deep narratives'. At present, water companies' perceived poor performance on leakage signals that they are not taking their responsibility, which in turn makes any request to their customers appear unfair. In contrast, the research suggests much greater potential for messages that re-frame the request to demonstrate water companies are taking action and are asking their consumers to reciprocate.

5. **More specific and focused messaging is required, with potential for messages that provide social proof, invoke emotional responses and target specific household behaviours and activities.**

One of the key barriers identified in the research is a perception that there is little scope for change; that people feel that they use what they need and no more. This is illustrated very neatly by following the quote (which we judge is worthy of repeating again here):

> *I use water that I need, it's not like I'm tipping it away for fun. So when I see this [message] I don't know what I'd stop doing. It feels disconnected as they're telling me to do something I don't feel I can do anything about.*
>
> F, 54 C1, Empty Nester, low water stress area

This demonstrates a fundamental need, in our view, for a shift in emphasis towards messages that promote specific actions. In particular, the research highlights the potential role for a new suite of messages that target, variously, perceived norms, behaviours and specific household activities and routines. While none of the messages tested as part of this research were intended to represent campaign-ready messages, they have demonstrated the potential for these kinds of messages. What is required now is further work to develop/hone the messages, understand who is best placed to deliver them (i.e. the messenger), and test them in a live setting.

Encouragingly, the outcomes from the knowledge transfer workshop – which demonstrated a desire among practitioners to work in partnership with each other and with Defra - provide a ready-made platform. In that vein, and alongside the key opportunities already outlined in the session for partnership working (see Appendices 4-5), Defra has a key opportunity to continue their engagement with communications practitioners across the sector to encourage and help enable the development of an approach to water efficiency messaging that takes into consideration perceived norms, behaviours and specific household activities associated with water use in the home.

As a final comment we note that, while these conclusions have largely focused on interventions involving messages (necessarily so give that it was one of the project's main objectives), this is not intended to detract from other potential interventions that target other elements of our 'determinants of water use' model. Messages are one of a series of possible tools to influence behaviours, and we note that the findings also point to the importance of improving the level of feedback to households (e.g. through better billing and/or metering), and the importance of increasing the penetration of water saving appliances and fittings.

Appendices

Appendix 1: Depth interview discussion guide

Notes for interviewer

Purpose of interview

Part 1: To explore the household activities, routines and dynamics that consequently lead to water consumption, as well as the products and appliances with which these activities, routines and dynamics interact.

Part 2: to directly explore attitudes to water, knowledge of water consumption and test water efficient activities and products (including messages on the former and labelling on the latter). Also to record actual water consumption where possible.

Note: the first half of the interview (i.e. Part 1) is NOT ABOUT 'water' behaviours and the interviewee SHOULD NOT be made aware of this. From their perspective at this point the study is about lifestyles and the 'way people live in their homes in Britain in 2012'. Any questions about water or spontaneous mentions of water should, in Part A, be framed within a broader context of 'the psychology of home' and the things that household members do, in going about their daily lives (e.g. bathing, washing, cleaning, gardening), that lead to water consumption. Part B, by contrast, deals directly about water.

Things to take to interview

- Interview guide/analysis record sheet
- A blank A3 piece of paper to draw a 'household map' (supplemented by crayons/sticky labels)
- Sorting exercise 1: Schwarz value statements
- Sorting exercise 2: water saving tips and advice
- Showcard 1: water company drought messages
- Showcard 2: figures for water consuming activities (in pence and in litres)
- Showcard 3: comparative consumption information for the household on water bills
- Showcard 4: water saving product labels
- The Thames Water saving freebie kit
- £60 Incentive
- Dictaphone

Introduction

(Time 2 mins; Timer 2 mins)

- Interviewer to introduce themselves and Icaro Consulting / Ipsos MORI.
- Aims of project: a study about lifestyles, and home life, and the different ways different types of household spend their time at home.
- Confidential: their name won't appear anywhere.
- No right or wrong answers.
- They don't have to answer anything they don't want to.
- Interview will last up to 2 hours.
- Permission to record; explain you'll be making notes throughout – for our memories only!
- Any questions before we start?

Part 1: Household Activities, Lifestyles and Products

The household (Time 8 mins; Timer 10 mins)

- How long have they lived in the home?
- Who lives here at the moment (including pets)?
- What does each person do (e.g. work full time, students, stay at home mum/dad)?
- What are each household member happiest doing – in or out of the house? How sporty is everyone? [e.g. note any for any sporting activities/gym that would increase washing and bathing]
- Do they have people regularly staying over (e.g. for weekends)? Do they entertain guests often?
- Do they go away on holiday a lot?
- Gas and/or electricity? Water meter? Broadband?
- What do they like most about the home? And least?
- What kinds of renovations, if any, have they done? What was the motivation/reason for this?
- What renovations, if any, are they planning in the near future?
- What does the home 'mean' to them (e.g. home as sanctuary? Functional space to live? A 'busy' place to socialise or place to relax and chill out?)
- What are each

Map of the home, followed by <u>Tour of the home 1: inside spaces</u> (Time 15 mins; Timer 25 mins)

Ask the interview to draw onto the A3 sheet a map of their home (can be as basic as a series of boxes/rectangles – one for each room in the home, or they can draw a floor plan schematic – it's up to them). Ask them to identify, pre-tour, any rooms they especially like or dislike with green and red stick labels (respectively). Also ask them to write down two or three words that best describe what they think/how they feel about each room.

Then ask to take a quick tour of the home (excluding the garden at this stage), using the tour to delve in more detail about which rooms they like/are most proud of, how and who uses each room, where they spend a lot of time, where they have renovated / would like to renovate. [DURING TOUR REFER TO MODERATOR CHECK LIST OF THINGS TO OBSERVE / LOOK FOR]

The individual (Time 10 mins; Timer 35 mins)

<u>Sorting exercise 1: Schwarz value statements</u>. As them to group and position the statements on a continuum running from 'most important to them personally' through to 'least important to them personally'. Ask them why they have grouped the statements in that way.

Household activities and products (Time 15 mins; Timer 50 mins)

- How are household tasks and decisions shared? [IF SINGLE HH THEN SKIP THIS QUESTION]

Just picking up on some of the household tasks and responsibilities, I'd like to ask you a bit more about them:

- **Laundry washing** – how and when is this done (e.g. any fixed routine or just 'as and when'? how many times/week?). Who does it? What determines when different items need to be washed (e.g. towels? bedding? Jeans/t-shirts; sporting apparel?). What kind of washing machine do they have? How old is it? Why did they choose it [look for any spontaneous mention of energy

and/or water efficiency]? What washing cycle do they use (e.g. eco/economy)? What detergent do they use and why? Do they do anything to maintain the appliance (e.g. de-scaling)?

- **Computing** – how many computers in the home? How long online in the evening? Any gaming, downloading/streaming movies?
- **Cooking –** shared responsibility or one person? Describe a typical meal from how you prepare it through to serving and eating (look for description of how they wash veg/fruit).
- **Washing up** – do they have a dishwasher? When do they put it on (e.g. every day/overnight/every 2 days, etc.)? Who does this? Does everything go in, or just dirty/post-food plates? What kind of dishwasher do they have? Is it standard or slim size? How old is it? Why did they choose it [look for spontaneous mentions of efficiency, either energy or water]? What cycle do they choose (e.g. economy or eco)? What washing up/dishwasher detergent do they use and why? Do they do anything to maintain the appliance?
- **Washing the car** – who? how often? With what (bucket and brush? Hosepipe?)
- **General household cleaning** – who, how often? Do they do any 'outdoor cleaning' e.g. patio/decking? How do the do this?
- **Drain maintenance** – what do they do to keep drains clear? Watch what they put down the sink (e.g. use a fat trap or other means of collecting fats, food and hair)? Regularly use drain cleaning products? Hire a contractor?
- **Showering / bathing** – what split between showers and baths in the home? How many of each per day per family member? [If lots of gym noted earlier] do they shower at the gym/changing rooms or back at home? How long are the different household members in the bath/shower? What time of day (e.g. morning or evening before bed)? Is it functional or relaxing? What kind of shower do they have, e.g. power shower (and why)? What kinds of taps do they have?

"Outside Space" and <u>Tour of the home 2: outside space</u> (Time 10 mins; Timer 60 mins)

[IF POSSIBLE] Can you give me a quick tour now of your back garden? [DURING TOUR REFER TO MODERATOR CHECK LIST OF THINGS TO OBSERVE / LOOK FOR]

- Tell me about your garden – do you enjoy gardening? How much time do you spend in it? What do you use it for / do in it (e.g. for play? For display? For growing food? For animals/birds?)
- Have you made any significant changes to it? Are you considering any changes?
- How much money have you spent on it? In what ways/on what things? (probe on regular spend, like new plants and flowers, as well as 'renovation spend']
- Where do you get your gardening ideas from? Magazines? Flower shows? Friends/neighbours?
- Is it easy to maintain? How do you maintain it?
- Ask about their watering regime – do they use a watering can, a hose or a sprinkler? When do they water the garden during the day? Note any spontaneous mention of "we can't, hosepipe ban" – see if they do regardless
- Do you have a water butt? When did you get that? How is it? How much of your water needs does it supply?

[if they have one] And now thinking about your front garden/driveway…

- Repeat questions or weave them into the garden questions [whatever is more natural], i.e. uses of the front space; any changes to front space; motivations to have it that way/choice of styles (and, if paving, how they chose the paving they wanted); level of investment.

Part 2: Attitudes to water

As I said earlier, this is a study about the lifestyles of different types of households. In this second part of the interview we are picking on a specific issue with some households (and the issues vary from household to household). We would like to have a discussion with you about **water use**.

General attitudes and knowledge about water use (Time 20 mins; Timer 1 hour 20 mins)

- How much water do you think your household uses – average? Below/above average?
- When going about your household routine, which tasks or activities do you actively think about the water being used – if any?
- What do you think are the biggest uses of water are in your home? [probe on the practices that go on in the kitchen vs. garden vs. bathroom]
- Do you ever worry about water use? Why/why not? [probe on their motivations to save water – do they consider it a precious resource? Are they worried about the cost?]
- Is there someone in your household who is more concerned about water use? Why are they concerned [probe on cost savings, environment, general dislike of waste]
- What steps, if any, has your household taken / does your household take to save water? Any products (e.g. low flow shower heads etc.) or practices (e.g. turn off tap when brushing teeth?)
- Do you know how much water the household uses? Do you know how much you spend on water? Is it going up/down or staying the same?
- [if they have a water meter] Do you ever look at your water meter? What do you understand from it (is it just numbers)?
- [if they do not have a water meter] Would you be interested in a meter? Why/why not
- Would you be interested in a 'smarter' water meter – like for energy – where you have a real time display to show how much water you are using?
- Would it be ok to see your most recent bill [only if readily available and doesn't take ages to find and print off]

Water saving messages 1: high level messages from water companies (Time 10 mins; Timer 1 hour 30 mins)

- What did you think of the recent messages about the country being in drought?
- Showcard 1: water company drought communications. On this sheet are some of the information that water companies were sending out. What do you think of each of these?

Water saving messages 2: water-saving information, tips and suggestions (Time 15 mins; Timer 1 hour 45 mins)

- Sorting exercise 2 – water saving messages: here and some cards with some different facts, tips and figures about water from different people/organisations.
  - First of all I'd like you to group them in terms of those that you already knew and those that are new for you?
  - Now I'd like you to sort them into things that you already do and things that you don't do
  - Of this 'don't do' pile, can you separate those you would be willing to do from those that you would not be willing to do. Why/why not?

- Showcard 2 – information on the water consumption of different activities: Here is some information from a water bill about the average cost of various household activities. What do you think of this information? Is it surprising/not surprising? Interesting/not interesting? Would it have any impact on your household routines and lifestyles?

- Showcard 3 - comparative graphs on bills: would this kind of information be useful? Would you look at your bill any more closely? How likely is it this information would change how you see/use water in the home?

- Thames Water freebie kit: Here are some things that water companies give out free to their customers. What do you think of these? Is the information useful? Why/why not? Would you use the freebies (e.g. the shower timer)? Why/why not?

Water saving products (Time 15 mins; Timer 2 hours)

- What kinds of water saving products for the home have you heard of? [note down what they spontaneously know]
- Have you heard of any of these as well? Probe on [if not already raised]
    - Water butts
    - Small scale greywater recycling (e.g. diverting used bath and shower water to flush the toilet
    - Garden mulches
    - Water efficient showers/shower heads
    - Water efficient taps/tap inserts
    - Low flush toilets (dual flush, waterless urinals)
    - Low water using washing machines and dishwashers

- Which of these products appeal? Why? What questions would you have about the product? What would you need to know in order to feel comfortable about considering buying a product like this? Where would you go to find out?

- Which of these don't appeal? Why not?

- Showcard 4 - water appliance labels: Here are some labels that are sometimes used to identify to consumers how water efficient a product is. Have you seen these before? If you saw this in the store would you understand them? Would they be meaningful to you? Would they influence your decision in any way?

New exercise – How wedded to certain water related tasks are they

Sort the following into 3 piles – "Would consider changing", "Might consider changing", "Would not consider changing"

- Showering behaviour (frequency of shower)
- Showering behaviour (length of shower)
- Bathing behaviour (frequency of baths)
- Bathing behaviour (sharing water for kids etc)
- Gardening behaviour (watering plants)
- Gardening behaviour (other use of water e.g. washing patio / car)
- Kitchen use (dishwashing)
- Kitchen use (clothes washing e.g. load size and frequency)
- Toilet use (frequency of flushing e.g. only after #2)

Discover what their current behaviour is like and in what ways they'd be willing to change. Where would they need help or advice? Crucially – do they consider their current behaviour as 'normal' compared to others?

Appendix 2: Depth interview prompt materials

SHOWCARD 1: WATER COMPANY MESSAGES

We are in drought

After an exceptionally dry two years, with below average rainfall for 19 of the past 24 months, the Thames Water region, like much of the South East, is in drought.

As a result, groundwater – which keeps rivers flowing throughout the year – is, in some parts of the region, close to the lowest levels ever recorded, and many of the smaller rivers feeding the Thames have fallen to exceptionally low levels for the time of year.

One wet weekend won't make a difference

It's going to take a lot more than a few wet days to get us back to our target position for this time of year. We're dealing with the impact of two consecutive dry winters, with the months in between also suffering from below average rainfall. To recover from a situation like this will take months of persistent rain. With fewer raindrops falling and more people arriving every day there's growing pressure on our precious water resources.

It's everyone's responsibility

With this ban we would expect to see up to 150 million litres of water a day saved. To get the same saving from replacing leaky pipes would cost £1.2bn and take 10 years. We're working as fast as we can, but we need your help too.

Summer rain is no good

Unfortunately any rain over the summer will not help us because now most of the water will be taken up by trees and plants or evaporate.

There's more to it than you think

In our dry corner of the UK, we're parched in the summer and, if we are lucky, it's wetter in the winter. We get a third less rain than anywhere else - hardly enough to make a splash.

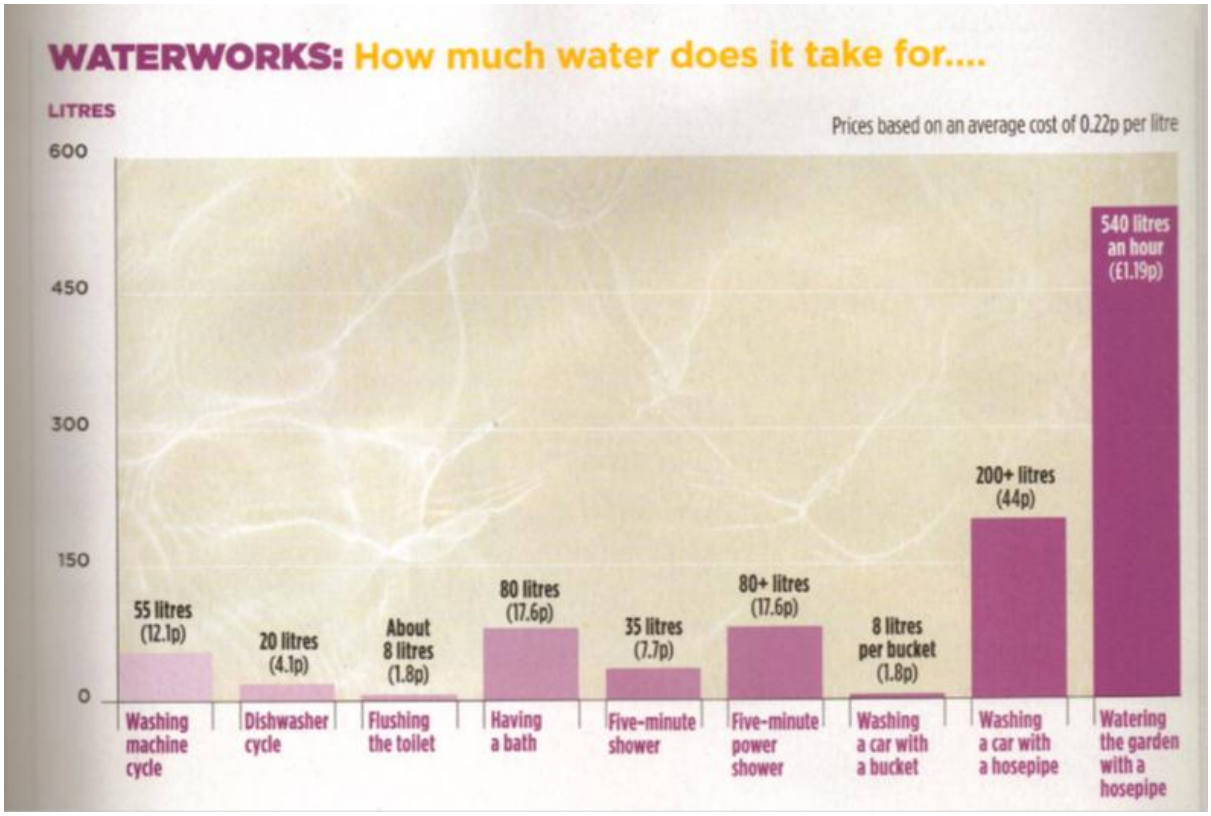
The water that's available, after thirsty plants and evaporation have taken their share, is barely a quarter of what fell out of the sky in the first place.

RAIN OR SHINE
PLEASE
ALWAYS USE
WATER WISELY
FREE water-saving gadgets
for ALL Thames Water customers
www.thameswater.co.uk/waterwisely

May
-36%
Jun
+27%
Jul
-15%
Aug
+8%
Sep
-38%
Oct
-60%
Nov
-46%
Dec
+5%
Jan
-36%
Feb
-62%
Mar
-57%
Apr
+162%
Avg.

ONE WET MONTH
V
TWO DRY YEARS
WE ARE STILL IN DROUGHT
Come rain or shine, please use water wisely.

SHOWCARD 2: WATER CONSUMPTION FIGURES



SHOWCARD 3: COMPARATIVE INFORMATION ON BILLS

Customer Reference No.: 123456

FOLKESTONE & DOVER Water Services Limited

VEOLIA WATER

Mr & Mrs Customer

Are you wasting money?

Let us show you how you can be more water efficient and reduce your water & energy bills

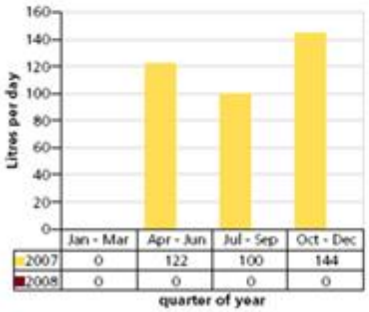
Your water use in the last bill period was: **13 m³**

Your average daily water use was therefore: **144 litres/day**

Compare your average daily water use with the table below to see how water efficient you are and the potential monetary savings of becoming water efficient.

Occupancy	Property type	Typical total water use (litres/day)	Water effident water use (litres/day)	Value of potential saving per year
1	House with garden	198	166	£15.11
	Flat	158	133	£12.08
2	House with garden	337	283	£25.68
	Flat	269	226	£20.54
3	House with garden	429	360	£32.74
	Flat	343	288	£26.19
4	House with garden	544	457	£41.47
	Flat	435	365	£33.18
5	House with garden	646	542	£49.25
	Flat	516	434	£39.40
6	House with garden	736	618	£56.15
	Flat	589	495	£44.92

Your average daily water usage



This quarter

Your consumption this quarter is higher than last quarter. Do you know why? Have you had extra visitors?

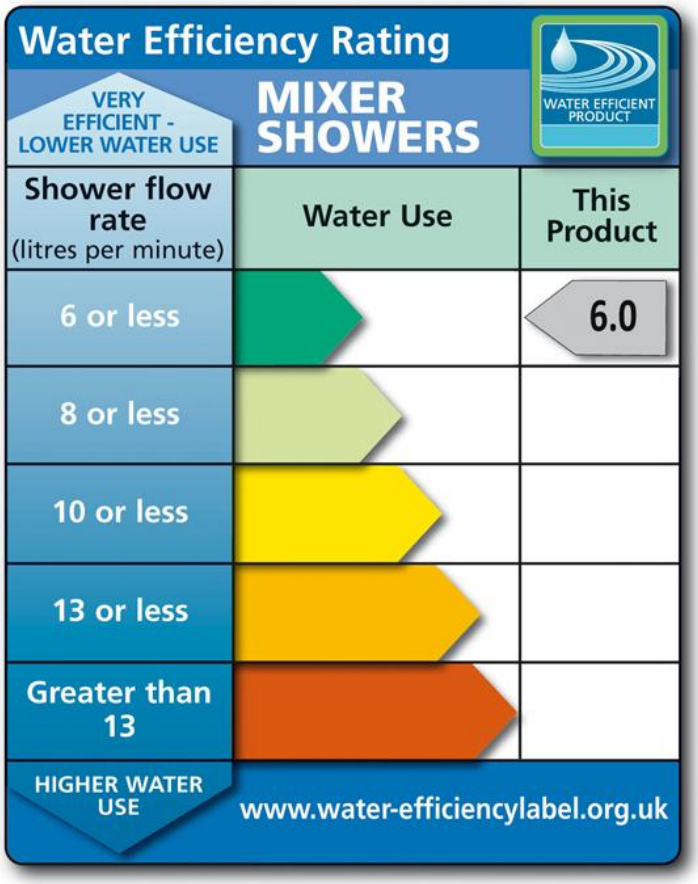
If you think it should have been lower or the same, carry out a leakage check as shown overleaf

This year

We do not yet have a full year of quarterly data collected. When we do we will advise how your annual consumption compares to previous years

For ways to make your home more water efficient visit www.fdws.co.uk

SHOWCARD 4: WATER EFFICIENCY PRODUCT LABELLING



Appendix 3: Survey topline results

- This topline presents the results from a survey conducted by Icaro Consulting / Ipsos MORI. Fieldwork was undertaken online across England from 19th October – 5th November 2012. The results are based on a sample of 4,011 adults aged 18+, representative of the population in England.
- Interlocking quotas were set on age, gender, English GO Region and work status. Post survey, the data was weighted by age, gender, working status and housing tenure.
- Base sizes vary by question and are stated throughout. For some questions the sample was split into two halves (i.e. 'A' and 'B'). In these instances the two samples are identically matched in terms of their age, gender, GO region, working status and tenure profiles.
- Where percentages do not add to 100% this is due to rounding of the raw data or multiple response questions. An asterisk (*) denotes a value greater than zero but less than 0.5.

SECTION 1 – INTRODUCTORY / LIFESTYLE QUESTIONS

Q1	**Which of the following, if any, does your household have? Please tick all that apply.** Base: All (4,011)		
	TV	97%	
	DVD Player	86%	
	Blu-Ray Player	25%	
	Washing machine	97%	
	Tumble drier	55%	
	Games console e.g. PlayStation, Xbox, Wii	57%	
	Broadband internet	96%	
	Computer / laptop / tablet device	97%	
	Dishwasher	46%	
	Gas central heating	82%	
	Car	81%	
	Bath	88%	
	Shower	89%	
	Swimming pool	2%	
	Front garden / driveway	74%	
	Back garden	81%	
	Water butt	30%	
	A pond	13%	
	Double glazing	86%	
	Jacuzzi	2%	
	Garage	44%	
	None of the above	0%	

Q2	**Who in your household is responsible for the following household tasks?** Base: All (4,011)				
		All / Mostly me	Shared responsibility	All or mostly someone else	Not applicable / Don't do
	Gardening	44%	32%	21%	3%
	Household cleaning	51%	33%	15%	1%
	Laundry / washing clothes	58%	23%	19%	1%
	Preparing dinner	54%	30%	16%	1%
	Washing dishes / dishwasher	49%	41%	9%	1%
	Food shopping	59%	35%	6%	*

SECTION 2: HOUSEHOLD PRACTICES AND NORMS

(I) LAUNDRY

L1	**In a typical week (i.e. 7 days), how many loads of washing does your household usually do? Write in the number or chose one of the other answers.** Base: Those with full or shared responsibility for laundry in their household (3,124)		
	1-3	40%	
	4-5	25%	
	6-7	11%	
	8+	11%	
	Average number of washes per week	*4.3*	
	Less than once a week	3%	

L2	**How long have you had your current washing machine?** Base: Those with full or shared responsibility for laundry in their household (3,096)		
	Less than 1 year	12%	
	1-2 years	26%	
	3-4 years	30%	
	5-10 years	23%	
	More than 10 years	6%	
	Don't know / can't remember	4%	

L3	**Which of the following statements best describes how you use the washing machine in your household?** Base: Those with full or shared responsibility for laundry in their household (3,096)		
	According to a set routine - the washing machine typically goes on at a similar time in the day / day of the week	17%	
	There is some routine, e.g. the washing machine is more likely to go on at certain times (e.g. the weekend)	28%	
	Not according to a routine - the washing machine goes on whenever it is needed	55%	

L4	**Out of every 10 washes, how many of the following washing loads will you typically do? Please write a number next to each (which can be 0 if you never do it) and ensure the column adds up to 10** Base: Those with full or shared responsibility for laundry in their household (3,096)		
		AVERAGE TOTAL OUT OF 10	
	A full load (100%)	6.7	
	A quite full load (e.g. 80%)	2.1	
	A half full load (e.g. 50%)	0.9	
	A smaller load (e.g. just a few specific items)	0.3	

L5	**We would now like to ask you about the settings that you use on your washing machine. Firstly about the setting(s) that you use frequently; and then secondly about any settings that you use less frequently/occasionally** Base: Those with full or shared responsibility for laundry in their household (3,096)			
		Use frequently	Use occasionally	
	Cold wash	4%	5%	
	30 degree	43%	14%	
	40 degree	65%	12%	
	60 degree	20%	23%	
	90 degree	4%	13%	
	Delicates	7%	18%	
	Woollens	6%	15%	
	Eco-wash	11%	5%	
	Quick wash	30%	23%	
	Other (write in)	3%	2%	
	Don't look at the setting, just turn it on	1%	1%	
	Don't know	*	2%	
	None	-	17%	

L6	**When you are doing the laundry, which of the following, if any, are typically the most important things for you? Please tick up to 4.** Base: Those with full or shared responsibility for laundry in their household (3,096)		
	How long the washing machine cycle will take	26%	
	Getting the clothes washed and dry in time for something (e.g. school/work next day)	26%	
	Selecting a specific setting to match the wash instructions on the label	21%	
	How clean you want the clothes to be (e.g. a 'freshen up' or a 'proper wash'?)	24%	
	Not over-filling the machine (e.g. too much weight)	27%	
	Not under-filling the machine (e.g. waiting until there is a full load)	39%	
	Putting 'like' colours together (e.g. all the whites together)	56%	
	Putting 'like' items together (e.g. all the towels together)	33%	
	Saving money	23%	
	Saving energy	28%	
	Saving water	15%	
	Not making too much noise for neighbours/others	4%	
	Don't really think about it / it's just a habit now	5%	
	Something else (please write in)	1%	
	Don't know	1%	

L7	**How many times do you typically wear jeans in between washes?** Base: Those with full or shared responsibility for laundry in their household who wear jeans (2,540)		
	1	5%	
	2-3	38%	
	4-5	30%	
	6-7	13%	
	8+	13%	
	Average number of wears between washes	*5.3*	

L8	**How many times do you typically use bath towels in between washes?** Base: Those with full or shared responsibility for laundry in their household who use towels (3,010)		
	1	10%	
	2-3	34%	
	4-5	22%	
	6-7	20%	
	8+	14%	
	Average number of uses between washes	*5.4*	

L9	**How often do you typically wash bedding (duvet, sheets and pillowcases)?** Base: Those with full or shared responsibility for laundry in their household (3,096)		
	Once a week	28%	
	Once a fortnight	41%	
	Once every three weeks	11%	
	Once a month	14%	
	Once every couple of months	4%	
	Once every three months	1%	
	Less often than this	1%	

L10	**Compared to other households like yours (e.g. the same size/number of people), do you think that the amount of laundry your household does is…?** Base: Those with full or shared responsibility for laundry in their household (3,096)		
	…well above average	3%	
	…slightly above average	15%	
	…about average	56%	
	…slightly below average	15%	
	…well below average	5%	
	Don't know / no idea	5%	

L11	**On a scale of 0-10 (where 0 = not at all interested and 10 = extremely interested] how interested would you be in a washing machine with a sensor light that indicates the weight of the washing load – so you know when you are under filling or over filling the machine?** Base: Those with full or shared responsibility for laundry in their household (3,096)		
	Very interested (i.e. 9-10/10)	28%	
	Fairly interested (i.e. 7-8/10)	33%	
	Marginal interest (i.e. 5-6/10)	18%	
	Not very interested (i.e. 3-4/10)	6%	
	Not at all interested (i.e. 0-2/10)	13%	
	Don't know	2%	

(II) GARDENING

G1	**Which of the following, if any, does your household have? Tick all that apply.** Base: Those with full or shared responsibility for gardening in their household (2,580)		
	Plants in pots or hanging baskets	70%	
	Plants in borders	72%	
	Lawn	79%	
	Green house	20%	
	A vegetable plot	29%	
	None of these	4%	

G2	**In a typical summer month how often, if at all, do you or someone else in your home water these parts of your garden?** Base: Those with full or shared responsibility for gardening in their household and have each element in their garden (figures shown below)									
Base:		More than once a day	Once a day	Every couple of days	A couple of days a week	Once a week	Once a fortnight	Once a month	Less often than once a month	This never gets watered
(1,795)	Plants in pots / hanging baskets	4%	37%	30%	14%	8%	2%	1%	2%	1%
(1,853)	Plants in borders	1%	13%	19%	17%	17%	6%	4%	11%	12%
(2,036)	The lawn	*	3%	5%	5%	9%	6%	5%	15%	51%
(519)	Plants in the green house	11%	45%	22%	9%	6%	1%	1%	1%	3%
(744)	The vegetable plot	3%	27%	25%	19%	12%	4%	2%	4%	4%

G3	**Which of the following, if any, do you use to water your garden? Tick all that apply.** Base: Those with full or shared responsibility for gardening in their household and water their garden (2,264)		
	A water butt or other device to collect rain water	42%	
	A watering can using water from the tap	62%	
	Left over water e.g. from washing dishes, the bath	21%	
	A hose connected to a tap	49%	
	A sprinkler	8%	
	An irrigation system	3%	
	Other (please write in)	2%	

G4	**Compared to other households like yours (e.g. with a similar sized garden), do you think the amount you water the garden is…** Base: Those with full or shared responsibility for gardening in their household and water their garden (2,264)		
	…well above average	1%	
	…slightly above average	10%	
	…about average	42%	
	…slightly below average	25%	
	…well below average	17%	
	Don't know/no idea	5%	

G5	**Why do you say [above average/average/below average]? Please write in.** Base: Those with full or shared responsibility for gardening in their household, water their garden and give an opinion at G4 – TOP 5 REASONS					
	Think they're above average (253)		Think they're about average (958)		Think they're below average (976)	
	Compared to neighbours	20%	About the same as neighbours	33%	Compared to neighbours	22%
	Have more/lots of plants	13%	Only water when needed	19%	Don't water lawn / plants often	22%
	Have a vegetable plot/greenhouse	13%	That's just what I think/assume average	19%	Don't have many plants	9%
	Because I do / water often	12%	Try to save / don't waste water	6%	Only water when needed	9%
	Care for my garden	8%	Depends on weather	3%	Try to save / don't waste water	6%
	Large garden	8%	Small garden	3%	Small garden	6%

G6	**How interested are you personally in learning and / or knowing more about gardening issues and plants?** Base: Those with full or shared responsibility for gardening in their household and water their garden (2,475)		
	Very interested	21%	
	Fairly interested	46%	
	Not very interested	25%	
	Not at all interested	8%	

G7	**How much effort do you go to in terms of gardening itself (e.g. tending the lawn and plants)?** Base: Those with full or shared responsibility for gardening in their household and water their garden (2,475)		
	A great deal	13%	
	A fair amount	42%	
	A little	29%	
	Not very much	15%	
	None at all	2%	

(III) WASHING DISHES

W1	**Thinking about how you do the washing up in your household, which of the following is the best description?** Base: Those with full or shared responsibility for washing up in their household and have a dishwasher (1,653)		
	All of the dishes are washed by hand	6%	
	Most of the dishes are washed by hand, and sometimes in the dishwasher	15%	
	Roughly half of the dishes are washed by hand, and half in the dishwasher	11%	
	Most of the dishes are washed in the dishwasher, and sometimes by hand	52%	
	All of the dishes are washed in the dishwasher	16%	
	I don't know	*	

W2	**In a typical week (i.e. 7 days) how many times do you usually use the dishwasher? Please write in a number or choose one of the other answers** Base: Those with full or shared responsibility for washing up in their household and have a dishwasher that they use (1,547)		
	Average number of washes per week	4.4	
	Less than once a week	8%	
	I don't know	1%	

W3	**How long have you had your current dishwasher?** Base: Those with full or shared responsibility for washing up in their household, have a dishwasher that they use (1,531)		
	Less than 1 year	10%	
	1-2 years	22%	
	3-4 years	32%	
	5-10 years	27%	
	More than 10 years	7%	
	Don't know / can't remember	3%	

W4	**Which of the following statements best describes how you use the dishwasher?** Base: Those with full or shared responsibility for washing up in their household, have a dishwasher that they use (1,531)		
	According to a set routine - the dishwasher typically goes on at a similar time in the day / day of the week	23%	
	There is some routine, e.g. the dishwasher is more likely to go on at the weekend	12%	
	Not according to a routine - the dishwasher goes on whenever it is needed	64%	

W5	**Out of every 10 dishwasher loads, how many of each of the following would you typically do?** Base: Those with full or shared responsibility for washing up in their household, have a dishwasher that they use and know how often (1,531)		
		AVERAGE TOTAL OUT OF 10	
	A full load (100%)	8.2	
	A quite full load (e.g. 80%)	1.5	
	A half full load (e.g. 50%)	0.3	
	A smaller load (e.g. just a few items)	0.1	

W6	**We would now like to ask you about the settings that you use on your dishwasher. Firstly about the setting(s) that you use frequently; and then secondly about any settings that you use less frequently / occasionally** Base: Those with full or shared responsibility for washing up in their household, have a dishwasher that they use (1,531)			
		Use frequently	Use occasionally	
	30 degrees	5%	3%	
	40 degrees	12%	6%	
	50 degrees	14%	6%	
	60 degrees	19%	9%	
	70 degrees	5%	6%	
	Eco-wash	29%	5%	
	Quick-wash	17%	16%	
	Something else (write in)…….	7%	3%	
	Don't look at the setting, just turn it on	15%	17%	
	Don't know	6%	8%	
	None	=	29%	

W7	**Compared to other households like yours (e.g. the same size/number of people), do you think that the number of times you use the dishwasher is…?** Base: Those with full or shared responsibility for washing up in their household, have a dishwasher that they use and know how often (1,531)		
	…well above average	2%	
	…slightly above average	9%	
	…about average	49%	
	…slightly below average	19%	
	…well below average	12%	
	Don't know / no idea	8%	

(IV) BATHING/SHOWERING

S1a	**In a typical week (i.e. 7 days) how many times do you shower <u>at home</u> (without washing your hair)? If you do this every fortnight then please write in 0.5; if you do this about once a month then please write in 0.25, and if you do this less often than once a month then please write 0.1. If you <u>never</u> do this please write in 0.** Base: All (4,011)		
	Never	56%	
	Less than once a week	2%	
	1-3	21%	
	4-5	13%	
	6-7	8%	
	8+	1%	
	Average (all)	*1.6*	
	Average (those who take showers without washing hair)		

S1b	**In a typical week (i.e. 7 days) how many times do you shower <u>at home</u> (including washing your hair)? If you do this every fortnight then please write in 0.5; if you do this about once a month then please write in 0.25, and if you do this less often than once a month then please write 0.1. If you <u>never</u> do this please write in 0.** Base: All (4,011)		
	Never	17%	
	Less than once a week	3%	
	1-3	41%	
	4-5	17%	
	6-7	20%	
	8+	2%	
	Average (all)	*3.2*	

S1a + b	**In a typical week (i.e. 7 days) how many times do you shower <u>at home</u>? If you do this every fortnight then please write in 0.5; if you do this about once a month then please write in 0.25, and if you do this less often than once a month then please write 0.1. If you <u>never</u> do this please write in 0.** Base: All (4,011)		
	Never	13%	
	Less than once a week	2%	
	1-3	21%	
	4-5	18%	
	6-7	37%	
	8+	9%	
	Average (all)	*4.7*	

S1c	**In a typical week (i.e. 7 days) how many times do you take a bath <u>at home</u>? If you do this every fortnight then please write in 0.5; if you do this about once a month then please write in 0.25, and if you do this less often than once a month then please write 0.1. If you <u>never</u> do this please write in 0.** Base: All (4,011)		
	Never	48%	
	Less than once a week	9%	
	1-2	25%	
	3-4	8%	
	5+	11%	
	Average (all)	*1.4*	

S2	**Typically, how full will you have the bath when you have one?** Base: Those who have baths (2,095)		
	To the top	8%	
	About 3/4 full	39%	
	About 1/2 full	39%	
	About 1/4 full	11%	
	Just a few inches	3%	

S3	**Does anyone share your bath water?** Base: Those who have baths (2,095)		
	No, It's only me who uses my bath water	77%	
	Yes, someone uses my bath water before/after me	23%	

S4	**How would you describe the amount of time you typically spend in the shower?** Base: Those who have showers		
		a) Shower excluding washing your hair (1,789)	b) Shower including washing your hair (3,315)
	I'm in and out	16%	4%
	I shower quite quickly	59%	44%
	I spend a reasonable amount of time in the shower	21%	41%
	I spend quite a long time in the shower	3%	9%
	I spend a long time in the shower	*	2%

S5	**How long would you say you spend, on average, in the shower? Please write in the number of minutes** Base: Those who have showers		
		a) Shower excluding washing your hair (1,789)	b) Shower including washing your hair (3,315)
	0-4 minutes	28%	11%
	5-7 minutes	39%	30%
	8-10 minutes	22%	30%
	11-15 minutes	7%	16%
	16+ minutes	5%	13%
	Average time spent in the shower	7.1	10.4

S6	**Do you know if your shower is a power shower?** Base: Those who have showers (3,424)		
	It is a power shower	31%	
	It is not a power shower	58%	
	Not sure / don't know	11%	

S7	**Thinking now about your household as a whole, and compared to other households like yours (e.g. with the same number of people), do you think the time you spend in the shower is…?** Base: Those who have showers (3,424)		
	…well above average	2%	
	…slightly above average	11%	
	…about average	52%	
	…slightly below average	19%	
	…well below average	6%	
	Don't know / no idea	10%	

SECTION 3: MESSAGE TESTING I – HOUSEHOLD PRACTICES & NORMS

SHOWERING & BATHING

	We are now going to show you some information about showering, baths and taps, and then ask you some questions about each of them. Please tell us: 1) Have you heard this before or is the first time you have heard this? 2) How believable do you think this information is? 3) How likely is it that you would change what you currently do if you heard/saw this information				
		Heard before	**Very/fairly believable**	**Score 7+/10 on likelihood of change**	**Mean average Likelihood of change (out of 10)**
A	Quicker, cooler showers are better for the health of your hair and skin	29%	56%	27%	4.5
B	Scientists have found that long, hot showers dehydrate your skin; so make it speedy and lukewarm for a youthful complexion	18%	59%	31%	4.8
A	The average person showers for 4 minutes. Do you? Take the challenge	15%	51%	24%	4.1
B	The average person showers for 4 minutes. Do you? Cutting the length of time in the shower helps to save water. Take the challenge	28%	68%	34%	5.0
A	By reducing your average shower time by two minutes you could save around 5000 litres of water a year	21%	72%	37%	5.1
B	By reducing your average shower time by two minutes you could save around £20 a year off your bills	21%	74%	38%	5.2
A	New 'air showers' that mix air into the water keep your shower powerful and could save the average household £100 per year on their bills	13%	55%	50%	6.0
B	Buy an aerated showerhead – by mixing air in with the water you get the same shower pressure and save water.	23%	67%	46%	5.9
A	A dripping tap could end up costing you over £18 per year (full sample: 2,006)	50%	84%	51%	6.0
B	A dripping tap can waste 5,500 litres of water a year: enough to fill a paddling pool every week for the whole summer (full sample: 2,005)	42%	79%	46%	5.8

Base: All who have showers (3,480); split between Sample A (1,734) and Sample B (1,746)

LAUNDRY & DISHES

	We are now going to show you some information about laundry and dishes, and then ask you some questions about each of them. Please tell us: 1) Have you heard this before or is the first time you have heard this? 2) How believable do you think this information is? 3) How likely is it that you would change what you currently do if you heard/saw this information				
		Heard before	**Very/fairly believable**	**Score 7+/10 on likelihood of change**	**Likelihood of change (out of 10)**
A	A full washing load uses less water and energy than two half loads. Put your hand in and make a fist, if you're touching the top of the drum and the top of the laundry then you've filled it perfectly! (1,572)	27%	85%	50%	6.0
B	A full washing machine load uses less water and energy than two half loads (1,550)	54%	89%	52%	6.1
A	The majority of people wear their jeans at least 10 times before washing them (1,251)	10%	58%	27%	4.4
B	Don't ruin your clothes by over-washing them. Jeans that are washed after every wear will wear out 5 times faster (1,215)	32%	86%	47%	5.8
A	Ever feel like a slave to the washing machine? There's no need to wash items like towels after a single use. Most households use them for a fortnight before washing them (1,572)	21%	61%	29%	4.4
B	Ever feel like a slave to the washing machine? There's no need to wash items like towels after a single use. Most households use them for at least a week before washing them (1,550)	46%	83%	41%	5.3
A	Give your eco button a try! It saves water, electricity, money and time and gets your clothes just as clean (1,572)	48%	70%	42%	5.5
B	Some households are wasting water and electricity by using the same setting without thinking. Give your eco button a try! It saves water, electricity, money and time and gets your clothes just as clean (1,550)	54%	84%	49%	6.0
	According to a recent study modern efficient dishwashers often use less water than washing the dishes by hand (2,006)	44%	59%	31%	4.5
	Clothes not really dirty and just need a freshen -up? Use a short wash cycle to save water and energy (1,550)	64%	89%	50%	6.1

Base: All with appropriate responsibility, split between Sample A and Sample B as shown above

GARDENING

We are now going to show you some information about gardening, and then ask you some questions about each of them. Please tell us:
1) Have you heard this before or is the first time you have heard this?
2) How believable do you think this information is?
3) How likely is it that you would change what you currently do if you heard/saw this information

	Heard before	Very/fairly believable	Score 7+/10 on likelihood of change	Likelihood of change (out of 10)
Don't water the garden with tap water – get a water butt and use natural rainwater	85%	92%	44%	5.9
Leave plants and shrubs dry until they show signs of wilting – watering too often can mean the roots stay too shallow	40%	69%	36%	5.4
A water sprinkler in the garden can use as much water in one hour as a typical family of four uses in a day	49%	87%	38%	5.0
Watering your plants early in the morning or in the evening reduces evaporation and is more effective than watering at other times in the day	78%	90%	46%	6.2
As the climate changes so will the plants in your garden. Some traditional plants will struggle with less water so keep your garden looking good by choosing drought-tolerant plants	53%	80%	39%	5.7

Base: Those with full or shared responsibility for gardening (2,580)

SECTION 4: BILLS

B1	**a) How much attention do you pay to the electricity bill when it arrives in the post/online?** **b) How much attention do you pay to the water bill when it arrives in the post/online?** Base: All (4,011)		
		(a) Electricity	(b) Water
	A great deal	35%	25%
	A fair amount	33%	29%
	A little / glance at it	14%	18%
	Not very much	6%	12%
	None at all – I don't look at the bill	2%	5%
	Someone else in the home deals with the bill	8%	10%
	Don't know	1%	2%

B2a	**On the electricity bill how much attention do you pay to the following information?** Base: Those who pay attention to the electricity bill (3,258)						
		A great deal	A fair amount	A little / glance at it	Not very much	None at all	Don't know
	The cost	67%	25%	6%	1%	*	*
	The amount of energy used	31%	36%	21%	9%	3%	*
	Additional leaflets / information	9%	18%	32%	25%	15%	1%

B2b	**On the water bill how much attention do you pay to the following information?** Base: Those who pay attention to the water bill (2,869)						
		A great deal	A fair amount	A little / glance at it	Not very much	None at all	Don't know
	The cost	62%	27%	9%	1%	*	*
	The amount of water used	28%	30%	20%	9%	8%	4%
	Additional leaflets / information	11%	19%	33%	21%	15%	1%

B3	**a) How much effort do you go to reduce the amount of electricity you use in the home?** **b) How much effort do you go to reduce the amount of water you use in the home?** Base: All (4,011)		
		(a) Electricity	(b) Water
	A great deal of effort	22%	18%
	A fair amount of effort	41%	35%
	Some effort	30%	32%
	Not much effort	6%	12%
	No effort at all	1%	3%

B4	**Do you have a water meter fitted at your home?** Base: All (4,011)		
	No	52%	
	Yes - it was already installed when I/we moved in	23%	
	Yes - I/we asked the water company to install it	17%	
	Yes - the water company made it compulsory and installed this	3%	
	Don't know	5%	

SECTION 5: MESSAGES II (THE WIDER CONTEXT/NARRATIVE)

M4a	**On a scale of 0-100 (where 0 = not at all necessary and 100 = extremely necessary), how necessary do you think it is for households in England to go further to reduce the amount of water they use? Please slide the pointer along the bar.** **You will now see some statements about water. Please indicate, by sliding the pointer along the bar, whether any of the statements change what you think. If they do not change what you think then just leave the pointer where it is.** **SPLIT SAMPLE A (2,006)**		
	STARTING SCORE	70.1	
		Impact when appears as first statement	Ave. movement
A	In England we have less water available per person than most other European countries because of the density of the population.	-4.6	-1.9
B	Droughts in the UK are likely to become more commonplace while at the same time more intense rainfall will increase the chance of flooding. If we do not act the security of our water supplies could be compromised.	-2.8	+1.7
C	The average person in England and Wales uses 150 litres of water a day, around 50% more than 25 years ago. By 2020 the demand for water could increase by 800 million extra litres of water a day.	-0.9	+1.0
D	In many developing countries water consumption is as low as 20 litres per day per person. In the UK it is 150 litres per day per person.	-3.4	-2.2
E	Water use is also linked to energy - domestic water heating is responsible for 5% of UK CO2 emissions, and makes up around 25% of your household energy bill. A typical family of four could save about £100 a year on their bills simply by reducing each shower length by one minute.	+0.4	+1.1
	FINISHING SCORE		69.8
	Cumulative impact of 5 statements		**-0.3**

M4b	**On a scale of 0-100 (where 0 = not at all necessary and 100 = extremely necessary), how necessary do you think it is for households in England to go further to reduce the amount of water they use? Please slide the pointer along the bar.** **You will now see some statements about water. Please indicate, by sliding the pointer along the bar, whether any of the statements change what you think. If they do not change what you think then just leave the pointer where it is.** **SPLIT SAMPLE B (2,005)**		
	STARTING SCORE	71.1	
		Impact when appears as first statement	Ave. Movement
A	The UK is not an exceptionally wet country. London, for example, has around the same average rainfall as Barcelona.	-10.1	-7.1
B	Increasing consumption, together with a growing number of households, has put pressure on water supply in England and it is likely that this problem will worsen with climate change. If we do not act the security of our water supplies could be compromised.	+0.1	+3.2
C	The average person in England and Wales uses 150 litres of water a day, around 50% more than 25 years ago. By 2020 the demand for water could increase by over 300 full Olympic swimming pools per day.	-0.7	+1.0
D	Even if a family of four, with an average sized house, could collect every single drop of rain that fell on them in a year- they could still only collect ½ the amount of water they would typically use in a year.	-7.3	-1.3
E	Water use is also linked to energy. Treating waste water and supplying our homes with clean, drinkable, water creates five million tonnes of greenhouse gas emissions.	+0.9	+1.7
	FINISHING SCORE		68.4
	Cumulative impact of 5 statements		**-2.7**

M5a	**Thinking back to the situation earlier in the year leading up to the introduction of hosepipe restrictions in many parts of England, on a scale of 0-10 please tell us how well you think each of the following describe that situation? 0 = does not describe it well at all; 10 = describes it very well** **SPLIT SAMPLE A (2,006)**		
	The country was experiencing a drought	Average score out of 10	6.5
	The country was experiencing a period of water stress	Average score out of 10	6.5
	The country was experiencing a period of water shortages	Average score out of 10	6.7
	The country was exceptionally dry	Average score out of 10	6.1

M5b	**Thinking back to the situation earlier in the year leading up to the introduction of hosepipe restrictions in many parts of England, on a scale of 0-10 please tell us how well you think each of the following describe that situation? 0 = does not describe it well at all; 10 = describes it very well** **SPLIT SAMPLE A (2,005)**		
	The country was experiencing a serious drought	Average score out of 10	6.1
	The country was experiencing a period of extreme water stress	Average score out of 10	6.3
	The country was experiencing a period of extreme water shortages	Average score out of 10	6.0
	The country was exceptionally dry	Average score out of 10	5.9

M6	**Which one or two of the following, if any, do you think is the most effective message to encourage people to save water?** SELECT 2. Base: All (4011)		
	It's time to start thinking water	5%	
	Use water wisely	26%	
	It's easier to save water than you might think	19%	
	Don't pour your money down the drain	44%	
	Every drop counts	27%	
	Saving water today will ensure it will also be there tomorrow	28%	
	Time to start thinking water – you wouldn't want to collect your own	17%	
	None of these	2%	
	Something else (write in)….	2%	
	Don't know	4%	

DEMOGRAPHICS

D1	**Age**			
	18-24	12%		
	25-34	17%		
	35-44	18%		
	45-54	18%		
	55-64	15%		
	65-74	17%		
	75+	3%		

D2	**Gender**		
	Male	49%	
	Female	51%	

D3	**Work status**		
	Working full time	44%	
	Working part time	12%	
	Unemployed but looking for a job	5%	
	Unemployed and not looking for a job	3%	
	Retired	24%	
	Homemaker	8%	
	Student	4%	

D4	**English GO Region**		
	South West	10%	
	South East	16%	
	London	14%	
	West Midlands	10%	
	East Midlands	9%	
	Eastern	11%	
	North West	14%	
	Yorks & Humber	11%	
	North East	5%	

D5	**Adults in household**		
	1	22%	
	2	56%	
	3	13%	
	4	7%	
	5+	2%	

D6	**Children in Household**			
	AGES	0-4	5-10	11-17
	0	88%	85%	83%
	1	9%	11%	11%
	2	2%	4%	5%
	3+	*	*	1%

D7	**Household income**		
	Less than £10,000	9%	
	Between £10,001 and £20,000	22%	
	Between £20,001 and £30,000	19%	
	Between £30,001 and £40,000	15%	
	Between £40,001 and £50,000	10%	
	Between £50,001 and £70,000	10%	
	Between £70,001 and £90,000	3%	
	More than £90,000	3%	
	I'd prefer not to say	10%	

D8	**Tenure**		
	Own the home outright	33%	
	Own the home on a mortgage	35%	
	Rent - from a private landlord	13%	
	Rent - from the council or a Housing Association	13%	
	Live with parents	5%	
	University accommodation	*	
	Other	1%	

D9	**Property type**		
	Detached house	18%	
	Semi-detached house	32%	
	Terraced house	24%	
	Flats – purpose built	13%	
	Flat – converted from house	5%	
	Bungalow	7%	
	Other	1%	

D10	**Environmental status**		
	I am very environmentally friendly	12%	
	I am fairly environmentally friendly	53%	
	I am environmentally friendly in one or two things	28%	
	I'm not very environmentally friendly	5%	
	I'm not environmentally friendly at all	2%	

Appendix 4 – Agenda and attendees to the knowledge transfer workshop

Knowledge sharing workshop: "Testing water efficiency messaging and household motivations"

19th November 2012, Coin Street neighbourhood centre, 108 Stamford Street, South Bank, London SE1 9NH

AGENDA

9:30	Registration
10:00	Welcome by Defra
10:05	Presentations: – Icaro Consulting / Ipsos MORI – Thames Water – Waterwise
11:00	Q&A
11:15	Break
11:30	Roundtable discussion I
12:30	Feedback and summary
12:45	Lunch
13:30	Roundtable discussion 2
14.15	Summary and wrap-up
14:30	Close

List of attendees

Heather Aitken	Thames Water
Suzanne Allery	Portsmouth Water
Thomas Andrewartha	Northumbrian Water
Ian Bernard	British Water
Andy Blackhall	Dwr Cymru Welsh Water
Patric Bulmer	Bristol Water
Joseph Burgoyne	AEA
Sara Butler	Ipsos MORI
Doug Clarke	Severn Trent
Lee Davies	Defra
Natan Doron	Fabian Society
Phil Downing	Icaro Consulting
Ben Earl	B&Q
Nick Ellins	Water UK
Matt Evans	Ipsos MORI
Anne Foreshaw	WRAP
Karen Gibbs	Consumer Council for Water
David Grantham	Thames Water
John Griggs	Chartered Institute of Plumbing and Heating Engineering
David Harrison	Sembcorp Bournemouth Water
Cath Hassell	ech2o
Penny Hodge	Southern Water
Claire Hoolohan	Lancaster University
Dani Jordan	Waterwise
Lutz Johnen	UK Rainwater Harvesting Association
Hans Jenson	UKWIR
Ed Langley	Ipsos MORI
Ian Limb	Portsmouth Water
Anna Lorentzon	Defra
Graham Lott	Defra
Greg Lucas	WRAP
Anna MacKenzie	Lancaster University
Alison Maydom	Defra
Ian McAthy	Veolia Water South East
Alison Murphy	Sutton and East Surrey Water
Ciaron Nelson	Anglian Water
Yvonne Orgill	Bathroom Association
Tim Pollard	Wolseley UK
Alex Plumb	Icaro Consulting
Chris Preston	Defra
Liz Pryke	Anglian Water
Kathryn Rathouse	Kathryn Rathouse Social Research
Mike Robey	WRAP
Anka Robins, Icaro	Icaro Consulting
John Rumble	Hertfordshire County Council

Nicci Russell	Waterwise
Martin Shouler	Arup
Karen Simpson	Thames Water
Carmen Snowden	WRC
Maxine Stiller	United Utilities
Lucia Susani	Environment Agency
Kathy Thornton	Wessex Water
Alan Turner	Kent County Council
Andrew Tucker	Energy Savings Trust
Lucy Lee	WWF
Frank Trentmann	Birbeck College UCL
Laura Underwood	WRAP
Angela Wallis	Environment Agency
Robert Wynn	South West Water

Appendix 3 – Summary of the opportunities for partnership working

The workshop was part on an on-going process of engagement and discussion between stakeholders with an interest in water efficiency. A specific objective of the day was to identify ways in which stakeholders can work in partnership going forward.

In that spirit, this note summarises the outcomes of the second set of Roundtable discussions held after lunch which focused on opportunities for partnership working around engaging consumers and developing messages to encourage water efficiency. It is presented in two parts – the first on specific opportunities that were cited; the second on more general ideas that were discussed.

Specific opportunity	**Discussed by**
Exploring the potential to work with partners and intermediaries to lend credibility to messages (e.g. local authorities / Env Agency / Defra).	John Clare, Anglian Water
Investigating contacts within the energy industry bodies to learn from their knowledge in relation to engaging customers on efficiency.	Patric Bulmer, Bristol Water
Potential to engage plumbers and heating engineers at point of sale re increasing sales of water efficient products.	Tim Pollard, Wolseley
Thames Water is running some usage trials in early 2013 and will allow them to track the impact of successive waves of communications on actual usage. Thames welcomes ideas for the different types of communications that they could test.	Karen Simpson, Thames Water
Severn Trent is in discussions with Unilever about a joint research collaboration.	Doug Clarke, Severn Trent
Anglian Water is undertaking work to develop guidance on how to work with different partners and intermediaries.	Liz Pryke, Anglian Water
Opportunities to build on the Southern Water–B&Q relationship model re Sutton.	Ben Earl, B&Q; Penny Hodge, Southern Water
Water UK is undertaking an initiative to engage professional gardeners and other tradespeople.	Nick Ellins, Water UK
CIPHE and WRAP have already agreed to meet to talk about how they can work together. Likewise, Kathryn Rathouse and Cath Hassell have agreed to meet to share information and ideas (particularly from United Utilities '3 Ps' campaign).	

General ideas of interest

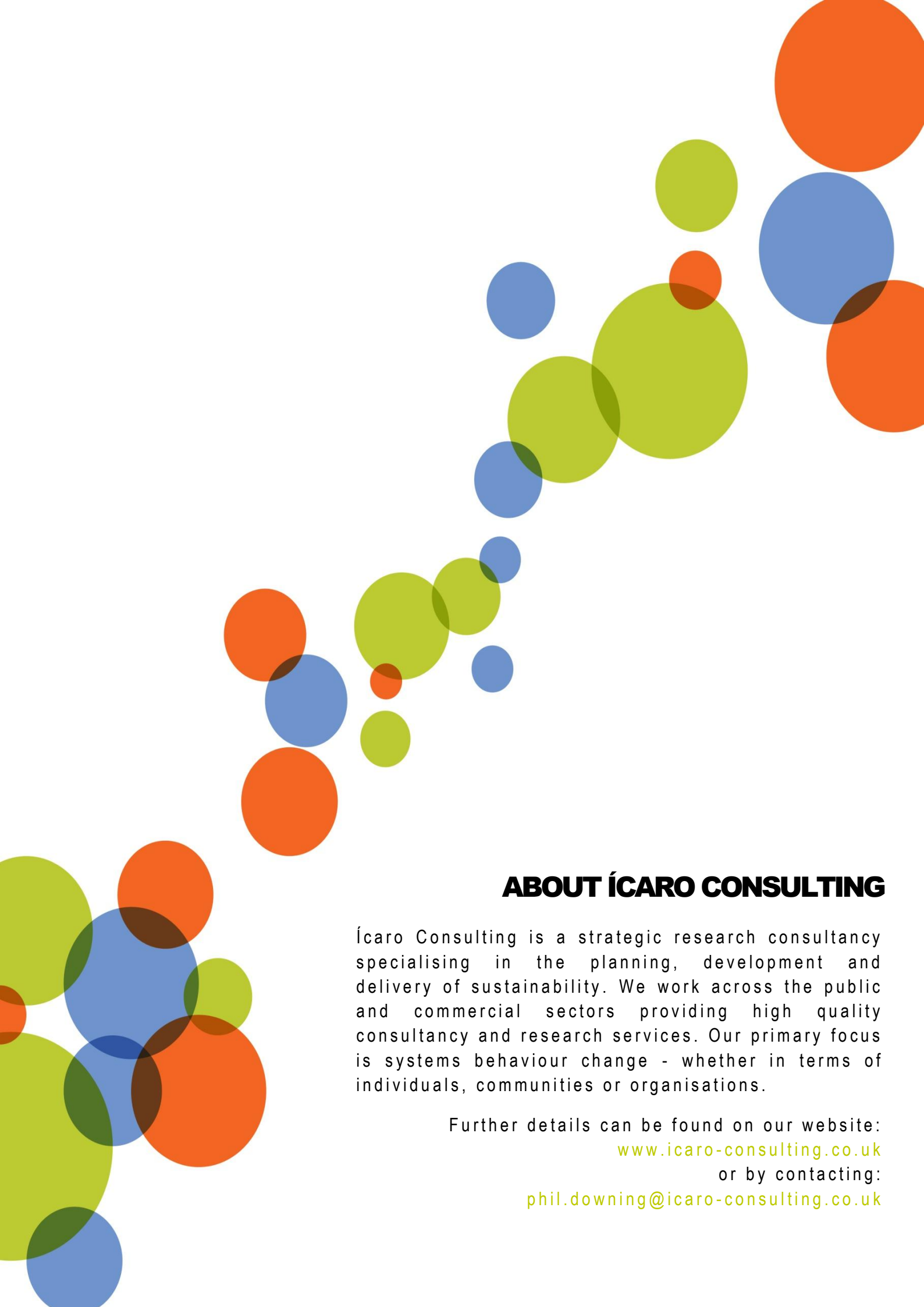
Call for central mechanism for sharing research findings, i.e. to share knowledge more widely, avoid duplication and identify new areas of research.

Call for partnerships with retailers and manufacturers who would become the vehicle for messaging around water efficiency, (i.e. bathroom products at point of sale; on the label for cloths; on the instructions for e.g. laundry or personal hygiene products).

Call for partnership working with special interest groups, NGOs and media – e.g. Ideal Home magazine; gardening groups, National Trust.

A wider (national) education campaign on the need for water efficiency, e.g. why water should be valued, the challenge of water stress and the more fundamental basics of the water cycle.

A better understanding of approaches to segmentation and the implications for targeting messaging at specific groups (whether by communities of geography or communities of interest). It was noted that some water companies (e.g. Severn Trent) have done work in this area and there was a desire to know more.



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Ícaro Consulting is a strategic research consultancy specialising in the planning, development and delivery of sustainability. We work across the public and commercial sectors providing high quality consultancy and research services. Our primary focus is systems behaviour change - whether in terms of individuals, communities or organisations.

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