Recycling in real life

Ethnographic research with residents of purpose-built flats in London

Resource London

Contents

This is a Resource London project (RCY135-001) investigating the barriers to recycling in purpose-built flats in London. Resource London is a partnership between the London Waste and Recycling Board (LWARB) and WRAP.

This report was written in March-April 2018 by Revealing Reality, the research agency commissioned by Resource London to carry out the research. Fieldwork took place between January and March 2018.

Executive summary

Background

Recycling performance in purpose-built flats in London has been identified as a key target area in order to contribute to achieving London and national recycling targets. *Resource London* is working in partnership with a housing association in eight London Boroughs to design interventions to increase recycling. The purpose of this ethnographic research was to get below the surface of the barriers to recycling that are routinely reported by residents, to fully understand the possibilities for change from a resident-centred focus, and to inform the design of interventions to increase recycling.

Approach and methodology

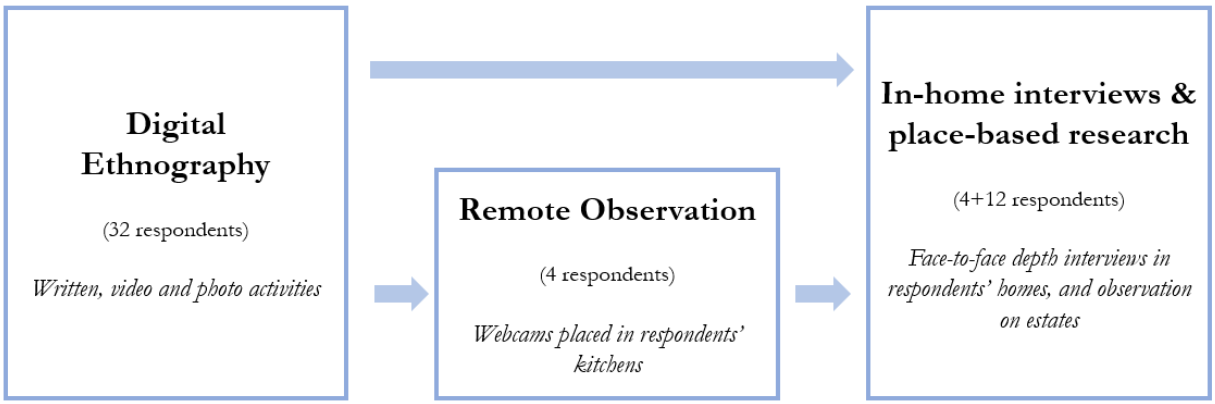
This was a qualitative, ethnographic research project. This approach is based on building a strong understanding of people's home environments, relationships and life priorities, and therefore placing what they say and do in the context of their wider lifestyle – making it more possible to uncover tensions, contradictions and insight into why they behave as they do. Qualitative research is not intended to be representative of the population – instead it is about gaining an understanding of the experience, process or sense-making of a group of people in an individual context, through drawing key themes and patterns out of the data.

The research consisted of three phases (see diagram). Respondents were not told the research was related to recycling until halfway through phase 3.

The first phase consisted of 32 respondents submitting written tasks, selfie videos and photos to the research team – giving the research team an insight into routines, household members and the physical set up of flats and estates. Four respondents then took part in the remote observation phase, which involved placing two webcams in respondents' kitchens for a duration of 1-2 weeks to observe their waste and recycling behaviours. Finally, 16 face-to-face interviews were completed, exploring people's attitudes toward their local area; relationships with different social groups; weekly routines; recycling practices and bin journeys, reflections on the communal bin area and knowledge of recycling.

The sample of 32 respondents, recruited via a free-find recruitment agency, covered a broad range of characteristics agreed with Resource London. Respondents lived in a range of household set-ups, lived within 7target inner-London boroughs, were a mix of private and social renters, had varying tenure lengths and represented a broad range of demographic characteristics including age, gender, employment status and ethnicity.

All respondent data has been anonymised and pseudonyms have been used throughout. Respondents gave informed consent for their data and images to be used.



Overarching themes

Findings from the research have been split into three key areas, with themes sitting under each, as set out below.

1. Rubbish routines

Environmental issues were on the mind of many respondents – but this didn't necessarily trickle down to practical recycling actions

- Many respondents saw recycling as a behaviour which has positive impact on the environment, but were often unable to articulate why
- Many respondents were not recycling at all, or were recycling inconsistently. People were sometimes carrying out other environmentally-friendly behaviours, which they sometimes used as justification for why they didn't recycle

Even committed recyclers show inconsistent recycling behaviour

- Some respondents were enthusiastic recyclers, and had strict routines about separating, rinsing and drying items
- Camera footage showed that even the most dedicated recyclers did not recycle all the time

Limited space leads to improvisations and innovative use of space

- Space within flats was limited and many people were using windowsills, tables and corners of rooms as overflow spaces for household items, including for food storage
- Most respondents did not have a designated recycling bin, instead using carrier bags or designated areas of their kitchens
- People commonly quoted lack of space as a reason for not having a recycling bin, although those who did find ways to recycle did not necessarily live in larger flats than those who didn't

Recycling left on display was not felt something to be proud of

- People were happier to leave certain waste items out on display than others e.g. glass bottles were seen to be cleaner and more decorative than items such as plastic trays which had food residue left on them). Recycling systems were often hidden away because they were seen as messy

The residual waste bin was seen as the 'normal' or 'default' bin

- When talking about waste, respondents used language such as "normal", "general" and "standard" to describe their residual waste
- There was also inconsistent language use on signage and communications around estates leaving residents confused, about how they should be referring to their waste and which type of waste should be placed where

Flat-dwellers saw the kitchen as the default space for recycling

- Residents were generally only associating recycling behaviour with their kitchen, and were not taking opportunities to gather recyclable items in other rooms
- Placement of bins in kitchens meant people did not have the visual prompt to recycle from other rooms
- When emptying their bins, respondents tended to amalgamate waste from other rooms with their residual waste

Respondents had differing limits of what was acceptable to touch

- People had differing disgust tolerance levels to certain food or packaging items
- Some respondents wanted to get rid of items as soon as their contents had been used, e.g. items which contained "gloopy" or "sticky" substances.
- By throwing these items in the residual bin, which often had a lid, they felt as if they had curtailed the possibility of the waste attracting flies or other pests
- Many had strategies for rinsing out packaging without touching it (e.g. washing up brushes, or holding it by the corner. And quickly rinsing)

Different tolerance levels to fullness of bins impacts frequency of taking the bins out

- Most respondents were only taking their bins out when they were full, or overfull, and it couldn't be ignored any more
- People in shared flats didn't generally feel individually responsible for emptying the bin

2. Place

People are choosing to transport recycling to the communal bin in carrier bags

- When recycling was stored loose in people's flats, they tended to use improvised or inconsistent receptacles, normally plastic bags, to transport their recycling
- Residents didn't want to return their improvised receptacle to their flat if they were leaving and so most were putting the whole plastic bag into the communal recycling bin

Proximity of the bin impacted whether people were willing to make return journeys (e.g. one-way vs two-way bin trips)

- A minority of residents made special trips to the communal recycling bins to take their waste out – mainly when the communal bins were close by and they didn't have to make any special preparations to go out
- The vast majority of residents saw special trips as a waste of time and energy

People wanted disposal of recycling to fit in with their efficient exit routes

- Respondents had preferred routes when leaving their estates, depending on their destination, which often involved back routes or cut-throughs.
- Respondents wanted to drop off their waste efficiently, with minimal interruption to their planned journey

People had no 'plan B' when their recycling plans were disrupted

- People expressed frustration that communal bins were often overflowing and there was no space for them to put their waste[1]
- They felt internal conflict about what was best to do in these situations, often resorting to using the incorrect bins or leaving rubbish on the ground

Communal bin areas were seen to be unsafe, dirty and not well looked after (on both private and social housing estates)

- Dark and uninviting communal bin areas made people feel uneasy
- Anti-social behaviour that they had observed on some estates deterred respondents from spending much time in communal areas
- People wanted to move away from the communal bin area as quickly as possible, and were therefore acting impulsively and not taking time to consider what they were doing with their waste

Frustration can weaken commitment to recycling

- Regularly feeling that their recycling efforts were wasted could significantly impact a respondent's motivation to carry on recycling
- Respondents were frustrated with collection teams who they felt did not empty the bins regularly enough and also at other residents who seemed to disregard the rules
- Many respondents' good intentions and habits dropped off

People don't feel accountable for what they put in communal bins

[1] Researchers independently observed that communal bins were often full or obstructed. This was also supported by findings from the social housing estate inventories conducted alongside this research.

- Limited activity around communal bins, coupled with the knowledge that large volumes of people used each bin, led people to feel anonymous and unaccountable
- Respondents didn't feel like their behaviour was monitored – this was exacerbated by the lack of feedback and repercussions they saw for contamination or fly-tipping

People don't see communal bins as something to look after

- There was little sense of individual responsibility to maintain the bin area.
- Respondents attributed upkeep of bins to their landlord, council or waste collection team
- They often blamed other residents for making the area unclean, whether they saw this directly or not

People didn't perceive themselves as having a role in the waste collection system

- The majority of respondents were unsure when or how their communal bins were emptied and were not using 'collection day' as a prompt to take their rubbish down
- They didn't see how their actions fitted in with the wider recycling system

Physical limitations make recycling more problematic

- People were often carrying multiple items with them when they left the estate which restricted their ability to carry waste too
- Some respondents complained of small openings on bins and felt forced to open up lids entirely, which could be a struggle

3. Communications and influencers

Some respondents had recycled more effectively in the past – or in different scenarios

- Many respondents reported having had periods where they had been encouraged by recycling 'role models' (e.g. previous flatmates, family or work colleagues)
- Many respondents had an effective recycling system at work and, sometimes, this behaviour was brought home

Most people did not have close relationships with their neighbours

- The majority of respondents were not invested in relationships with their neighbours
- There was sometimes tension between neighbouring households, due to noise complaints or conflict over communal spaces.

People did not generally perceive their neighbours to be good recyclers

- People did not talk to their neighbours about recycling and therefore had no idea what their waste management routines were
- Some people saw the indirect results of their neighbours' actions (e.g. the contents of communal bins) which made them sceptical about other people's recycling behaviour

Residents and their tenants' associations could be effective champions, however current efforts can be ineffective or even antagonistic

- Those who were engaged with their tenants' associations did not have the best of relationships with them, citing lack of proactivity and a fear of raising complaints
- Lack of responsiveness from landlords meant that residents were unlikely to listen to guidance from them

People don't regularly re-appraise their waste management strategies, although there are a few key moments where people are more reflective

- Long-term residents were less likely to reflect on their recycling behaviours
- Reflective moments included new kitchens being fitted, changes in estate cleaners and transferring between estates
- People were more open to new information or routines when they first moved in (e.g. when buying household products or exploring their estate)

In shared flats, there is a tension between undermining each other's recycling and learning from each other

- Some respondents were having conversations with their flatmates about the distribution of

chores or introducing more formal cleaning rotas (although these often fell by the wayside)
- These household systems occasionally caused tension between household members – sometimes flatmates were deliberately undermining each other's recycling efforts

Most people found information about recycling complex, hard to digest and difficult to remember

- Few respondents could recall receiving information about recycling and were unlikely to go through information if it looked complex or overwhelming
- Information from different channels was perceived to be contradictory (e.g. between bins, bags and leaflets)
- Although people were generally aware that recycling instructions on packaging existed, few people were consistently checking if they were unsure

Most people are still guessing or relying on common sense to know what is recyclable

- People feel like they 'just know' what is recyclable but are unable to explain where this knowledge comes from
- 'Rules of thumb' included stories they had heard and heuristics for categorising waste based on physical characteristics of different items (e.g. thickness and weight)
- People rarely investigate when they are unsure

People often assume it's about how much you recycle, rather than how well

- People often adopted an "if in doubt, recycle" policy, meaning they were often contaminating bins
- 'Contamination' was not a phrase they had heard of before, and people didn't see themselves as being 'contaminators'

There are many rumours about what happens to recycling (or not) which can undermine individual motivation

- No respondents could confidently articulate what happened to their recycling once it was collected from their estate
- Many residents had great faith in recycling being "sorted out further down the line" which meant they were far less stringent in their recycling behaviours
- Rumours such as collection teams 'mixing up the recycling anyway' had never been disputed, and were therefore continually lingering in people's minds

Conclusion & opportunities

There are many reasons why people do not recycle effectively.

Many of the respondents wanted to recycle but either had incorrect or insufficient knowledge about how to do so correctly and / or were undermined because it was not sufficiently easy.

What these findings suggest is that in order for people in purpose-built flats to recycle, three conditions must be satisfied:

1. They must be motivated to do so
2. They must have the correct knowledge to do so
3. It must be sufficiently easy for them to do so

These conditions are interdependent. If any one or more of them is not met, it will undermine the other two.

Tackling all three of them as a system represents a huge opportunity to improve recycling, with stakeholders potentially able to take responsibility for the conditions over which they have greatest influence.

Within each of these areas, there are numerous opportunities for interventions that will help strengthen an individual's motivation, knowledge or the ease with which they can recycle. These are set out in the conclusions section at the end of this report.

Background to the research

Context and objectives

Recycling performance in purpose-built flats in London has been identified as a key target area in order to contribute to achieving London and national recycling targets. Despite a large amount of research on recycling behaviour, there is limited research specifically focusing on residents who live in purpose-built flats with communal recycling bin facilities. Resource London is working in partnership with a housing association in eight London Boroughs (Camden, Hackney, Hammersmith and Fulham, Islington, Kensington and Chelsea, Lambeth, Tower Hamlets and Westminster) to design interventions to increase recycling.

In 2015, WRAP conducted their Dense Urban recycling research and Resource London their exploratory ethnographic research in London with 18-34 year olds. The current research builds on these findings and expands the evidence base on recycling in both social and privately rented flats.

This research is a resident-centred, highly in-depth exploration of the opportunities to improve recycling in purpose-built flats. The purpose was to get below the surface of the barriers to recycling that are routinely reported by residents (for example, in WRAP's 2015 Dense Urban research[2]), to fully understand the possibilities for change from a resident-centred focus, and to inform the design of interventions to increase recycling.

Specific objectives included:

- Understanding how waste management routines fit into everyday life and family dynamics
- Understanding how people interact with the public and private spaces they inhabit
- Understanding social norms and how these impact waste management
- Understanding the justifications people make for low engagement in recycling
- Understanding people's relationship with communications around waste

Approach

Ethnography is a form of qualitative research. A prominent characteristic of the ethnographic approach is that context is key to understanding people's behaviour. By building a strong understanding of people's home environments, relationships and life priorities, what they say and do can be placed in the context of their wider lifestyle – making it more possible to uncover tensions, contradictions and insight into why they behave as they do.

To gather this rich data, respondents are engaged for several hours split over different occasions – unlike surveys or focus groups where the interaction is relatively short.

Qualitative research is not intended to be representative of the population in the same way that a well-designed survey might be – instead it is about gaining an understanding of the experience, process or sense-making of a group of people in an individual context, through drawing key themes and patterns out of the data.

[2] WRAP (2015) RCY104-003 Barriers to recycling for residents in flats and terraced properties in dense urban areas. Literature Review.

Methodology

The research consisted of three phases (see diagram below)[3]:

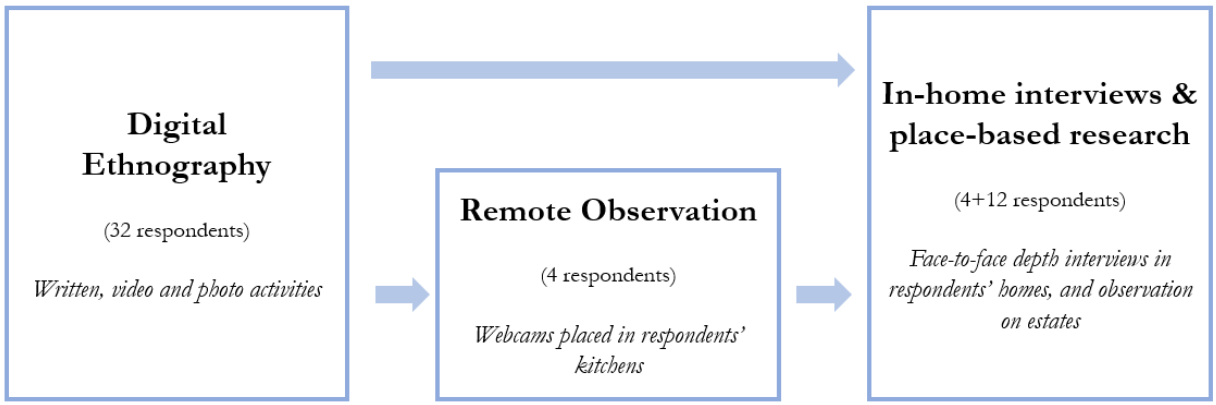
- Digital Ethnography
- Remote observation
- In-home interviews and place-based research

Respondents were not told the research was related to recycling until halfway through the in-home interview, or, for those who completed only the digital ethnography phase, until they had completed their final task. The research was introduced to participants as being about household chores.

The first phase consisted of 32 respondents submitting written tasks, selfie videos and photos to the research team – these activities involved respondents introducing themselves and their household, giving a tour around their flat, giving a tour around their estate, reflecting on their household chores and how they fit in with their daily lives. This phase allowed the research team to understand the physical context in which people live, people's attitudes towards their estate, people's routines and see how prominent or spontaneous waste-related issues were.

From this 32, 16 were chosen to continue to the following stages. Of these 16, four took part in the remote observation phase, which involved placing two webcams in respondents' kitchens for a duration of 1-2 weeks. Respondents were observed going about their daily activities, and incidents related to waste-management and recycling were monitored. This phase allowed the research team to understand respondents' routines and recycling behaviours in reality, going beyond respondents' self-reported behaviour and uncovering contradictions and inconsistencies with their testimony.

Finally, 16 interviews were completed – each lasted for between two and two-and-a-half hours and took place in the respondents' home where researchers could observe bin set-ups directly. Topics covered included: attitudes toward their local area; relationships with neighbours, landlords and other members of the household; weekly routines; recycling practices, taking the bins out, reflections on the communal bin area, knowledge of recycling, justifications for (not) recycling and perceived effectiveness of recycling.



Analysis

Throughout all phases, factors which pushed respondents towards or pulled respondents away from recycling were identified. The analysis centred on the triangulation of data between the different fieldwork stages, uncovering contradictions, confirmations and tensions.

From phase 1, submissions from respondents were reviewed and tagged according to content, and key themes were drawn out, and used to inform the questions and probes used throughout the depth interviews. When analysing the remote observation footage, researchers identified moments relating to recycling/non-recycling and coded the behaviours around these time periods according to a coding framework.

After the in-depth interviews, individual stories were discussed as a group; and themes, and similarities and differences between respondents were identified. Data from interviews was also triangulated with observations made by researchers about the estates, and data from the remote observation footage.

At the end of all fieldwork stages, the themes were expanded in conversations and workshops with the Resource London team and consolidated into final theme areas as outlined in this report

Sample

The sample covered a broad range of respondents, recruited via a free-find recruitment agency. Sample quotas were agreed with Resource London. All respondents live in purpose built flats. Key characteristics include:

- Borough: Camden, Lambeth, Hammersmith and Fulham, Hackney, Islington, Tower Hamlets and Westminster
- Type of housing: half private and half social housing
    - Private: mainly rental, some owned
    - Social: mainly Peabody housing association, with some local authority
- A range of household set-ups, including those living alone, living with friends, living with partners, living with children and living in multi-generational households
- A range of tenure lengths from under 4 months to over 20 years
- Size of estate: from 40 units to 100+
- Age: from 18 to 75 years old
- A range of employment statuses

Some specific characteristics can be found in the table below.

All respondents gave informed consent to take part in the research and for their data (including photos) to be used. All respondents have been anonymised, with pseudonyms used throughout the report.

Sample characteristic	**No. of respondents (n=32)**
Housing Type	
Private rental	14
Private owned	2
Peabody housing association	10
Local authority housing	6
Household set-up	
Living alone	6
Living with partner	7
Living with children	6
Living with friends	11
Multigenerational	2
Tenure length	
Under 4 months	1
5 months – 2 years	8
2 – 8 years	13
9+ years	10

A full breakdown of the sample is provided in the detailed methodology paper.

Overview of findings

Findings from the research have been split into three key areas:

- **Rubbish routines:** findings related to attitudes towards recycling, daily routines, internal flat space and layout, and storage and display of items for disposal or recycling.
- **Place:** findings related to transportation of waste from flats to the communal area, routes around estates, perceptions of communal bins, perceptions of other people's use of communal bins, and sense of responsibility and accountability
- **Communications and influencers:** findings related to relationships with different social groups, social norms around recycling, awareness and effectiveness of communications, and knowledge and assumptions about recycling

Themes within each area, along with respondent examples, are set out in the following sections. These themes generally related to both private and social housing residents – exceptions are highlighted where they exist. These differences were mainly around length of tenure and household composition (i.e. fewer flat shares in social housing flats).

Alongside these overarching themes, three other documents were developed:

- Push and Pull Factors – factors which 'pushed' people towards recycling and 'pulled' people away from recycling were documented throughout the research
- Opportunity Platforms – the challenges identified throughout the research were collated into opportunity areas, with starting questions to stimulate ideas as to how the challenge might be addressed
- Case Studies – including a summary profile of all 32 respondents and more detailed profiles of six respondents

These documents are available as separate appendices.

1. Rubbish routines

Environmental issues were on the mind of many respondents – but this didn't necessarily trickle down to practical recycling actions

The majority of respondents were concerned about environmental issues. When asked about what they would want to change about the world, many cited climate change and protecting wildlife as some of their key priorities.

Respondents frequently spontaneously spoke about waste management when they were asked to reflect on their household chores. This was often in relation to dislike of cleaning or emptying the bin or, in shared flats, frustrations with other household members over their waste management behaviours.

Many respondents saw recycling as a behaviour which has positive impact on the environment, but were often unable to articulate why. Some reasons included the protection of wildlife and the maintenance of a healthy food chain. Despite seeing recycling as a good thing, and being motivated in theory, this did not necessarily translate into actual recycling behaviour. Many respondents were not recycling at all, or were recycling inconsistently. People were sometimes carrying out other environmentally-friendly behaviours, such as cutting up rings that hold beer cans together so they wouldn't harm wildlife, not using aerosols or not littering. People sometimes used these other behaviours as justifications for why they didn't carry out recycling behaviour.

Even committed recyclers show inconsistent recycling behaviour

Some respondents, or their household members, were enthusiastic recyclers, and had strict routines about separating, rinsing and drying items before putting them into recycling bins. These tended to be people who had rigid daily routines which rarely changed, and so their recycling routine fitted well into their day, or people with very strong environmental drivers who often instigated recycling systems and attempted to influence their other household members. However, despite two of the respondents who participated in the remote observation saying that they recycle, camera footage showed this not to be the case all the time, indicating that people may overclaim about their recycling behaviour.

Edmund[4] *claimed that he feels strongly about protecting the environment, and does not use aerosols for this reason. He also said that he recycles, but there was little evidence of this from the observational footage.*

Limited space leads to improvisations and innovative use of space

Most respondents were living in flats with small kitchens, and restricted storage and surface space. People were having to be innovative with how they stored their possessions or food items. Many were storing food or kitchen equipment in other rooms of the house (e.g. in hallway cupboards), or alternatively, using their kitchen as space to put other furniture, like chests of drawers. People made use of any extra surface space they could, with windowsills, tables, and corners of rooms all acting as overflow areas. One

[4] Pseudonyms have been used for all respondents throughout this report and appendices

respondent, for example, was not a regular cook, and made use of her oven space as extra storage for household items, like her iron.

This squeeze on space sometimes presented challenges even for placement of residual waste bins. Some respondents had positioned their residual waste bins in front of kitchen cupboards (which prevented cupboard doors from opening freely) or "floating" in centre of rooms. Tim, for example, used a carrier bag hung over a door handle for his residual waste.

People who did not recycle commonly quoted lack of space as a reason for not having a recycling bin. Most respondents who recycled did not have a designated recycling bin, but had instead used other strategies to collect recyclable items in their flats, such as using carrier bags hung over door handles or designating specific areas of the kitchen for recycling – for example, Kourtney and her flatmates have a small 'recycling shelf' where they stack items. People who had arrangements such as these did not necessarily have any more space in their flats than those who did not attempt to recycle, implying that the 'lack of space' barrier could be overcome if people were motivated to do so.

Whilst most people used more heavy-duty plastic bags, such as a 'bag for life', this arrangement was sometimes semi-permanent, depending on whether the bag had been hung over the handle that week.

General plastic bags seemed to be more commonly used than council-provided single-use bags. Sometimes council-provided bags were used to line receptacles or otherwise were used to put loose recycling into when transporting recycling to the communal bins.

Very few respondents were recycling food waste, and were instead putting this in their residual bin. A few respondents justified this by saying that they never had food left on their plates after a meal, but did not mention food peeling etc.

Those who were recycling food tended to be enthusiastic recyclers, and have a caddy provided by the council. These respondents also used compostable bags. Camilla, for example, had received a food caddy when she moved in and has never had to ask for more bags because they had so many delivered in the first place.

These bags did pose some issues, predominantly in terms of leaking. Aaron was double-bagging his food waste to stop it leaking, and complained when his neighbours left their food waste out in the hallway where it leaked and stained the floor.

Recycling left on display was not felt something to be proud of

The way recyclable items were collected together and stored in flats posed a challenge. Due to the lack of a recycling bin, many items were left out on the side, although this often was a source of annoyance for household members. It was not seen as the social norm to have recycling on display. People were more reluctant to have some types of waste items out on display than others. Glass bottles and jars, for example, were an item that people often felt comfortable leaving out on a windowsill, or in the corner of a room.

This seemed to stem from, firstly, people's unwillingness to put heavy glass bottles into the residual waste ("it just feels wrong" [Rohan]), secondly the perception that glass bottles were "cleaner" than other types of waste, because they had generally only contained liquids, and thirdly, that they were almost seen as a decorative item. This was especially the case with beer or wine bottles, which often had attractive labels and held a certain status or association with their lifestyles. Some people also talked about liking certain jars, because of their shape and size – and some of these were often rinsed out and reused to store other food items.

Other types of items were seen as less acceptable to have out on display in kitchens. Plastic trays were always seen to have the residue of their contents left on them and were seen as "dirty" or "sticky". Respondents frequently didn't want to spend the time rinsing these out as food was often "caked on" them and they felt it would take a lot of effort to clean. As these items were seen as dirty, people were reluctant to leave them on display in the same way they would leave their glass bottle on the side, and wanted to have them out of sight as quickly as possible – hence putting them in the residual waste bin.

Even when respondents did have a carrier bag to contain their recycling, they still did not necessarily want to leave this on display. Katherine would hide her recycling bag away in the cupboard whenever she had

people coming around, showing that she felt her recycling system was not something to be proud of and instead was something that should be hidden from view. This was true for other respondents who did not recycle – Ian, for example, had spent a lot of time decorating his flat, was very house-proud and did not want his kitchen to look "messy" with recycling. This was his main justification for not recycling.

Hiding recycling away prompted another challenge in that the recycling receptacle was not acting as a behavioural cue to nudge people into recycling.

The residual waste bin was seen as the 'normal' or 'default' bin

Despite most respondents being aware of, and generally in favour of, recycling, the residual waste bin was still very much seen as the default bin. When talking about waste, respondents used language such as "normal", "general" and "standard" to describe their residual waste. All respondents had a bin for residual waste, and a few private tenants reported that residual waste bins had even been provided by landlords before they had moved in, setting this up as the acceptable minimum standard.

Not only were respondents using terms such as "normal" around residual waste, but there was also inconsistent language use on signage and communications around waste management. On estates, there were signs (including both permanent printed signage and ad-hoc handwritten notes) which used language such as "residual", "refuse" and "rubbish". Ambiguity and a lack of consistency left residents confused about how they should be referring to their waste and, when it came to communal bins, which types of waste should be placed where.

Recycling containers were predominantly referred to as "the recycling bin".

"I take the normal bin down, but leave the recycling to my housemate." ***Jason***

"That would go in the general bin." ***Jean***

Flat-dwellers saw the kitchen as the default space for recycling

Alongside the residual waste bin being seen as the default bin, the kitchen was seen as the default location in which recycling takes place. Those residents who were recycling were generally only associating recycling behaviour with their kitchen, and were not taking opportunities to gather recyclable items in other rooms. When in other rooms, waste went straight into a residual waste bin. Occasionally, respondents piled up items of recycling which they intended to take through to the recycling bin.

Most flats were not open-plan, and therefore 'sightlines' from other rooms to the recycling receptacle in the kitchen were rare – and so people did not have the visual prompt to recycle. An exception to this was Emilie, who placed her recycling bin in her hallway which was easily accessible from various rooms, and as such did tend to recycle items from rooms other than the kitchen.

If people didn't separate their waste in other rooms in the first instance, there was limited opportunity for any recyclable items to be 'rescued' and reallocated to the recycling waste when bins were taken out. When emptying their bins, respondents tended to amalgamate waste from other rooms with their residual waste, not considering whether these other bins contained recyclable items. With bathroom bins especially, despite containing cardboard toilet rolls and plastic shampoo bottles, respondents were rarely willing to dig around to take recyclable items out and reallocate them to the recycling waste, often due to perceptions of germs and dirtiness. This was especially true in private rental shared flats where household members were not living with close friends or family and perceived 'other people's' germs to be particularly avoided.

Respondents had differing limits of what was acceptable to touch

People had differing disgust tolerance levels to certain food or packaging items. Some respondents wanted to get rid of items as soon as their contents had been used – for example, items which contained "gloopy" or "sticky" substances. Some respondents were highly sensitive to thoughts of flies or other pests being attracted to these substances if left out (despite not having ever seen evidence of this). By throwing these items in the residual bin, which often had a lid, they felt as if they had curtailed this possibility.

Many had strategies for rinsing out packaging without touching it – using a washing up brush was a common example, or holding it by the corner and just running it under the tap for a few seconds. A few respondents did not rinse out packaging, not because they didn't want to touch it per se, but because they would then have to pick residue out of their sink with their hands.

Others, such as Amelia, were more tolerant of touching items, even if they had been sitting around for a while. She was happy to put her hand into the residual bin to fish out recyclable items that her lodgers had put in there by mistake.

Different tolerance levels to fullness of bins impacts frequency of taking the bins out

Most respondents were only taking their bins out when they were full, or overfull. Some residents spoke of a 'jenga-like' game, where members of the household would keep adding items to the pile until the pile eventually collapsed and it couldn't be ignored anymore. Indeed, Rohan spoke about the residual bin having a lid on it, "so you can't lie to yourself when it is full" as it would no longer close. When taking the bin out could no longer be ignored, this sometimes prompted a mass clean-up, with all bins being emptied and sometimes some general household cleaning as well.

Those who were using carrier bags to store their recycling were more likely to take their recycling out to the communal bin more frequently, due to capacity limitations.

This tendency to only take out bins when they were full also had implications for food waste. Aaron ate enough fresh food for his food waste bin to fill up quickly, and therefore for him to take it out every two days, whereas Holly and her flatmates did not produce enough food waste to warrant taking the bin out regularly, and therefore their bags started decomposing. She and her flatmates were not willing to clean out the bin and so stopped using the bin altogether.

A few respondents were more sensitive to smell, or the thought of flies being attracted to their waste, and would take out the bin even when only half full. This was especially true for food waste bins, where these existed.

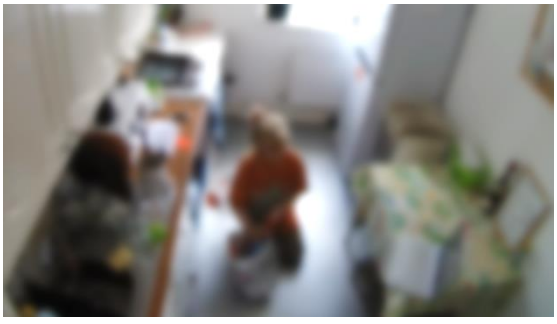
People who lived with flatmates didn't generally feel individually responsible for emptying the bin. Unlike cleaning or washing up, taking the bins out wasn't high on the list of people's priorities – sometimes residents described other household chores as every-day, essential or even "therapeutic" tasks. Those who lived alone or with their partner were more likely to have a set routine for emptying the bin, which fitted around their daily or weekly schedule.

2. Place

People are choosing to transport recycling to the communal bin in carrier bags

When recycling was stored loose, for example on shelves or windowsills, people need to find something to transport items to the communal bins in. These tended to be improvised or inconsistent receptacles, normally plastic bags. Sometimes people were using a different type of plastic bag each time, depending on what was available to them. Some supermarket bags (e.g. heavier duty bags for life) were being used as reusable recycling containers/carriers but this was less common.

As discussed above, people preferred to take the bins out on their way out, and not to make a special trip. This poses a challenge, as residents didn't want to return their improvised receptacle to their flat if they were leaving (e.g. for work). This meant that often respondents were disposing of their recycling by putting the whole plastic bag into the communal recycling bin – meaning the bin became contaminated with non-recyclable plastic bags. Most respondents saw other people doing the same, lacked knowledge of the consequences of contamination, and never received any feedback that highlighted this as a problem – the communal bins were always emptied by collection teams.



Holly decants her loose recycling into a carrier bag to take to the communal bin

Proximity of the bin impacted whether people were willing to make return journeys (e.g. one-way vs two-way bin trips)

The perceived ease of taking recycling down was a barrier. Respondents described the chore of taking the bins out as being a lot of effort, and often as something that required them to 'force' themselves to do. Respondents who didn't recycle talked about the recycling bins being too far away, despite in many cases these bins being placed next to residual waste bins.

A minority of residents made special trips to the communal recycling bins to take their waste out. This was predominantly when the communal bins were close by, and they didn't have to make any special preparations to go out (e.g. clothing, locking door, carrying down stairs). Rohan lived on the ground floor, about 20 metres from his communal bins and regularly took the bins out not as part of another journey (e.g. leaving the house), wearing only his flip flops and not closing his front door.

However, the vast majority of residents took their waste out on their way out of the estate. For those who lived on upper levels, or a long way from the communal bins, it was seen as a waste of time and energy to make a 'special trip'. Aaron, for example, took his food waste out every morning in a compostable bag when he went out to buy his morning coffee. Taking the bins out on the way out did mean that people had to organise the transportation of waste in preparation for leaving the flat.

Holly lived on the second floor and rarely took a special trip to the bin. Instead, when the recycling box was overflowing, she decanted all the items into carrier bags and left them on the floor of the kitchen in preparation for when she was leaving (in one case, 4 hours later as seen in her in-home observational footage). However sometimes she would make a special trip to the bin if all her flatmates were at home and they would make a group decision to clear up the kitchen. In this instance, they would carry the recycling box down together and then bring it back up.

People wanted disposal of recycling to fit in with their efficient exit routes

Almost all the estates had multiple exit routes. Respondents had preferred routes when leaving their estates, depending on their destination. These often involved back routes or cut-throughs. For example, Rohan would go out of one exit if he wanted to go to the shops or the gym, and a different exit if he was going to catch a train. Respondents wanted to drop off their waste in the most efficient and easy manner possible, with minimal interruption to their planned journey. This was demonstrated by the fact that communal bins placed near popular exit routes from the estate were much more likely to be full than others which were dispersed around the estate.

People had no 'plan B' when their recycling plans were disrupted

Many people had good intentions around taking out their residual and recyclable waste, and would take it to the designated area. People expressed frustration that, when they got there, communal bins were often overflowing and there was no space for them to put their waste. A few experiences could contribute to an overall perception that bins were overflowing all the time. In this situation, respondents reported feelings of internal conflict about what was best to do.

With most people taking their rubbish to the communal bins on the way out of the estate, returning their waste to their flat and waiting until space was available in the communal bin was not seen as a reasonable option. Once taken out of their flat, the priority was to get rid of their waste. Respondents admitted that, although motivated to put their waste in the correct place in theory, in these situations they had sometimes put their waste into the wrong communal bin, or had left their rubbish on the ground in front of the communal bins, especially if other people had already done the same. Respondents, although feeling uncomfortable doing this, did not see it as fly-tipping, and this feeling of discomfort often faded very quickly after dropping off their rubbish.

"I'm not sure what the silver bins are for… but if the recycling bin is full, I would put my recycling in them. Everyone does." ***Rohan***

Communal bin areas were seen to be unsafe, dirty and not well looked after

Respondents frequently identified communal bin areas as their least favourite parts of their estate, even before they knew the research was focusing on waste and recycling. This was true of both private and social housing estates. Dark and uninviting communal bin areas made people feel uneasy. These areas were generally not well-lit or decorated attractively. Anti-social behaviour, such as drug-taking, on some estates deterred respondents from spending much time in communal areas.

Respondents saw other residents abusing the area – for example, urinating near the bins – which made them unwilling to spend any more time in the area than necessary. And because of behaviour such as this, the social norm was not to treat these areas with respect.

Emilie's communal bins were often overflowing

People wanted to move away from the communal bin area as quickly as possible, and therefore threw away their rubbish instinctively as opposed to taking time to consider what they were doing with their waste (for example, reading the signage on bins, finding a bin that was emptier).

Few respondents reported that they had made complaints about the state of the communal bin area – those who did tended to live on social housing estates and had some involvement with their residents' association. Jean, for example, had lived on her social housing estate for 24 years – her husband had previously been the caretaker – and so she felt confident talking to her residents' association or estate manager.

"People urinate between the bins. It's an area you want to get through quickly." ***Ian***

Frustration can weaken commitment to recycling

Regularly feeling that their recycling efforts were wasted could significantly impact respondent's motivation to carry on recycling. Some respondents were engaged with in-flat recycling and followed all the rules, but when they arrived at the communal bins, they were frustrated to see that others did not take the same care. This included frustration at the Council or collection teams who many respondents felt did not provide enough communal bins or empty them regularly enough (forcing them to leave rubbish on the ground),and also frustration at other residents who seemed to disregard the rules.

This seemed to impact behaviour in a few ways. Many respondents had started off decanting their recycling loose into the communal bins, but had fallen back on leaving recyclable items inside plastic bags, mimicking the actions of others (adhering to the social norm), or would put their waste into the wrong bin. It seemed to prove difficult for respondents to maintain confidence in the local recycling system when they saw it broken by others – especially the council who they saw as responsible for the recycling system in the first place. Some respondents indicated that they got the impression that the council didn't care or make the effort to support residents to recycle, leaving them questioning their efforts.

People don't feel accountable for what they put in communal bins

Communal bins were often positioned in locations where there was limited activity – people spoke about bins being 'out of the way' and they rarely saw other residents in those areas. This, coupled with the knowledge that large volumes of people used each communal bin, led people to feel anonymous and unaccountable when using the bins.

Respondents didn't feel like their behaviour was in any way monitored and, thinking they could not be identified or linked with what they placed in the communal bins, took less care over their waste – for example, placing items in the wrong bin or leaving waste on the floor next to communal bins. This feeling was exacerbated by the lack of feedback and repercussions they saw for contamination or fly-tipping.

"The bins are around the back of the building. I never see anyone else there." ***Amelia***

People don't see communal bins as something to look after

Another consequence of large numbers of people using each communal bin was that there was little sense of individual responsibility to maintain the area. Residents were observed during the ethnographic fieldwork accidentally spilling rubbish so that it landed outside of the communal bins but then not picking that rubbish up. Respondents didn't see the communal bins as their responsibility – mainly attributing their upkeep to their housing association, council or waste collection team. They often blamed other residents for making the area unclean – sometimes as a result of actively seeing other residents dumping waste or urinating by bins, and sometimes from seeing the state of communal areas and making assumptions about the cause. Either way, most were unwilling to act on other people's behalf to clear it up.

"People just dump their stuff around the bins." **Emilie**

People didn't perceive themselves as having a role in the waste collection system

The majority of respondents were unsure when or how their communal bins were emptied. Some had vague notions of having heard collection teams arriving, but most, especially those who were not at home during the day, had rarely seen the bins being emptied. They were certainly not using 'collection day' as a prompt to take their rubbish down to the communal bins before they got taken away.

This was seemingly in contrast to those who live in kerb-side properties, who tend to feel more of a responsibility to put their bins out in line with the system set out by their local authority, or else their waste will not be collected until the next collection time. Those in flats appeared not to have this same motivation to engage with the recycling system as there was no personal cost to them.

Physical limitations make recycling more problematic

Transportation of recycling and waste from flats to communal bins was sometimes hampered by physical limitations. Because of the desire to take the rubbish out on their way out of the estate, people were often carrying multiple items with them which restricted their ability to carry waste too. Dora, for example lived on the eighth floor and had three children. When she went out, she often had to juggle a buggy and several bags. When the lift was out of order this was especially problematic for her. As a result, she often left taking the rubbish out to her husband.

A couple of respondents reported that other residents in their building had their children take the recycling to communal bins on their behalf. This raised issues of not only whether children understood which was the correct place to put waste, but also whether they were able to reach to put waste into them. A few respondents had seen children placing bags on the ground outside bins because they could not reach.

Putting waste into the communal bins was not just a problem for children. Some adults complained of small openings on recycling bins and, given that most were not decanting individual items into the bins but were putting in whole bags, they were forced to open up lids entirely, where this was possible. Holly spoke of having to "jump up to flick the lid open" and put her waste in before the lid closed again. Aaron spoke highly of his communal food waste bin which had a soft close lid. There was a similar problem with residual waste chutes, which were seen as mostly useless because only a few items could be put in them at one time.

3. Communications and influencers

Some respondents had recycled more effectively in the past – or in different scenarios

Many respondents reported having had periods where they had been encouraged by recycling 'role models'. These may have been when they were living with family or with previous flatmates. Rohan, for example, lived with people at university who were very engaged in recycling and used to monitor what other people put in the bin. Following on from this, his girlfriend instigated keeping a recycling bag in their kitchen when they lived together, but since she moved out, that recycling system has been lost.

Those who had grown up in countries other than the UK reported cultural differences in household chores and recycling. In Romania, Emilie's family had been incentivised to recycle and she was surprised that it wasn't the case in the UK. In contrast, the concept of recycling as known in UK was not known where Rohan grew up in India, so he reported having to teach himself to do so since he moved to the UK 8 years ago.

Work colleagues were also important influencers of recycling. Many respondents had an efficient and effective recycling system at work and, sometimes, this behaviour was brought home too. For example, Holly had learnt that grape packaging is recyclable from her work colleague, and Emilie consistently recycled paper because she worked in an art studio and her manager was very strict about it.

Most people did not have close relationships with their neighbours

Those who lived in social housing tended to know their neighbours better, having lived in their flats for longer. Some had built strong relationships over time. However, the majority of respondents did not know their neighbours, or knew them only in passing, and were not invested in these relationships.

There was sometimes tension between neighbouring households, due to noise complaints or conflict over communal spaces. Amelia, for example, felt there was animosity between social housing tenants and private owners on her estate, and she had had multiple run-ins with neighbours about the storage of her bicycle in the hallways.

"There's a bit of a difference between those who are council tenants and those who privately own…a sense of entitlement from those who privately own." ***Amelia***

People did not generally perceive their neighbours to be good recyclers

Respondents did not get the impression that they were part of a community of residents who recycled – there was no positive social norm from seeing what other residents are doing. People did not talk to their neighbours about recycling and therefore had no idea what their waste management routines were.

Some people saw the indirect results of their neighbours' actions. For example, from the contents of a particular communal bin, Aaron assumed that people from a particular block "just chuck anything" into the bin, and others expressed frustration about neighbours blocking up waste chutes with large bags of rubbish. Other respondents made assumptions about other people's lifestyles and recycling habits – for example, Rohan knew that his upstairs neighbour has three children and was sceptical that she had time to recycle.

"She has three kids - I'm sure she doesn't have time to recycle." ***Rohan***

Residents and their tenants' associations could be effective champions, however current efforts were often ineffective or even antagonistic

Many people were not aware of, or engaged with, their tenants' association. Those who were tended to have lived on their estate for longer and were more engaged with the community. Even these respondents often did not have the best of relationships with their associations, citing their association's lack of proactivity and their own fear of raising complaints or issues. Because residents found their tenants' association unapproachable or antagonistic, they were unlikely to listen to guidance from them. There was evidence of handwritten notes from tenants' associations regarding recycling but these seemed to have little impact.

Residents were also put off by the lack of responsiveness of their landlords or housing associations. Mick's perception of his housing association had been tarnished by their lack of action regarding his broken boiler, and so he didn't feel a responsibility to abide by any guidance they gave.

"The leader of the tenants' association is ok…but they're not a doer. It's frustrating that the leader isn't enthusiastic about getting things done." ***Aaron***

People didn't regularly re-appraise their waste management strategies, although there were a few key moments where people were more reflective

Many social housing residents had lived in the same flat for many years (sometimes more than 20 years) – especially in comparison with those in private rental, who were much more likely to stay for a shorter period of time. These residents were much less likely to encounter moments when they would be prompted to reflect on their recycling behaviours, as the members of the household and the set-up of the flat and estate stayed fairly constant.

People's waste management routines were ingrained, and any change was seen to require a large amount of effort. Ian, for example, complained that he was "too lazy" to make the effort to organise a recycling bin. Most were content with their current set-up and did not see it as easy to change their waste management routines.

There were a few moments when people seemed more likely to reflect, examples including new kitchens being fitted, changes in estate cleaners and switching from one estate to another. Amelia, for example, had a new kitchen fitted and switched from having a freestanding residual bin, to an under-counter bin, although she still used a carrier bag hung over her kitchen door handle for her recycling.

For those who moved more regularly (predominantly those in the private rental sector), there seemed to have been a window of opportunity when they were open to new information and therefore could add to their recycling knowledge. Many respondents were buying shared household items, for example cleaning products, were in frequent contact with their landlord and were exploring their estate when they first moved in. Holly's flatmate, for example, went out and bought a recycling box when they first moved in, as in her opinion, a recycling bag was not very "aesthetic". Few respondents however could recall receiving any communications around waste management during these periods.

In shared flats, there was often a tension between undermining each other's recycling and learning from each other

Some respondents were having regular conversations with their flatmates about the distribution of chores. Some even introduced more formal cleaning rotas – many of which were adhered to for the first few months before falling by the wayside. In the majority of shared households, there was a predominant 'lead tenant' who tended to be the driving force behind

household set-up. For example, Rohan had lived in his flat for six years, with other tenants coming and going frequently. He saw the communal areas very much as his 'domain' and was quick to instigate rules about not leaving washing up undone.

These household systems occasionally caused tension between household members. Sometimes the level of

antagonism reached the point where flatmates were deliberately undermining each other's recycling efforts.

Holly's flatmate instigated a cleaning rota when they first moved in, but this fell by the wayside after a few months

"One housemate was particularly hot on recycling and taught me how it all works, I've tried to do that with the new girl but it obviously hasn't worked" ***Camilla***

Most people found information about recycling complex, hard to digest and difficult to remember

Few respondents could recall receiving information about recycling, and sometimes blamed a lack of information for their poor recycling A few had received leaflets through the door or had been left a leaflet by previous tenants, but only occasionally was this kept and referred back to. Kourtney, as an exception, has pinned a leaflet to the wall in her flat to remind her and her flatmates what is recyclable.

People are unlikely to go through information if it looks complex or overwhelming

Information from different channels was perceived to be contradictory. Those who were more invested in recycling the correct items pointed out inconsistencies between signage on the bins, signage on packaging and signage on bin bags, leaving them confused and exasperated – and more likely to simply guess. Although people were generally aware that recycling instructions on packaging existed, few people were consistently checking if they were unsure. For those that did, they were often frustrated when packaging instructions told them to check their local recycling rules, as they were unsure where to look for this, and unwilling to spend time doing so.

Signage around bins varied significantly. Very few had permanent informational signage. Most signage was on stickers on the front of communal bins, which were often worn and dirty. Respondents mentioned having noticed the ticks and crosses that appeared here, but did not regularly refer back to these, and did not find them useful when they had queries about specific items. They made decisions about what to put in their recycling container when they were in their flat anyway, and were unlikely to remove anything at the point when they were at the communal bins.

Researchers observed that there were many ad-hoc notices put up. These seemed to be from residents' associations, caretakers or estate managers clarifying instructions or threatening punishment if instructions were not adhered to. Respondents however did not mention seeing these or taking notice of them.

I don't think this is recyclable… oh no, wait – the information on the bag says it is. That's different to what it says on the bin!" ***Aaron***

Most people were often guessing or relying on common sense to judge what was recyclable

Knowledge about what was recyclable varied, but was often quite poor. People felt like they 'just knew' what was recyclable but were usually unable to explain where this knowledge had come from. They were often relying on ingrained 'rules of thumb' about what is recyclable that they had built up over time. These consisted of stories they had heard about certain items (e.g. bottle caps aren't recyclable), but also heuristics for categorising waste based on physical characteristics of different items.

Some respondents, for example, used the thickness of plastic to determine whether an item was recyclable, or thought that the weight of items was an indicator of whether it should be put in the residual waste or not. Others compared items with other items that they knew were recyclable and made guesses based on that. People rarely investigated when they were unsure.

"I would recycle this bread wrapping because it's plastic…it says on the bin downstairs that plastic is recyclable… shopping bags, bread packaging, squash bottles – they're all plastic, all recyclable." ***Amelia***

People often assumed it's about how much you recycle, rather than how well

Many respondents were enthusiastic about recycling in theory and wanted to do a good job – however they frequently weren't recycling correctly. When asked, respondents were often tentative when reflecting on what was recyclable – rarely had they paused to think about this in any detail before.

Those who were recycling often adopted an "if in doubt, recycle" policy, meaning they were placing a large number of contaminating items into their recycling. 'Contamination' was not a phrase any of them had heard of before. Many readily admitted that they didn't know what impact putting the wrong thing in the recycling had – and they didn't see themselves as being 'contaminators'.

"If in doubt, I'll put it in anyway. Someone will sort it out further down the line." ***Camilla***

There were many rumours about what happens to recycling (or not) which seemed to undermine individual motivation

No respondents could confidently articulate what happened to their recycling once it was collected from

their estate. People had no idea where waste was taken, whether it got sorted, how it might get sorted and where it ended up.

Many residents had great faith in recycling being "sorted out further down the line" which meant they were far less stringent in firstly, what they put in their recycling bin, and secondly, the extent to which they rinsed or prepared it.

There was some talk of waste ''being taken to China' – few believed this was actually true, but it demonstrated the lack of knowledge and connection people had with the next stage beyond their own actions. Some respondents were also sceptical that collection teams were committed to recycling – many, including both those who recycled and those who did not, said they thought collection teams "just mix up the recycling and the normal waste anyway", which undermined their motivation to recycle.

Perceptions such as this had never been addressed or disputed, and were therefore continually lingering in people's minds. Individuals never received feedback on what happened to their waste, which often left people wondering if they were doing the right thing or making a difference in any way.

4. Key differences between respondent types

Social and private housing

Although the majority of findings apply to both private and social housing residents, there were some key differences between these groups. In terms of household set-up, those in social housing were more likely to be families, couples, or to live alone – in our sample, all those who shared a flat with friends were living in private rental. Social housing residents were also more likely to have lived in their flat for a longer period of time than private rental residents. This had an impact on several areas:

These respondents generally felt more settled in their flats and had fairly established routines in relation to their waste management – for example in terms of types of receptacles, positioning of receptacles in their flat, and their route to the communal bins.

These respondents had fewer prompts to reappraise their waste management system. Moving flat was found to be a time where waste management practices might change, for example through buying new bins or being introduced to different guidelines for recycling – but this was not something that was as common amongst this group. Some were transferring between different estates within the same housing association but this happened less frequently than in the private rental sector.

Respondents in social housing were more likely to know their neighbours better, and therefore were more likely to feel a sense of community on their estates. Social norms were more likely to be established on these estates and made more visible through better resident relationships. A few respondents mentioned having visited their neighbours' flats, which gave an opportunity for them to observe their waste management set-up (although no respondents explicitly mentioned this). Despite knowing more of their neighbours, respondents still reported tension between neighbours and complained about noise and anti-social behaviour.

Living on an estate for longer could contribute to greater feelings of responsibility to look after their flat or estate. Ian, for example, knew that he was never going to own his flat, but he had lived there for 20 years and wanted it to feel like home. 'I don't own it, but I want it to be nice. It's mine for life, and then it will be my sons' (Ian).

Social housing tenants were more likely to be aware of, or in contact with, their residents' association. Some respondents, such as Aaron and Amelia, went along to meetings and so were aware of what was happening on the estate, and knew who to talk to if they had any issues around the cleanliness of the communal areas. However, this didn't necessarily mean they had good relationships with the residents' association – some reported that they did not act on complaints.

There was little difference in the state of communal bins between private and social housing estates. Residents on both complained about lack of cleanliness and overflowing bins, which reduced the ease with which they could recycle and their motivation to do so.

Household set-up

There were also some differences between respondents as a result of their household set-up.

Those who lived alone naturally had greater individual responsibility for emptying their bins, and so tended to do so more frequently, in comparison with those who shared a flat and who tended to wait for one of the other members of their household to take the bins out. However, some respondents who lived alone reported that when they had people to stay they would empty their bins more frequently, which implies that they may have greater tolerance levels when they are the only ones who sees their bin, and that fear of social judgment plays a role.

Those who lived with their partner (and children), along with those who had lived in their flat for longer, tended to feel more settled. Some respondents in these categories had established routines using council-provided single-use recycling or food waste bags. They

tended to know where to buy or pick up these bags and had embedded them into their routine.

Those who shared a flat with friends were less likely to use the communal spaces regularly – for example spending more time eating in their bedrooms as opposed to the kitchen. These flats often did not have a dedicated living room, as it had been converted into an additional bedroom. This meant that respondents felt less responsibility over the set-up and maintenance of the communal areas. If they did not collectively set-up their kitchens to recycle at the beginning of their tenancy it was likely that they would not.

Respondents who lived alone, or those who were the 'lead tenant' in shared flats, tended to feel like the kitchen was "their space" and therefore felt comfortable leaving items out on the side to recycle – so they were still recycling even if they didn't have a specific recycling receptacle.

In shared flats, there was often a lead tenant (who had often been there the longest) who took responsibility for setting up cleaning rotas or for explaining the recycling set-up to new tenants – passing on knowledge and establishing a social norm.

Some respondents in shared flats seemed to be more sensitive to other people's germs – being unwilling to throw away other people's mouldy items from the fridge, or being less willing to rinse out items belonging to other people.

Less enthusiastic recyclers

Only a few people in our sample did not recycle at all, and even they thought recycling was a good thing to do. They gave a range of justifications. One of these seemed to be that they had bigger priorities at the current time – Dora, for example was a stay-at-home Mum with three young children and was busy most of the time cooking, cleaning and taking the children to school. She said she didn't have time to recycle, but would maybe start recycling when the children were older.

Others who didn't recycle, or recycled inconsistently, gave justifications related to aesthetics. Ian was very house-proud and thought recycling would look messy. This, coupled with his perception that there wasn't enough space in his kitchen for a bin, meant he did not recycle at all.

There were also differences between respondents in terms of their sensitivity to smell and touching items. Apart from a few individuals who were perfectly happy to put their hands into bins and use their fingers to rinse out food residue from packaging, most respondents disliked touching waste items. Those who didn't recycle, or who had once recycled but had now stopped, had sometimes had bad experiences with smells or flies, although this seemed to be a concern with residual waste as well as recycling and food waste.

The distance to the bin was also mentioned by respondents. Those who lived on higher floors were more likely to complain about how far it was to go to the recycling bins, although these were often no further than the residual waste bins.

None of these, however, were issues that had not been overcome by other respondents in the sample.

Conclusion

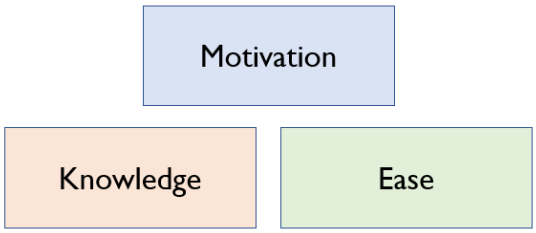
This research found there were many different reasons why people were not recycling effectively. Some were recycling inconsistently, some were recycling incorrectly and some were not recycling at all.

Many of the respondents wanted to recycle but their knowledge of how to do so correctly was misguided and / or was undermined because it was not sufficiently easy.

What these findings suggest is that in order for people in purpose-built flats to recycle, three conditions must be satisfied:

1. They must be motivated to do so
2. They must have the correct knowledge to do so
3. It must be sufficiently easy for them to do so

These conditions are interdependent. If any one or more of them is not met, it will undermine the other two.



If someone has the **motivation** and **knowledge** but it is not sufficiently easy, they will not recycle as much, or as frequently, or correctly.

If someone is **motivated** to recycle and it is **easy** enough for them to do so but their knowledge is incomplete or inaccurate, they are likely to recycle the wrong items, not recycle the right items or risk contaminating other items.

Similarly, without the motivation to recycle, neither the correct **knowledge** nor **ease** will result in recycling.

So it can be seen that the factors that affect recycling can most usefully be considered as a system requiring a co-ordinated approach.

Motivation

In general, respondents were motivated to recycle in theory and thought recycling was a positive thing to do.

However, this enthusiasm was not consistently translated into recycling behaviour. The levels of recycling varied between, but also *within*, respondents. There was no one factor that was a barrier to recycling across respondents. Motivation could be easily undermined by various factors.

There was a sense of invisibility around recycling. As they were often placed out of the way, respondents rarely saw other people using the communal bins. This lack of activity around the bins limited the opportunity for positive social norming around recycling. People were generally unaware of collection days, what happens to their waste once it has been collected, and more generally how their role fitted in. There is a challenge in people not seeing themselves as a player in the wider recycling system.

Lack of communal bins or infrequent collections sometimes contributed to respondents feeling like the council doesn't care about recycling. Some therefore thought there was little point in adhering to recycling rules, and motivation was reduced as a result.

Knowledge

Even if people were motivated to recycle, the knowledge they were basing their recycling on tended to be misguided. Respondents were generally relying on "common sense" and rules of thumb as to what could be recycled, and saw this as being sufficient. Rarely had they questioned their knowledge, and, if they did, they were unlikely to have sought out new information, preferring to go along with their gut or the mantra 'if in doubt, recycle'.

In the few instances when people did seek out information, they found the information provided on bin liners, communal bins, packaging and signage overwhelming and contradictory, leaving them confused. Myths around specific items persevered.

Many respondents did not have close relationships with their neighbours and were unaware of, or had poor relationships with, their residents' association. For those in shared flats, recycling was often a source of tension between household members. Therefore, whilst there was potential for several social groups to influence recycling behaviour, this was not currently happening.

Ease

Even if people were motivated and had the knowledge they needed to recycle correctly, they sometimes found it difficult to put recycling into practice. There were many barriers which reduced the ease of recycling, both inside and outside of residents' flats.

Most respondents had limited space within their flats for storage, and were having to be innovative in the way they stored items. Most people did not prioritise making space for recycling. Lack of space was regularly quoted as a reason why they did not have a recycling bin. This barrier was often a perception, as other respondents had frequently found ways to make recycling work within their flats by using plastic bags or allocating areas of their worktop to collect loose items. Any change to established waste management routines were generally seen to require a large amount of effort.

For others, recycling left on display was not something to be proud of, as items were not seen to be clean or decorative. Leaving items or recycling receptacles on view was not an accepted social norm.

Respondents wanted to drop off their waste in the most efficient manner possible, with minimal interruption to their planned routine. In order to take their recycling to the communal bins on their way out of their estates, many were using non-recyclable plastic bags and placing these straight into the communal bin instead of decanting items. It was clear that people's recycling set-up did not fit exactly with the 'ideal' from the perspective of the waste management sector. However, some people had found ways to make these strategies work with their space and routines.

Respondents felt that communal bins were often in poor state and placed out of the way, The lack of activity around communal bins impacted the accountability that people felt for what they put in the bins. Feeling anonymous, unmonitored and not receiving any feedback on recycling behaviour could decrease the quality of recycling.

Often, people had good intentions around placing their waste in the correct communal bin, but were frustrated when bins were overflowing or obstructed in some way. The lack of cleanliness implied that it was the social norm to not look after the communal bin area or dispose of their waste correctly. In these situations, people lacked a strategy for what to do and often resorted to less than ideal solutions, such as fly-tipping or using the wrong communal bin.

Lack of space in communal bins also gave the impression that those responsible for the recycling system were not doing their jobs properly, or that the system was 'broken' on a higher level. This could impact individual enthusiasm, as it was seen as pointless to contribute to a system that was already not working.

Opportunities

There are numerous opportunities to increase and improve recycling – and no individual will be influenced by exactly the same interventions.

Considering specific improvements as parts of a whole system which removes any barriers to motivation, knowledge or ease presents the greatest opportunity for change.

Naturally, each of these three areas may require different interventions in different locations as there will be varying location-specific challenges and the relative scale of the challenges may differ.

Where several stakeholders are involved, accountability can be given for delivering specific interventions within the system as a whole.

The evidence uncovered in this research shows there are specific opportunities to influence recycling behaviour under each of the headings.

Motivation:

- Make recycling a more visible activity to provide opportunities for social norming (e.g. placing communal bins more prominently, encouraging discussion of recycling habits between neighbours)
- Communicate how residents' actions fit into the wider recycling system to increase their sense of responsibility (e.g. communicating collection days, waste sorting procedures)
- Restore people's motivation to recycle after a 'sub-optimal' waste experience
- Weaken the emotional impact of other people not abiding by the recycling rules (e.g. prompting people to feel pride in their own behaviour instead of frustration in others')
- 'Reset' the attitudes of people who have become disillusioned with recycling on their estate
- Make people feel more identifiable in relation to their recycling behaviour to increase sense of individual accountability
- Encourage people to see the communal bin areas as the collective responsibility of the residents, establishing it as the social norm to look after the area
- Encourage people to see the recycling bin as primary and residual bin as secondary
- Reframe the language around 'normal bins' and 'rubbish bins' to challenge cultural norms

Knowledge:

- Strongly challenge dominant recycling myths and misplaced 'common sense'
- Ensure credible information is reaching people first (before they have to rely on word of mouth or recycling "common sense")
- Encourage people to be more investigative about what is recyclable and what is not
- Make it easier to check what is recyclable and what is not (e.g. app, QR codes on packaging)
- Provide people with better/more detailed feedback when they make mistakes
- Help people understand that quality is more important than quantity
- Raise awareness about the problem of contamination
- Make information more digestible (e.g. bite-sized and drip-fed)
- Create bold and impactful messages that really stand out in an estate environment
- Help people translate those messages into their own home
- Find ways to extend the duration and longevity of those messages for individuals
- Take advantage of teachable moments (e.g. house moves, change of estate staff, flat refurbishment) to communicate this information
- Support residents' associations and landlords to influence recycling more positively
- Develop communications that can be re-shared and re-used by local influencers (within and external to the household)
- Encourage people to bring workplace recycling behaviours back home

- Encourage people to pause and consider the best option before acting

Ease:

Inside people's homes:

- Prompt people to re-evaluate their current waste management systems
- Make changes to waste management systems seem quick and simple
- Show that recycling is possible even in small flats (e.g. case studies of successful recyclers)
- Provide people with better strategies for storing more recycling in a way they are happy with (e.g. allocating a space in their kitchen)
- Help people select the best 'receptacle' to meet their needs and preferences
- Increase associations between recycling and other rooms in flats (e.g. bedrooms, bathrooms) and make recycling bins feel like they better belong in other rooms
- Get people to locate recycling bins on major 'pathways' inside their flat
- Make it socially acceptable/desirable to have recycling left on display (e.g. communications campaign normalising having recycling on display in flats)
- Help people to feel more comfortable having recycling visible and on display (e.g. decorative packaging or receptacles, making a feature of recycling)
- Find ways to reduce the embarrassment associated with recycling (e.g. recycling specific personal items or items that are perceived to be unhygienic or smelly etc.)
- Help people set a household recycling culture (rules, systems etc)
- Make recycling systems (e.g. rotas) feel advantageous (and prevent antagonistic behaviours among household members)

Outside people's homes:

- Reduce the effort involved in transporting waste to encourage return and more frequent journeys to the flat (e.g. more recycling drop-off points)
- Better locate bins to fit in with popular exit routes
- Encourage people to take particular routes past communal bins
- Ensure provision of communal bins matches the footfall in certain areas
- Empower people with better 'one-way' strategies to transport their recycling to the communal bin, recognising that many people are using carrier bags for convenience
- Find ways of working around or enabling recycling with the current non-recyclable plastic bag behaviours
- Make communal bin areas feel more safe and secure
- Make communal areas places where people are happy to spend time so that they take more care over where they put their rubbish and recycling
- Provide 'plan B' options when the optimal waste disposal route is unavailable and communicate these options (e.g. signposts to next nearest bins)

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Are we at a moment of change for climate action?

New research by Behaviour Change, December 2019

Climate change seems like it's having 'a moment' in 2019, with developments that include:

- Continuing focus on the plastics crisis
- Greta Thunberg and school strikes
- David Attenborough's 'Facts' documentary
- Extinction Rebellion
- The government's commitment to net-zero by 2050
- Parliament declaring a climate emergency

However, the difficulties of translating this increasing profile into meaningful action are well documented. Nobel prize-winning behavioural economist Daniel Kahneman has commented:

> "Climate change is the problem we're least well equipped to deal with. It's remote, it's abstract, it's not a clear and present danger."

Paralysis, denial and exaggerated hope in partial solutions continue to dominate our collective response. Many remain sceptical that society can mobilise to bring about the scale of change needed.

In October 2019, we conducted new qualitative research to understand what people are currently thinking and doing about the climate crisis in their everyday lives.

Three workshops were facilitated by Helen Weavers of Real World Planning, repeating a project we had commissioned 10 years previously. The research was also informed by 'Living Carbon Free' – a report published in May by the Energy Systems Catapult looking at the implications of a net-zero target for households.

Research summary

What we did

Three extended focus groups with people at different life stages, in Manchester, Croydon and Watford.

The respondents were all ABC1 and within each group we had a mix of what we've called 'darker green' and 'lighter green' respondents, defined by their answers to the question below. This ensured that no-one we spoke to was either unconcerned/a climate change denier at one end of the spectrum, or an activist at the other.

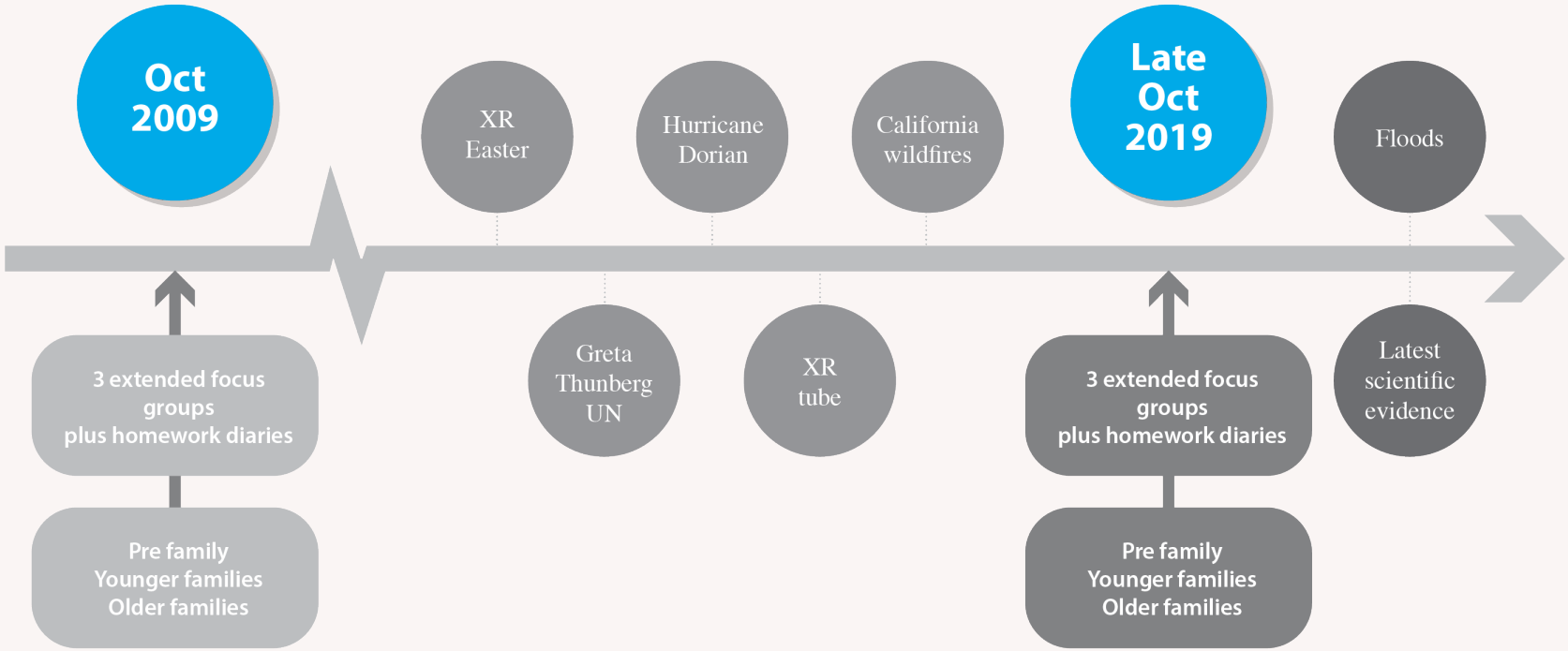
In order to minimise overclaim, respondents filled out homework diaries before the groups where they noted down their thoughts and actions with respect to climate change, the environment or sustainability. We also used private response sheets in the groups themselves.

You have probably heard about the threat of climate change and damage to the environment. Some people are making changes to live in a greener, more sustainable way. Which of these statements best describes your personal situation?

I am extremely concerned and consider the environmental impact of most things I do		**Terminate**
I am very concerned and have made quite a lot of changes		**'DARKER GREEN'**
I am somewhat concerned and have made some changes		**'LIGHTER GREEN'**
I'm not really concerned and don't feel it's my responsibility to make much change to how I live		**Terminate**

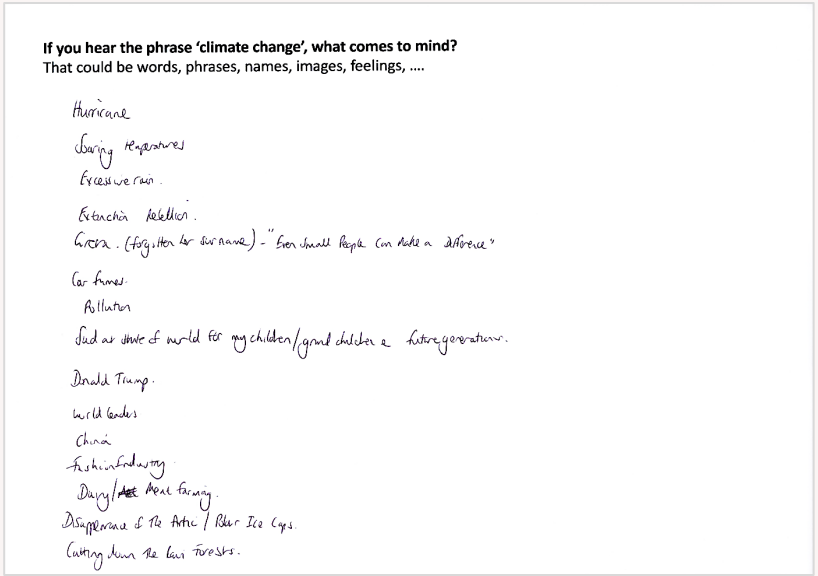
Respondents were a mix of 'darker green' and 'lighter green'

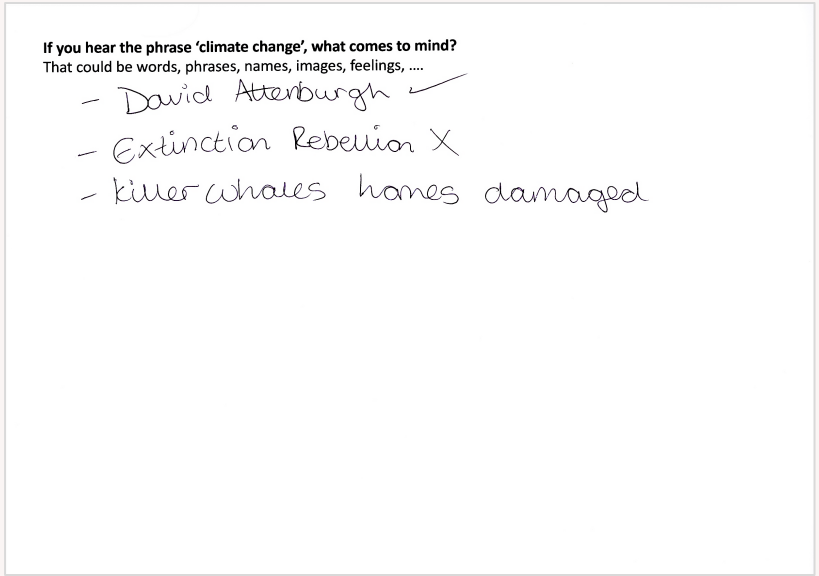
Research in October 2019, ten years on from our previous project



The differences between lighter green and darker green respondents

What comes to mind if you hear the phrase climate change?

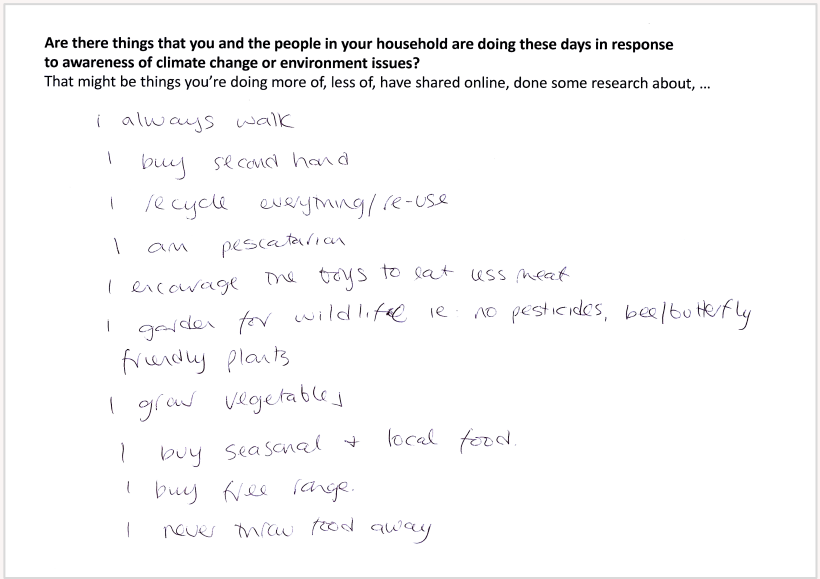




These responses show either end of the dark green to light green spectrum: one of our most knowledgeable respondents recorded a very large range of different things on the left, while on the right was someone whose impressions of climate change were quite limited and focused around what she regarded as the positive effect David Attenborough was having versus the negative feeling she had about Extinction Rebellion.

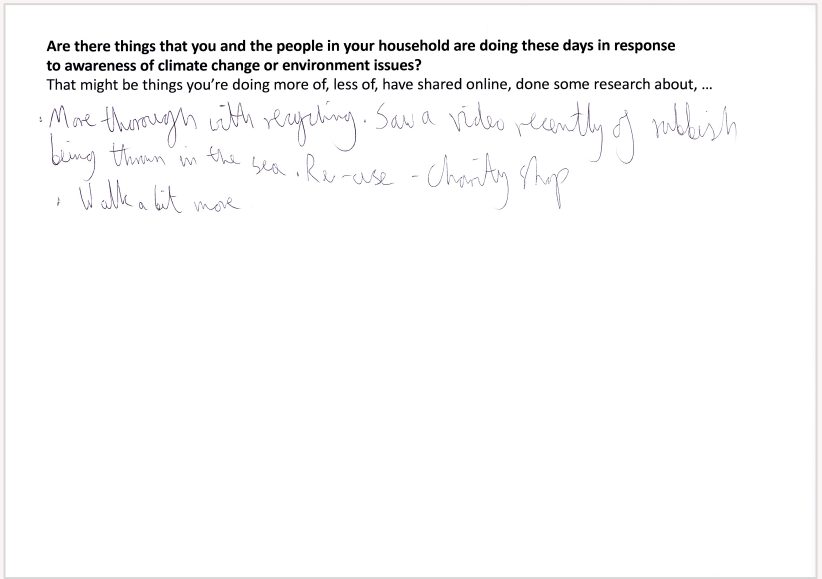
The differences between lighter green and darker green respondents

What are you doing in response to climate change?



Are there things that you and the people in your household are doing these days in response to awareness of climate change or environment issues?
That might be things you're doing more of, less of, have shared online, done some research about, …

i always walk
I buy second hand
I recycle everything/re-use
I am pescatarian
I encourage the boys to eat less meat
I garden for wildlife ie: no pesticides, bee/butterfly friendly plants
I grow vegetables
I buy seasonal + local food.
I buy free range.
I never throw food away



Are there things that you and the people in your household are doing these days in response to awareness of climate change or environment issues?
That might be things you're doing more of, less of, have shared online, done some research about, …

- More thorough with recycling. Saw a video recently of rubbish being thrown in the sea. Re-use - Charity Shop
- Walk a bit more

At one end of the spectrum is someone who is doing a wide range of things: not only recycling and avoiding car use, but also eating and gardening in a sustainable way. At the other end of the spectrum is someone whose activity was mostly recycling, although he said he sometimes walked rather than took the bus (this was as much for reasons of money and fitness as the environmental benefits). He was also pleased with himself for recently taking old clothes to a charity shop rather than throwing them away.

What are people currently doing or considering?

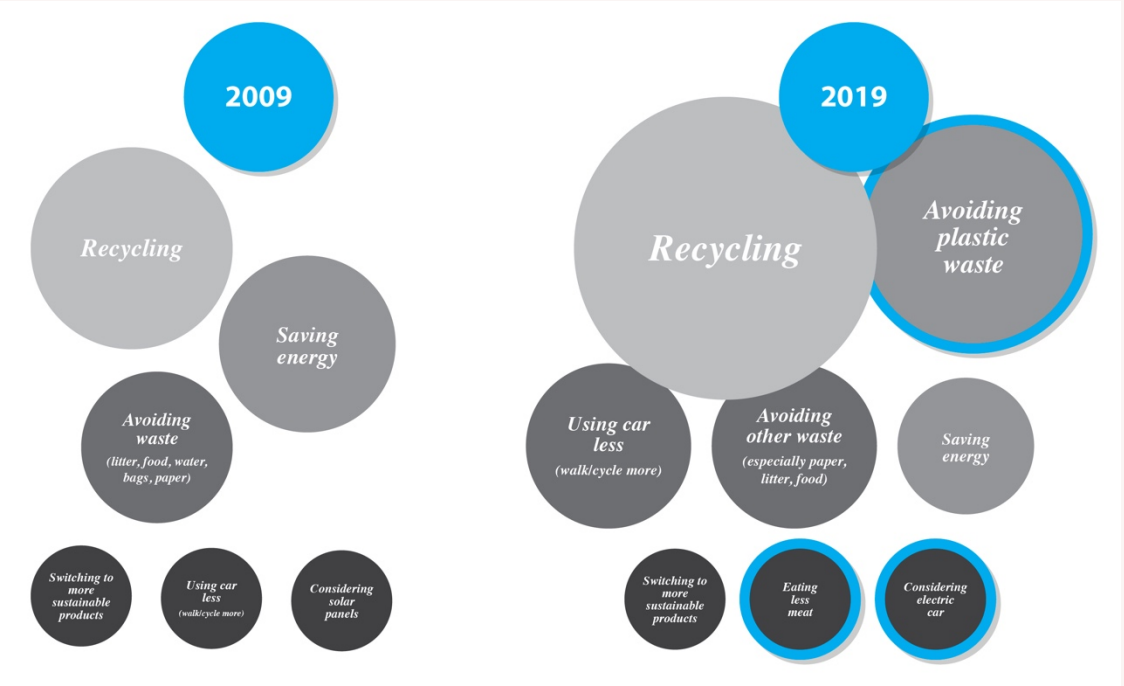
Comparing 2019 with 2009, we saw that the types of behaviour respondents are aware of is similar. However, there are some new additions, and some disappearances, such as interest in solar panels.

In 2019 there seemed to be a greater level of everyday thoughts and actions, with a wide range of specific things happening underneath these headings, and happening quite frequently – not only at home but also at work and when out and about.

Recycling is still very much dominating, with other anti-waste behaviours continuing to be common too – like being careful about energy usage at home and going paperless for bills.

The big new addition is plastic waste avoidance. To some extent this is about recycling, but it is a distinct conscious concern which also involves ideas like avoiding plastic packaging, or using an alternative like a reusable water bottle.

The other two emerging areas are at a much lower level but present amongst some people - eating less meat and considering electric cars.



Recycling

Recycling was very much still the number one theme in the 2019 diaries. We might have thought ten years ago that by now recycling would have become so normal that it wouldn't be mentioned much - but this didn't prove to be the case.

We would suggest that's because the 'cognitive load' around recycling remains high. Mental effort is still required to work out what goes where, when and how. It doesn't happen automatically, and there is still some emotion and debate around recycling that keeps it salient in people's minds – concerns such as the inconsistency of different recycling systems, varying levels of effort by neighbours, or controversy around recycling ending up in the sea anyway. It takes up mental space as well as physical effort.

Where were you?	What 'green' thought or action was it?	How did it make you feel?
TIP.	That its very impressive how people recycle more these days.	Proud + making a diff.
HOME	To go through at home to ensure things are going in the correct bins.	Like Im doing things the right way.
HOME	Seeing the bradford recycling trucks come for the bins.	How much of an improvement now from bin bags stacked up.
HOME	checking all recycling boxes at home are correctly sorted and putting bins out.	Good, because I show my kids which rubbish goes where.

Petrol Station	Cleared out car @ petrol station - kept recyclable items to be recycled at home.	Great, actively thinking about environment

Home	Take out the cardboard / papers to blue bins.	Nice + easy to do, feels good.

Our recycling bin in the house helps sort everything out before going into the big council bins

20:56

I originally thought the extra bins were overkill but have now got used to them as part of our daily routine

17:12

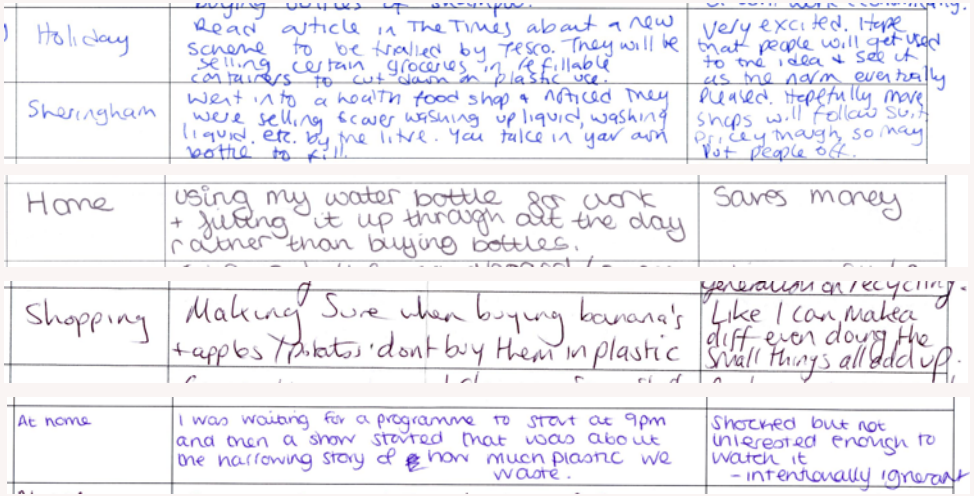
Avoiding plastic waste

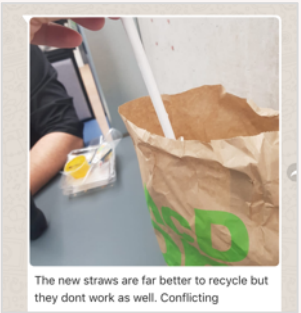
Avoiding plastic waste was the big new behaviour in 2019, following Blue Planet and other coverage of plastic pollution.

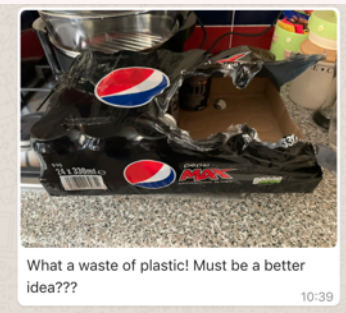
Like recycling, this involves a wide range of thoughts, feelings and behaviours, cropping up frequently across all areas of life, so it makes people feel regularly engaged with environmental issues.

The plastic waste topic has a particular emotional intensity compared to other topics: it calls to mind images of animals dying, minor moral outrage on social media, frustration because we see that more could be done by organisations, annoyance when you forget your bags, the satisfaction when you use your reusable coffee cup or notice some progress in a shop.

In combination, recycling and avoiding plastic waste are a major element of people's daily lives and thoughts.







Consequences of current focus on recycling and plastic waste

Through recycling and avoiding plastic waste, both lighter and darker green respondents think that they are doing a lot for the environment and feel quite good about it. They feel they are taking action at least as much as the average person, and probably more, and they aren't aware of a lot more they could be expected to do, so the focus on plastic waste and recycling allow them to feel better and guilt-free.

However, from an impact perspective, we might call this 'vigorous paddling in the shallows'. People are being kept very busy doing many small actions that don't make the large amount of difference to emissions that's required to act on climate change. They don't know this, and it's not deliberate displacement activity – but it risks acting as such.

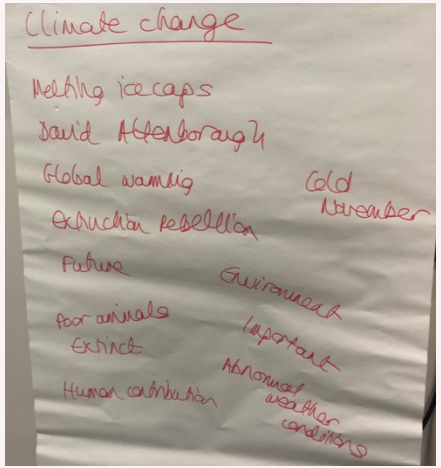
The focus on recycling and plastic waste implies that public understanding of climate change has moved on little in the last ten years. If recycling and plastic waste dominate your personal engagement with this area, it encourages a sense that the problem is physical rubbish or 'mess in the natural world' – tangible things that we can 'fix' by being more careful, rather than emissions which cause global heating.

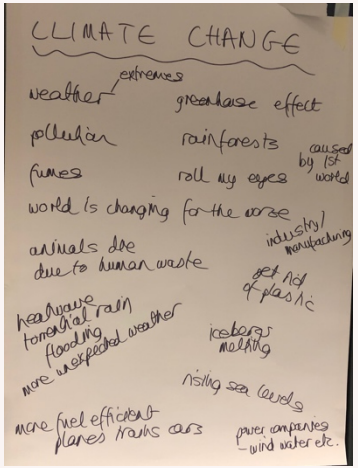
Understanding of climate change

The focus on recycling and plastic waste doesn't help to build an understanding of how emissions from fossil fuels cause global warming.

Associations with climate change were still dominated in 2019 by melting ice caps and polar bears and rising sea levels, as they were in 2009 - plus the new additions of extreme weather, XR and air pollution – but with almost no mentions of emissions, CO2, fossil fuels, net zero or deadlines, or the consequences for human society beyond extreme weather.

It was very clear that extreme weather events have increased conviction that climate change really is happening – people feel they have personally experienced it now, rather than just hearing scientists talking about the data. However, that increased conviction doesn't seem to result in greatly increased concern. The response is quite voyeuristic – it's mostly happening a long way away to other people, and there doesn't seem to be much acute personal concern about the odd heatwave or flood in the UK.





"I started off being quite sceptical about it *[climate change],* years ago, and then too many things seemed to have formed a pattern now. The weather now I think is completely different to how it was when I was younger." (Pre family)

"There's proof as well: the weather's changing, the earthquakes, icebergs, heatwaves, tornados, it's all happening, you're hearing it and seeing it for yourself really." (Younger family)

Extinction Rebellion and Greta Thunberg

Another big new theme that's been recently added to people's thoughts and feelings in this area is Extinction Rebellion, and to a lesser extent Greta Thunberg.

They have undoubtedly greatly raised the profile of climate change and got people talking, but without seeming to spread increased clarity about what needs to be done, or widening identification with the cause.

Extinction Rebellion had alienated most of these respondents, particularly after the tube train episode at Canning Town. Their tactics, to these respondents, seem confused as well as too disruptive. It's unclear what they think should be done and, importantly, they come across not as 'people like us', but 'hippies', 'crusties', the unemployed or the over-privileged.

Greta Thunberg was much less spontaneously mentioned by these people, especially those without children. She's admired to some extent for her willingness to go into high powered situations and her mobilisation of young people, but she's also viewed as rather hysterical and 'other'/not like us, which allows people to observe rather than fully adopt her views.

"Extinction Rebellion has the opposite effect to what is intended, it's really irritating. They're the kind of people I don't like - wasters." (Younger family)

"That little girl who moans. I don't know much about her but I see lots of memes coming along with this girl crying her eyes out - like 'climate change, climate change, save us all' or something." (Pre family)

"Someone superglued themselves to an ambulance - what are you hoping to achieve with that? I don't think any of them really know what they're fighting for." (Pre family)

A polarised discussion

While all respondents were aware that activists are very agitated about a looming climate emergency, it's important to note that there is also awareness of countervailing forces and other points of view – it's not just Extinction Rebellion getting discussed.

People often mention Trump or China, they talk about the possibility of 'fake news' or 'Project Fear', they increasingly hear about the complexity or imperfections of dealing with environmental challenges (e.g. recycling being dumped in the sea).

So while there is conviction that climate change is taking place, how we respond to it feels complicated, confusing and controversial, which is putting some people off talking about it and allows them to feel that what we need to do is not clear yet so they can just 'wait and see'.

"The Extinction Rebellion thing, and Donald Trump, some of the politicians and this young girl, I can't remember her name, it's become an argument ··· 'You need to do something about it and it's real' ··· 'We are doing something about it and it might not even be real' ··· 'you aren't doing enough', 'we are doing enough' ··· it wasn't like that 10 or 20 years ago, it was all a bit quieter." (Younger family)

"It's becoming quite hard to have conversations about certain topics, climate change being one of them. There's a fear of saying something and having a different opinion to someone else. People can get quite 'excited' nowadays." (Pre family)

Where are the gaps?

We observed almost no spontaneous mentions of emissions, CO2, net zero deadlines, or problematic temperature increases. These concepts don't seem to be a part of the daily discourse.

We therefore asked respondents to describe how climate change happens, what emissions are, and how their own activities mitigate climate change. Even the most engaged and knowledgeable respondents struggled to answer.

Emissions were mostly associated with visible fumes from cars and factories, and hence feel more like problems for air quality than something more fundamental; CO2 and fossil fuels were very rarely mentioned. There was only a very patchy understanding of greenhouse gas effects, with some people still resorting to talking about holes in the ozone layer. And there's very little sense of what impact global warming might have on human society, beyond sea levels rising and extreme weather.

There was almost no awareness of commitments to get to net zero by certain dates, what it means, why it's necessary and what it might require.

Most people can't easily explain how the actions they have said their households are taking to tackle climate change actually do so. The most obvious consequences of recycling and avoiding plastic waste are 'less rubbish in the natural world'. If pressed, many do know that if they recycle that means fewer things need to be produced from scratch. which probably saves resources and perhaps energy - but the connection to emissions and warming is not clear. 'What I'm doing' and 'climate change' are separate pictures which aren't well connected.

Another gap in knowledge is what else citizens might have to do in the future – the assumption is 'a bit more of what I'm doing already' and probably getting an electric car at some point.

They imagine there will be new things they'll do that they're not currently aware of, in the same way that we didn't know a few years ago that we'd all be avoiding plastic straws or using a refillable water bottle – but they are waiting to see what transpires. They assume that while future changes might prove a bit annoying, like having to pay for carrier bags, they will be things we can cope with fairly easily – since that's been the pattern so far.

Is this really a crisis?

This research shows major gaps in knowledge and understanding, which result in a gap in emotional response. Because people feel they're doing quite a lot already, don't know what else they should be doing, and don't understand how emissions work or what the consequences of continued warming might be, there's an absence of genuine concern and a lack of a sense that urgent change is required.

People will say they are 'sad' or 'depressed' or 'frustrated', but not alarmed or terrified – we never heard language like 'crisis' or 'emergency'. These people genuinely didn't seem to think that their own lives or those of their children, perhaps even grandchildren, will be much affected.

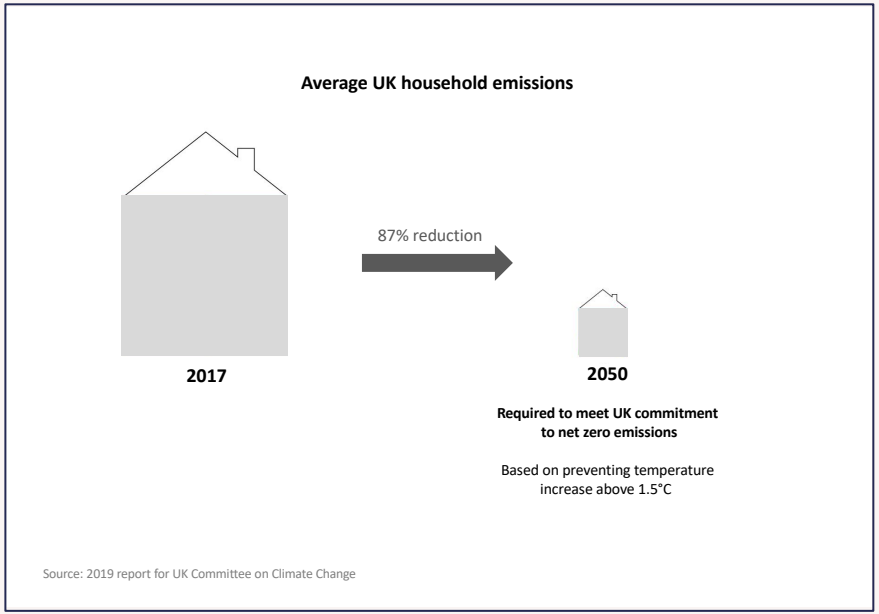
They say, 'if that was the case the government would have told us by now and would be doing something about it'.

And they don't perceive that to be happening, so they assume it's sort of under control and that it probably won't result in the end of the planet in the way that activists seem to predict.

- **A lack of understanding of the fundamentals**
  How climate change happens and its consequences
  What emissions are or how they cause warming
- **No real awareness of emissions reduction targets, timeframes, 'net zero' or catastrophic levels of temperature increase**
- **A poor grasp of what citizens will personally need to do**
  'Household emissions' and its biggest components
  The likely future 'big asks'
- **Acute concern and a sense of urgency**

What next?

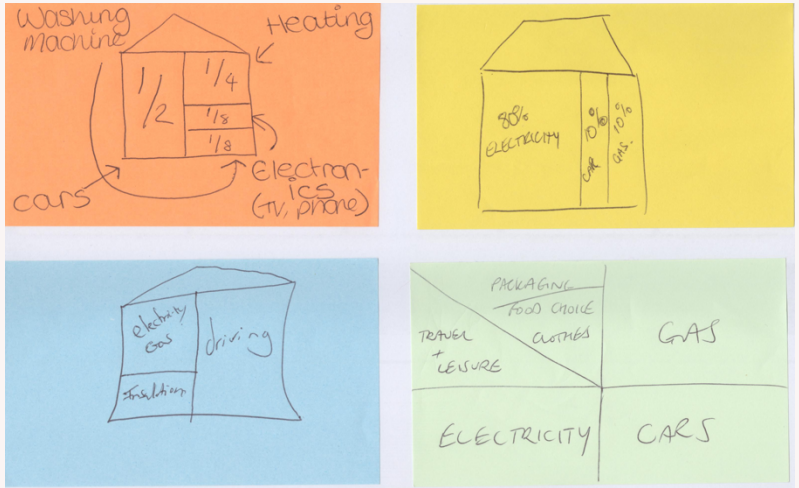
In the final section of the research, we focused on what happens if we tell people more about what might be required from them in a personal sense. We framed citizens' personal contributions in terms of household emissions, using data from the Energy Systems Catapult 'Living Carbon Free' report.



This was completely new news to respondents. They didn't really understand it since they don't think about their own emissions beyond perhaps car use, but it made it look like some drastic change might be required in terms of their personal lifestyles. They don't understand how the 'tiny house' goal has been set and they don't seem familiar with the 1.5 degree warming concept. While they are rather shocked and can't really get their heads round how such a big reduction will be possible, they also look for ways to feel less bad: they'll say 'my household is probably better than average already', '2050 is a long way off', 'lots will have changed in science and technology to help us achieve that', allowing them again to feel that they can wait and see rather than panic.

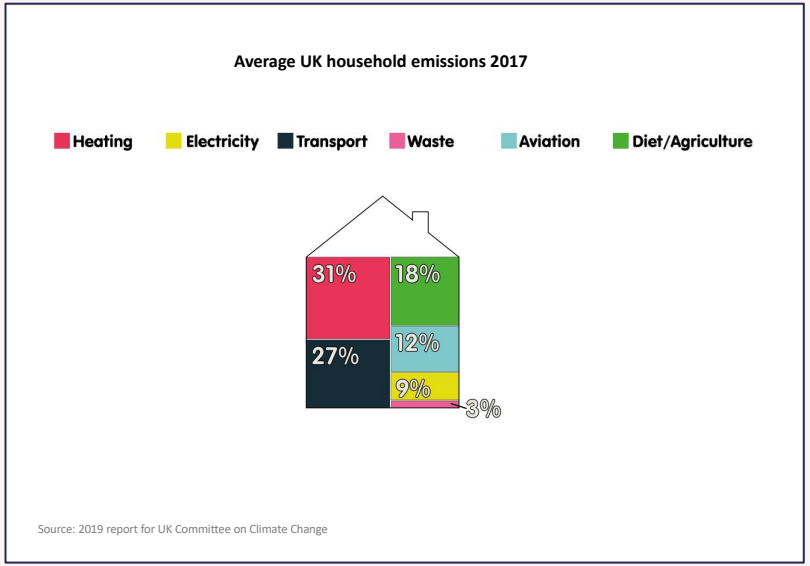
What contributes to household emissions?

We asked them what they thought contributed to their household emissions and they drew things like this:



They mostly think of the use of electricity and gas, as well as their cars. Some also thought about insulation as an influence.

When we showed them figures from the Energy Systems Catapult report, they were very surprised that food and flying are also major contributors, and that electricity outside of heating is relatively low down the list.



Exploring four areas for change

We focused on the top four areas of heating, car use, meat and dairy, and flying, and first asked for spontaneous suggestions on how to achieve a big emissions reduction in those areas, before sharing these four example ‘big asks’.

To significantly reduce your household emissions from heating …

Stop using gas for your heating

To significantly reduce your household emissions from transport …

Switch to an electric car

To significantly reduce your household emissions from diet/agriculture …

Halve the amount of meat and dairy you eat

To significantly reduce your household emissions from aviation …

Take no more than one return flight per person per year

Heating and transport

1. Reducing heating emissions

There was no real spontaneous idea of how to achieve this, beyond installing even more insulation (if that was possible), turning the thermostat down, or building more eco houses.

Moving away from gas is so hard to imagine that people just didn't have much of a reaction – they assume it might require switching to electric heating, which might be more expensive but is at least familiar. When they hear that heat pumps or hydrogen might be required, they get more nervous about the disruption and potential cost. However it seems a very low way off, since they assume a huge amount of systems change and incentivisation would be required, so they don't feel the need to worry about it in the near future.

2. Reducing transport emissions

The spontaneous response regarding how to do this is to imagine trying to use your car a bit less, by walking/cycling/using public transport. That does seem to be already happening to some extent, although only for short journeys and for reasons of cost and health as much as climate change.

When switching to an electric car is suggested, it's almost a relief, because it still allows people to stick to current usage habits, and electric cars have become for most quite an acceptable future transition. A few respondents had noted seeing electric cars, knowing someone who had one, or even test driving them, but for most it's quite a distant proposition.

People have seen electric cars and charging points, know that they will become obligatory at some point and are aware that even prestigious car manufacturers are now making electric cars. But they also think they are expensive and not capable of going a long distance at the moment – and they assume all that would need to be fixed before they'd really have to consider switching. But eventually there could be an upside of saving money on running costs and being seen to have done the right thing.

Diet and aviation

3. Reducing diet/agriculture emissions

Most people assume that emissions in this area relate to food miles or food processing. Only a small minority are aware of cows emitting methane and the effects on deforestation. Some of these respondents were already eating less meat, but not all were aware of the climate impacts. There are a range of other motivations such as personal health, animal welfare, cost and the improved veggie or vegan options you can now find in the supermarket or when you eat out.

When we proposed a goal of halving meat and dairy consumption it was polarising. For 'foodier', more affluent people, eating less meat and more veg seems quite feasible. For others, it seems quite a bizarre idea – they don't know why it would help tackle climate change, they think it would be challenging on a practical level and, emotionally, they feel affronted by the idea of reduced pleasure and personal freedom.

There is little perceived upside for most – although a few who had seen documentaries like Gamechangers on Netflix were motivated by the possible personal benefits to their health and fitness. There is more inclination to reduce meat than dairy: it's hard to regard milk/butter/cheese as an enemy and the alternatives seem to be more expensive and not as tasty. Some respondents and their family members are now using alternative milks quite happily – but may not be aware of an environmental benefit.

4. Reducing aviation emissions

Our respondents do know that flying is 'bad for the environment' – but that doesn't seem to be stopping any of them doing it, because they regard themselves as only doing it occasionally. Most were flying once or twice a year for a holiday or short break – they feel those are well-deserved rewards that they are entitled to. They think that there are many people flying more frequently who should be much more the focus for reduction.

In terms of limiting oneself to one return flight per year: for darker green people who don't fly much and don't need a holiday to be hot and far away to be enjoyable or socially acceptable, this is not out of the question, at least in principle.

But others are extremely resistant to it – it feels like a massive curtailing of pleasure and personal choice, with no possible upside.

There's a real opportunity to clarify how very high flying emissions are, relative to cars, trains/ferries and the other types of household emission, since even the most knowledgeable people really don't know this, and when they find out it does make them at least understand why reducing flying is high up the agenda.

Summary of responses

For each of the four example asks, we've highlighted how much people understand what that change would actually entail and the balance between perceived personal downsides and upsides.

'Big ask'	Clarity of required change in behaviour?	Potential personal downsides?	Possible personal upsides? (benefits beyond environmental)	Net personal impact
1. Stop using gas for heating	Extremely low	X X [if understood]	None envisaged	X X
2. Switch to electric car	High	X	✓ ✓	✓
3. Halve meat and dairy	Medium	X X	✓ [current knowledge]	X
4. One return flight per year	High	X X X	None envisaged	XXX

Conclusions

This research shows that there is a lot of low level personal activity going on that satisfies people. There's also a lot of contextual noise that increases awareness without increasing clarity or commitment. However, there is not much understanding of either the big picture of climate change or the personal changes that lie ahead, nor much acute concern.

While there was definitely resistance to the big changes we highlighted, there was also a sense of relief when we shared potential solutions. People interpreted these as part of a focused plan, based on evidence, that everyone is going to get behind and appeared to respond more positively as a result.

These findings offer a sobering reality check in terms of what citizens are really thinking, feeling or doing at the moment when it comes to climate change.

From a behavioural point of view, we need to remember that simply knowing the right thing to do is not enough to change behaviour. As things currently stand, the actions that people must take and the ambitious national journey they may be part of are not at all clear. It seems that we will need to move on from the dominant narrative of waste reduction and recycling and 'small actions adding up to a big difference' if we are to achieve systemic and behavioural change on the scale that is needed.

What happens next

Next steps

At the debrief on 9th December, we heard a wide range of views about how we might build on this research.

Some favoured next steps, which we are now exploring, include:

- Working together to develop a shared narrative
- Engaging government (especially at a local or city level) and business
- Developing place-based interventions to accelerate solutions
- Collaborating on specific behavioural areas, such as diet

If you have any questions or would like to collaborate on this work going forward, do let us know:

- david@behaviourchange.org.uk / rob@behaviourchange.org.uk
- helen@realworldplanning.co.uk (for detailed questions on the research)

Thank you

What Do Londoners Think About Climate Change?

Results from London Councils' 2020 climate change polling

LONDON COUNCILS

Contents

Background

Cities are engines of growth and prosperity across the globe. As economic and social hubs, they drive innovation and create opportunities for millions around the world. However, their demand for goods and services comes with a high environmental price tag - cities are responsible for 70 per cent of carbon dioxide emissions and are a key driver of climate change. In response to this, many cities across the globe have made commitments to achieving net zero by 2050[1] or before, with London committing to 2030, in order to play their part in keeping warming to below 1.5 degrees above pre-industrial averages.

In London, 28 boroughs, the City of London, and the Mayor of London have now passed climate emergency declarations, and in December 2019, London Councils' Transport and Environment Committee and the London Environment Directors' Network (LEDNet) published a Joint Statement on Climate Change, where a commitment was made to "Act ambitiously to meet the climate challenge that the science sets out, and find political and practical solutions to delivering carbon reductions that also secure the wellbeing of Londoners"[2].

It is vital that the public is fully informed and supportive of the changes needed to reach net zero, and that the diverse voices of Londoners are heard. We need to understand public attitudes to help identify needs, quick wins, and harder to implement areas.

To support this understanding of public attitudes, we are pleased to present the results of London Councils' inaugural public polling on climate change – the first London-specific polling on climate change. We have surveyed over 1,000 London residents about their level of awareness, concern, impacts from, and motivation to take action regarding climate change.

1 https://sdg.iisd.org/news/77-countries-100-cities-commit-to-net-zero-carbon-emissions-by-2050-at-climate-summit/
2 https://www.londoncouncils.gov.uk/node/36755

Methodology

This study was conducted in London via OnLineBus, an Internet omnibus survey run by Research Express, which is part of Kantar UK Ltd. The sample size was 1,006 London adults over the age of 16, who were interviewed by online self-completion from 15 - 19 October 2020 (Week 42). The sample has been weighted to represent the 16+ adult population of London. Where unweighted base figures are less than 100, data should be treated cautiously, as large margins of error are possible. The total estimated London 16+ adult population in 2019 was 7,118,408[3].

We surveyed Londoners across six areas – concern, impact from, and motivation to act; their understanding of climate change; sources of information on climate change; responsibility for solving climate change; how climate change impacts decision-making; and their current and potential behaviour. A full list of the questions can be found in the appendix.

3 https://lginform.local.gov.uk/reports/lgastandard?mod-metric=1754&mod-period=1&mod-area=E12000007&mod-group=AllRegions_England&mod-type=namedComparisonGroup

Key findings

Londoners are aware and concerned about climate change, with concern increasing over the last year. The impacts of climate change are already being felt by a majority of Londoners, who wish to act on climate change and are highly motivated. While they feel everyone is responsible, government support is seen as critical.

Londoners understand that transport has an outsized impact on emissions, but otherwise their knowledge of the differing sectoral impacts on climate change is limited. Without understanding which behaviours are high impact and which not, it is very difficult for the public to understand which areas might be higher priority and in need of greater support.

Nevertheless, Londoners are reducing their environmental impact. They are considering the climate in their day-to-day purchases, and large numbers are undertaking other steps, such as reducing electricity usage at home, lowering the temperature by two degrees and walking and cycling more. Smaller but significant numbers of Londoners have adopted high impact behaviour such as insulating their home, flying less, switching to renewables, and becoming vegan or vegetarian.

Londoners are, however, less likely to consider the climate when making decisions with large climate impacts, such as buying a house or car, planning an event, or taking a holiday. This may well be due to actual and perceived barriers since Londoners are interested in and willing to take up further steps. For the two largest sectors, buildings and transport, Londoners cite cost or lack of availability rather than preference as reasons for not choosing sustainability. Preference is primarily an issue with sustainable diets and to some extent consumer goods and services. There is strong aversion to giving up flying.

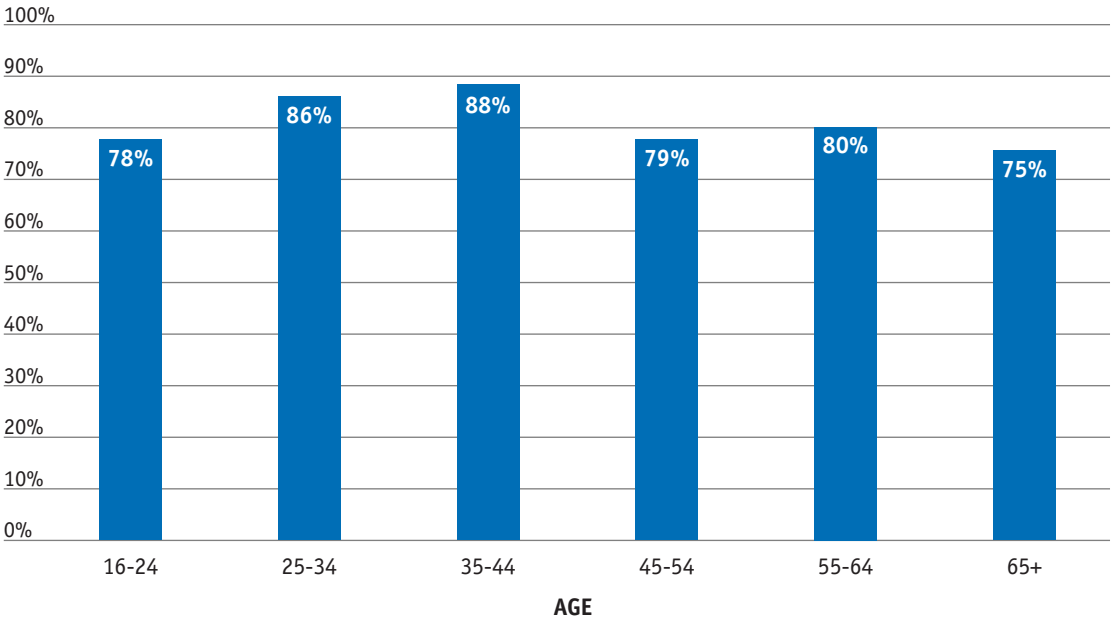
In summary, there is clearly a strong foundation of public support and interest, upon which further policy and programmes can be developed. Public support should be built on through investment in green infrastructure and support for green initiatives in the private, public, and voluntary sectors. Public bodies should work with Londoners to ensure that they are equipped with the tools and knowledge to make sustainable choices and be an active part of a transition to net zero.

Londoners are aware and concerned

Awareness of climate change is very high in London, with 94 per cent of Londoners saying they are very aware or somewhat aware of climate change.

Messages regarding the severity of the problem appear to be cutting through, as 82 per cent of Londoners are concerned about climate change, with 40 per cent describing themselves as very concerned. There is a gender split, with women (85 per cent) being slightly more likely to be concerned than men (80 per cent). However, although there has been considerable focus on young people in recent years, with the sudden arrival of Fridays for Future, it is those in the 35 – 44 age bracket (88 per cent) who show the most concern, as compared to young adults (16 – 24, 78 per cent), which is at a similar level to 45 – 54-year olds (79 per cent) and 55 – 64 year-olds (80 per cent).

Figure 1: **Londoners concerned about climate change by age**



How concerned are you about climate change? Base: All Londoners 16+ (n= 1006)

There is a social gap, with 87 per cent of ABC1s concerned as compared to 76 per cent of C2DEs, and inner London (85 per cent) is more likely to be concerned than outer London (80 per cent). There are no statistically significant differences in concern between those working and non-working, parents and non-parents, and white and BAME, with at least 79 per cent of respondents in each of those groups saying they are concerned about climate change.

With such high levels of concern, it is unsurprising that 71 per cent agreed that addressing climate change in London is a priority based on the view of all the

London boroughs that: "Climate change is a significant threat to London and Londoners, and we need to act quickly and work together to reduce its severity and adapt to its impacts now and in the future" with an equal split between strongly agree and somewhat agree. ABC1s are more likely to strongly agree compared to C2DEs (39 per cent vs 32 per cent), as do inner London residents vs outer London residents (40 per cent vs 33 per cent).

Londoners reject climate denial; only 2 per cent of Londoners do not believe in climate change when asked 'How concerned are you about climate change?'

Concern is increasing across the capital, with 57 per cent of Londoners saying their level of concern has increased in the last 12 months. There is a gender gap, with men's level of concern (53 per cent) not having increased as much as women (61 per cent). The concern of parents has increased (65 per cent) more than that of non-parents (53 per cent). Those with children under 15 at home increased (64 per cent) as compared to those without (53 per cent).

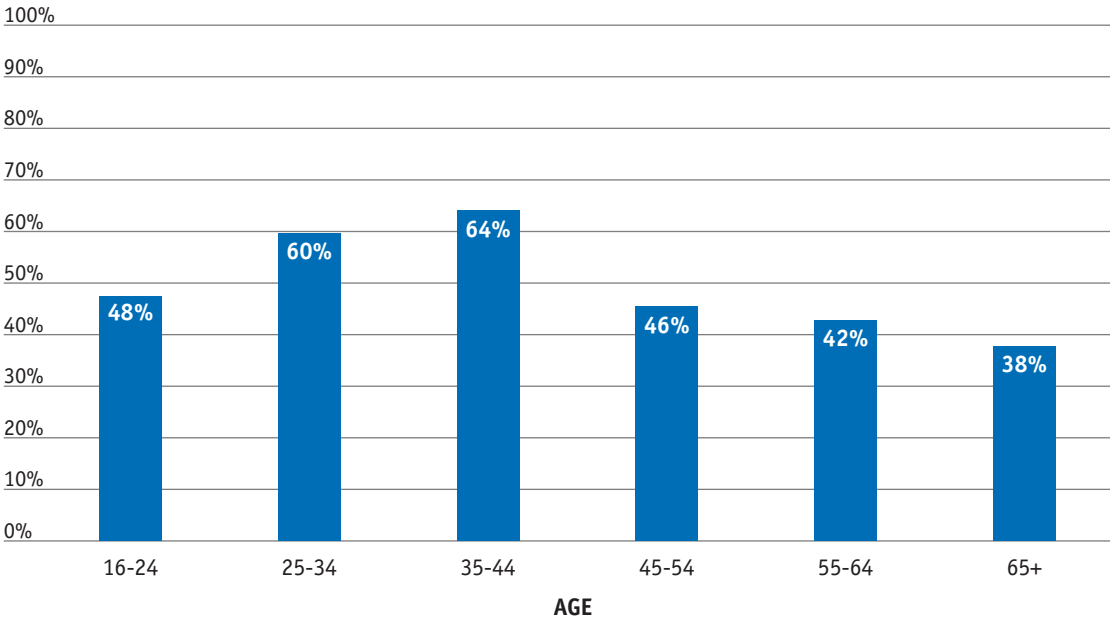
There is a notable generation gap – concern has increased more in younger than older age groups. Increases in the three younger age groups are all above the average, whereas those in the three older age groups are below the average, with increases in concern from 16 – 24 (62 per cent); 25 – 34 (63 per cent); and 35 – 44 (64 per cent) age groups as compared to the 45 - 54 (47 per cent); 55 – 64 (49 per cent); and 65+ (51 per cent).

In addition, those in social grade ABC1 had greater levels of increased concern (61 per cent) compared to C2DE (52 per cent) and concern among BAME groups (65 per cent) increased more than whites (55 per cent). Length of residence in London was a factor in levels of increased concern with those with up to 5 years (69 per cent) showing greater levels of increase compared to those with residence from 5 to over 20 years (55 per cent).

Feeling the impact, and motivated to take action

52 per cent of Londoners say they have been impacted by climate change, with 15 per cent greatly impacted and 36 per cent slightly impacted. Younger people from 25-44 say they are most impacted compared to older people 45-65+.

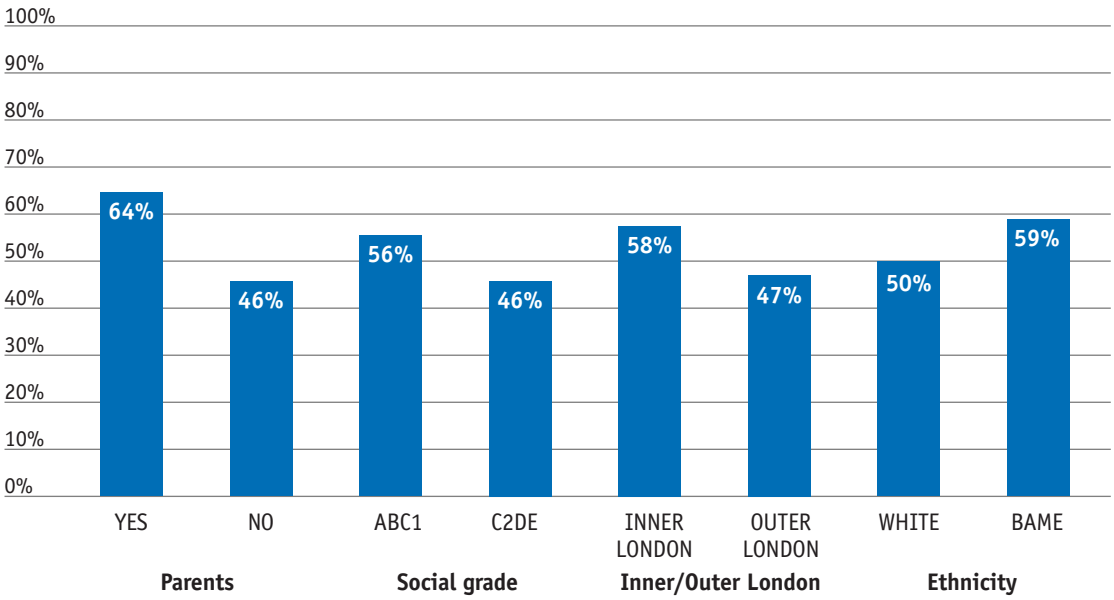
Figure 2: **Londoners impacted by climate change by age**



Do you feel your day-to-day life in London has been impacted by the changing climate, for example in terms of heatwaves or flooding? Base: All Londoners 16+ (n=1006)

Parents say they are impacted more than non-parents (64 per cent vs 46 per cent). Inner London residents say they are more impacted than outer London residents (58 per cent vs 47 per cent). There is also a significant difference by ethnicity in those who say they are impacted, with 59 per cent of BAME respondents saying they are vs 50 per cent of white respondents, though it should be noted both totals are uniformly high.

Figure 3: **Londoners impacted by climate change by category**



Do you feel your day-to-day life in London has been impacted by the changing climate, for example in terms of heatwaves or flooding? Base: All Londoners 16+ (n=1006)

With such high levels of concern and with a majority of Londoners already feeling the impact of climate change, it is unsurprising that 87 per cent of Londoners say they are are motivated to help prevent climate change.

There are some differences between gender, age, social grade and length of residency in London. Nevertheless, the percentages are uniformly high and moreover, it is clear that Londoners do not need to be feeling the impacts of climate change themselves to be motivated to take action.

Women were more likely to be motivated very or somewhat (90 per cent) as compared to men (85 per cent). Men were more likely to be not at all motivated (10 per cent) as compared to women (6 per cent). Those aged 25 – 34 (89 per cent) and 35 – 44 (92 per cent) showed the highest levels of motivation, against those aged 45 - 54 (85 per cent) and 65 and over (80 per cent), who showed the lowest levels of motivation. 11 per cent of 45 – 54 year olds described themselves as not at all motivated (similarly for those aged 16-24 and 65+). 91 per cent ABC1s described themselves as motivated to help prevent climate change against 83 per cent of C2DEs. 17 per cent of C2DEs described themselves as not motivated and 7 per cent of C2DEs gave don't know as a response. 94 per cent of those resident in London up to five years described themselves as motivated against 86 per cent with residency from five to 20 plus years. 14 per cent of those with long-term residency were not motivated, with 9 per cent describing themselves as not at all motivated.

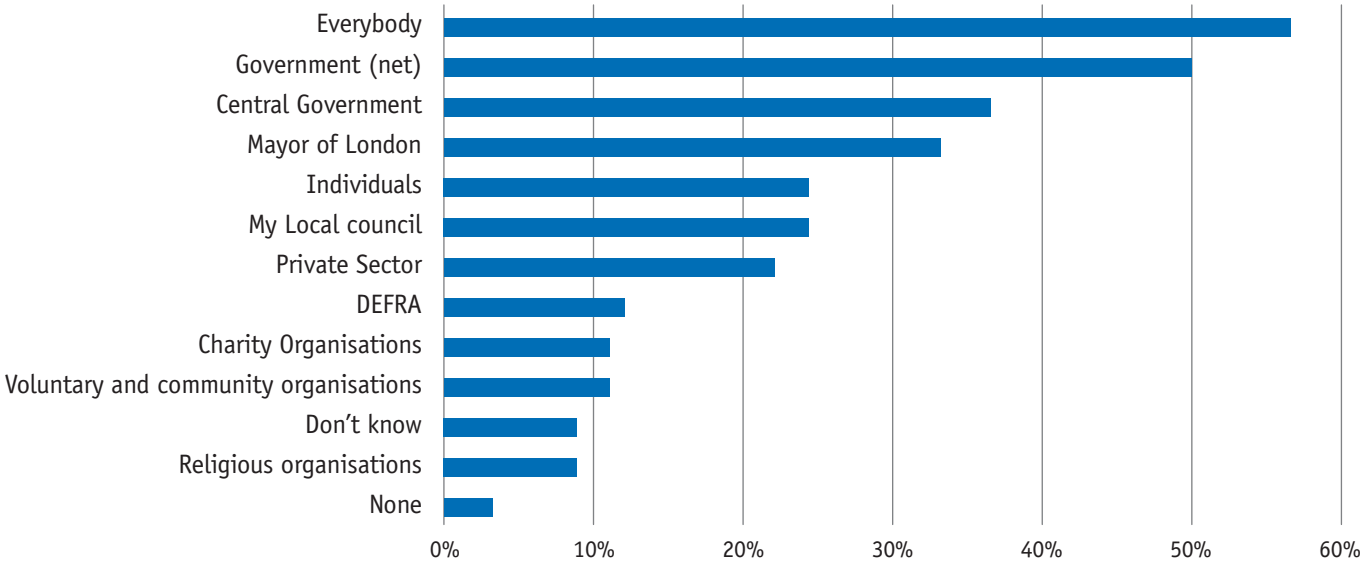
All factors given (environmental impacts around the world (for example forest fires/ droughts/floods), the risk to other species, such as polar bears, the risk of environmental impacts in London (for example flooding), a sense of personal responsibility, wanting to leave behind a healthy planet for future generations, the increasing cost of not changing behaviour) were considered motivating factors by between 89 per cent - 91 per cent, other than increasing costs at 81 per cent. 50 per cent of respondents gave other responses including references to environmental impact, personal responsibility, and public health. As motivational factors are critical to understanding what approaches are needed for different demographics, **a deeper understanding of motivational factors is required.** One potential approach is the work undertaken by Climate Outreach, which segments the UK population by core beliefs with an accompanying toolkit that advises on how to approach these different groups[4].

4 https://climateoutreach.org/britain-talks-climate/

Who is responsible for solving climate change?

The majority of respondents believe everybody is responsible (56 per cent) and half of Londoners believe that governmental bodies are responsible (50 per cent). Governmental bodies (central government; the Mayor of London; my local council, represented by the government (net) figure in the table below) are seen as taking a critical role in solving climate change, with a third of respondents stating that the central government (36 per cent) or the London Mayor (33 per cent) is responsible. This is followed by a quarter believing that local councils and individuals (24 per cent for both) are responsible, with the private sector at 22 per cent.

Figure 6: **Londoners' opinions on whose responsibility climate change is**



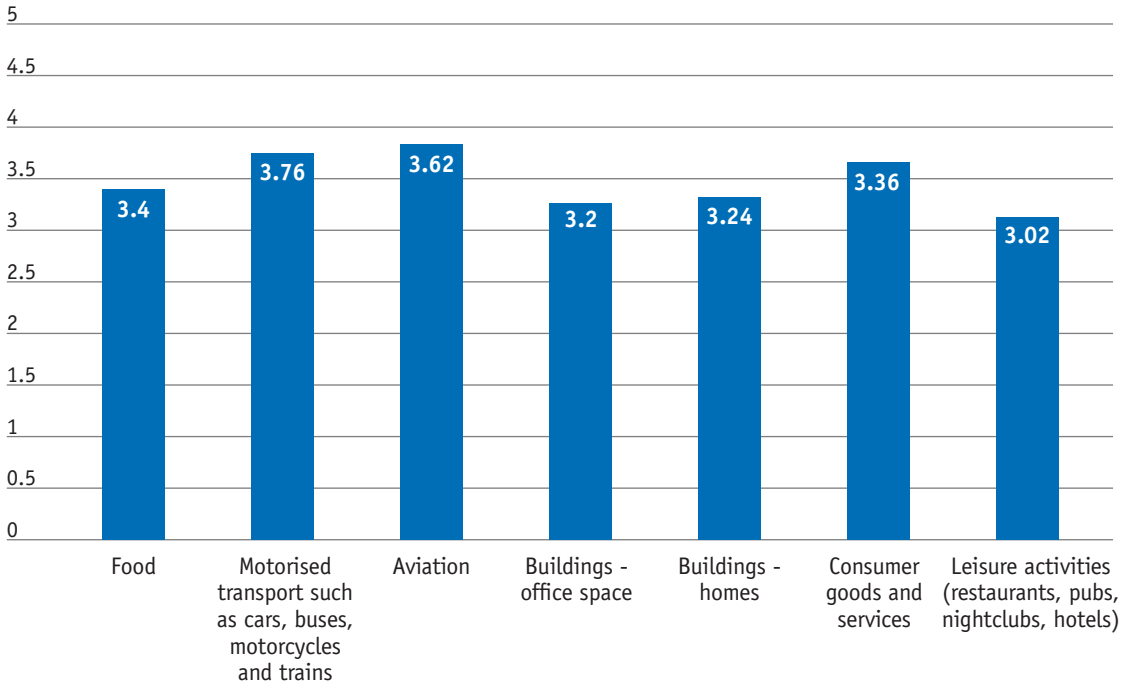
Who do you think is responsible for preventing and adapting to climate change in London?
Base: All Londoners 16+ (n=1006)

There are some significant gaps between gender, age, social grade, and whether respondents are parents. Women are more likely to say everybody (65 per cent vs 47 per cent), as are older people. Men are more likely to say it is the government's responsibility (53 per cent vs 47 per cent). Non-parents are more likely to say it is everybody's responsibility than parents (58 per cent vs 51 per cent). ABC1s are also more likely to say it is the government's responsibility compared to C2DEs (54 per cent vs 45 per cent). Generally, those who are aware or concerned about climate change are significantly more likely to say the government (Mayor of London, my local council, central government,) are responsible vs those who not aware/concerned.

Londoners' understanding of climate change impacts

When ranking the contribution of various sectors to climate change on a scale of 1 to 5, with 5 being a very large contribution and 1 being no contribution, Londoners reported similar levels of belief in the impact of all available categories. Transport was considered the sector with the biggest impact, with motorised transport, such as cars, buses, motorcycles, and trains scoring 3.73 and aviation scoring 3.62. Food (3.4) and consumer goods and services (3.36) were considered to have similar levels of impact, whereas leisure activities (3.02) were considered to have the lowest level of impact.

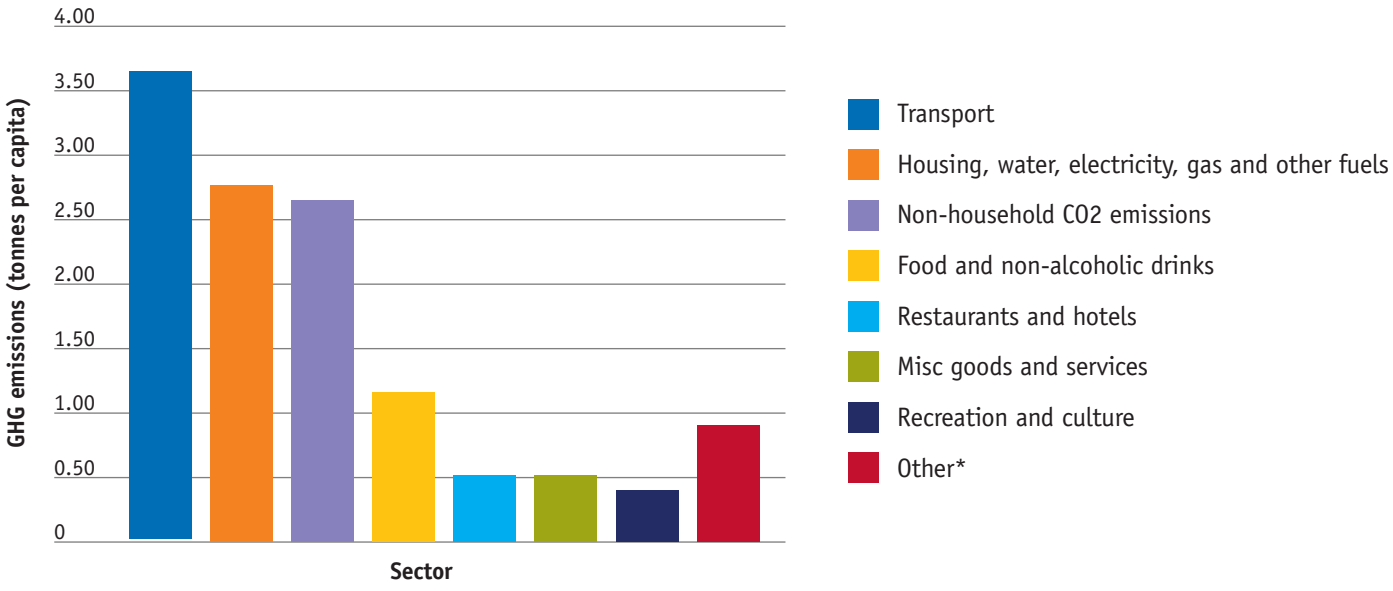
Figure 7: **Londoners' opinions on contribution to climate change by sector**



On a scale of 1 to 5, with 5 being a very large contribution and 1 being no contribution, how much of a contribution to climate change do you think the following sectors make?
Base: All Londoners 16+ (n=1006)

Londoners do not have a correct understanding of which sectors are the biggest contributors to climate change. While Londoners correctly identified transport and buildings as major contributors, they have appeared to have overestimated the impact of the other sectors, when examining responses against consumption-based emissions data. If ensuring that Londoners understand their own impacts is key to preventing climate change, then efforts will be needed to highlight the impact of high contributing sectors such as transport and buildings, and enable Londoners make sustainable choices in these areas.

Figure 8: **London's 2016 consumption-based GHG emissions**



Source: Owen and Barrett, 2020. "Consumption based Greenhouse Gas Emissions for London (2001 - 2016)". University of Leeds.

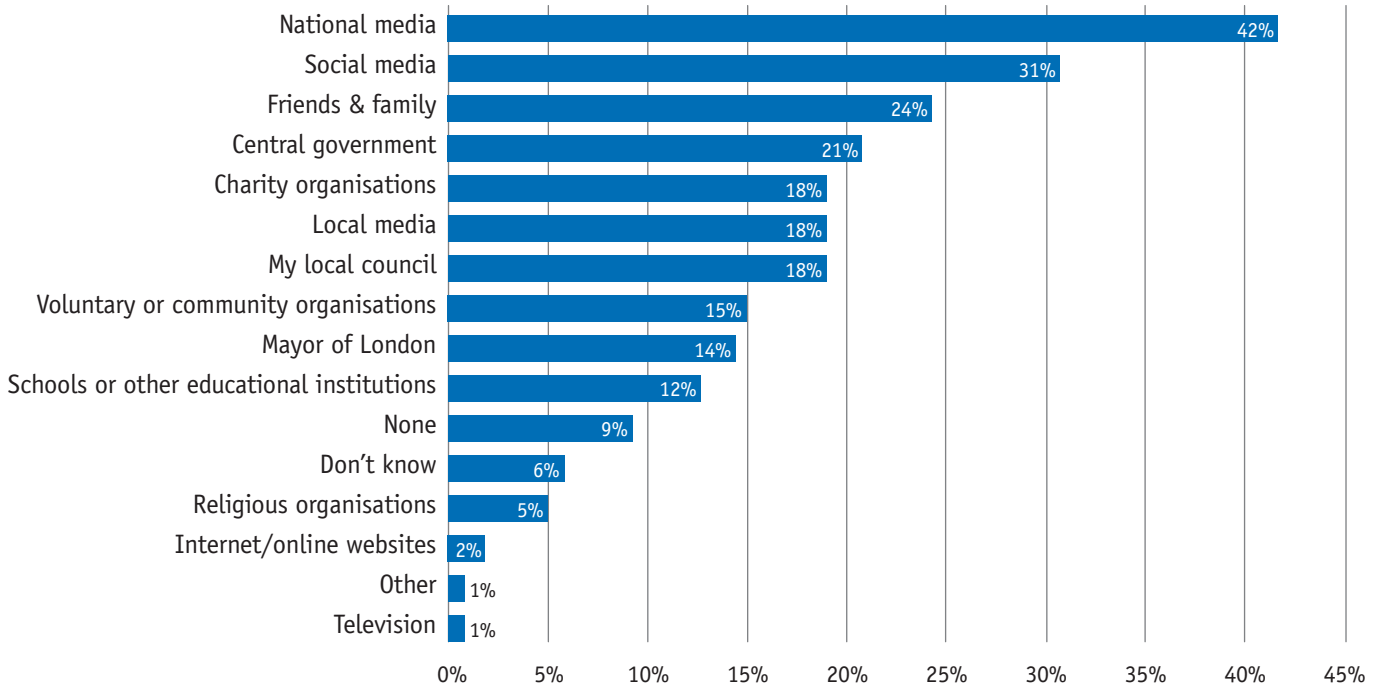
https://www.london.gov.uk/sites/default/files/final_report_-_consumption_ghg_accounts_for_london_-_for_publication.pdf

* Furnishings, household equipment and routine household maintenance, Clothing and Footwear, Health, Communications, Education, Alcoholic beverages and tobacco.

Where Londoners get their information on climate change from

Londoners primarily find information in national media (42 per cent), on social media (31 per cent), and from friends and family (24 per cent). However, there are significant differences across demographics, showing that engagement may not only need to be tailored for different categories of Londoners, but the platform used will also be critical.

Figure 9: **Where Londoners get their climate information from**



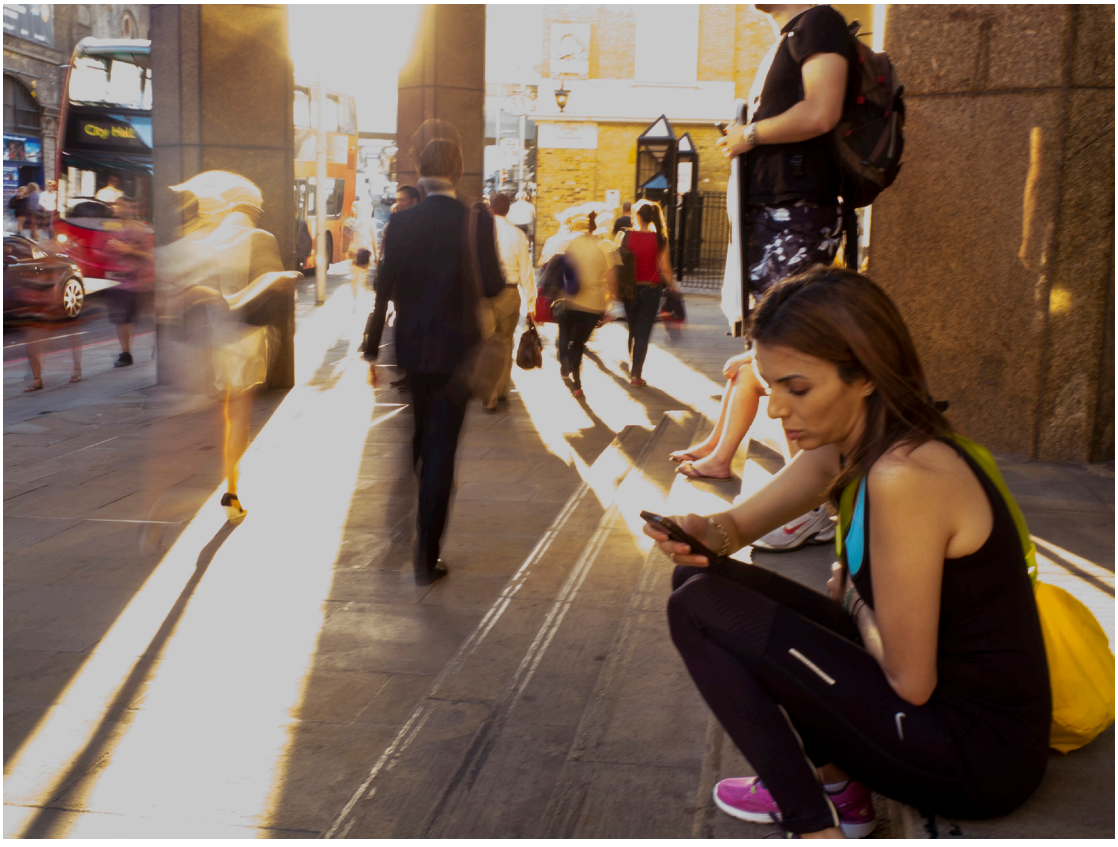
From whom or where do you find information about how to help stop climate change?
Base: All Londoners 16+ (n=1006)

There is a generation gap between the use of national and social media, with use of national media increasing with age and use of social media decreasing with age. The majority (50 per cent) of 16 – 24-year olds stated they find information on social media, as compared to 8 per cent of over 65s. 23 per cent of 16 – 24-year olds receive information from the national media, as compared to 59 per cent of 55 - 64-year olds and 55 per cent of over 65s. National media is more likely to be a source of information for ABC1s (46 per cent), those without children under 15 at home (47 per cent), and whites (46 per cent) as compared to C2DEs (36 per cent), those with children at home (33 per cent),

and BAME (37 per cent). Social media is more likely to be used as a source of information by women (35 per cent) rather than men (27 per cent) and those living in inner London (38 per cent) rather than outer London (26 per cent).

Age was again a factor regarding receiving information from friends and family, with this decreasing in age from 16 – 24-year olds (34 per cent) to over 65s (15 per cent).

Those working (27 per cent) and ABC1s (26 per cent), parents (28 per cent), those with children under 15 at home (29 per cent), and those living in inner London (29 per cent) were more likely to receive information from their friends and family as compared to not working (18 per cent), C2DEs (21 per cent), non-parents (22 per cent), those without children under 15 at home (21 per cent), and outer London (20 per cent).



How climate change affects Londoners' decision making

Day-to-day decision-making

59 per cent of Londoners said climate change affects their day-to-day decision making. 14 per cent of men stated that it doesn't affect their decision making at all, compared to 10 per cent of women. However, there is a significant generation gap, with strong majorities in the 16 – 24 (59 per cent), 25 – 34 (69 per cent), and 35 – 44 (69 per cent) age groups saying climate change affects their decision making, as compared to the slight majority in the 45 – 54 age group (54 per cent), and a minority of the 55 – 64 (49 per cent) and 65+ (42 per cent) age groups.

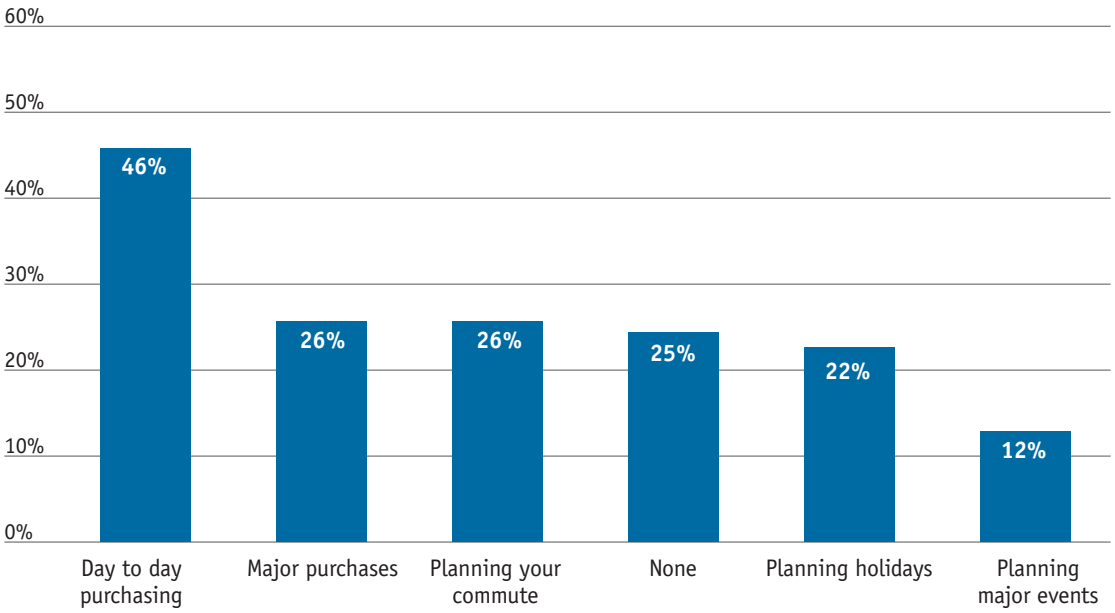
There were also strong splits across a number of demographics, including those working and not (65 per cent and 47 per cent respectively), those who are parents and not (71 per cent and 54 per cent), those with children under 15 at home and not (69 per cent and 53 per cent), social grades ABC1 and C2DE (64 per cent and 52 per cent) and those who have been resident in London longer than five years and those who have not (57 per cent and 70 per cent). Nevertheless, all of those groups had a majority stating climate change affects their decision-making, except for the non-working who had just under half.

Types of decision-making

When asked whether climate change was a factor when considering a range of climate related consumption decisions, including day to day purchases, major purchases, planning a commute, planning a holiday, and planning an event, 75 per cent of Londoners stated that it was.

Almost half of Londoners (46 per cent) consider the climate when making day-to-day purchases. This was followed by major purchases (26 per cent), a commute (26 per cent), none (25 per cent), planning a holiday (22 per cent), and planning a major event (12 per cent). While it is important that the public shifts to sustainable every day habits, considering the climate when making a major purchase or similar is critical as it either leads to a large one off emission of greenhouse gases or locks in large emissions for years to come (for example, if you purchase a high emissions vehicle, or a non-energy efficient house). Although Londoners are considering the climate in day-to-day purchases, **more efforts are needed to support Londoners in making longer term sustainable choices.**

Figure 9: **Londoners opinions on when climate change impacts their decisions**



In what types of decisions is climate change a factor for you? Base: All Londoners 16+ (n=1006)

There were significant differences across demographics. Consideration of climate decreases from extremely high levels as respondents got older. 83 per cent of 16 – 24-year olds, 84 per cent of 25 – 34- year olds, and 81 per cent of 35 – 44-year olds consider climate as part of decision-making as compared to 67 per cent of 45 – 54-year olds, 62 per cent of 55 – 64-year olds, and 61 per cent of 65 and overs.

Across other areas, 80 per cent of those working considered climate as part of decision-making compared to 63 per cent of not working. For parents and non-parents, the proportions were 85 per cent and 70 per cent respectively; for ABC1s 80 per cent, CDEs 67 per cent; those with under 15s at home 85 per cent, those without 69 per cent; those living in inner London boroughs, 79 per cent, outer boroughs, 72 per cent; BAME 80 per cent, whites 74 per cent; those living in London up to 5 years 94 per cent, those living in London from 5 to more than 20 years, 71 per cent. Nevertheless, despite these differences, these numbers are uniformly high and mainly differentiate between very high levels and high levels.

What Londoners currently do, what they might do, and barriers faced

The polling explored what climate-friendly behaviours Londoners are currently doing under four topics (transport, housing, food, and consumer goods and services). In line with the previous findings in the poll, Londoners are undertaking a number of actions that can help reduce their carbon footprint. However, many of the actions are lower-impact actions, such as reducing electricity usage at home, recycling old clothes and electricals, or going meat-free once a week.

It should be noted that some of the responses appear different to what is supported by the available statistics. For example, 10 per cent of Londoners claim to be vegan, whereas nationally, the number is believed to be 1 per cent[5]. Further research would be needed to understand the reasons for such discrepancies. However, the sample is representative, and the responses given form a cohesive and consistent picture. As this polling will be conducted every year, it will be interesting to see where consistent patterns emerge over the longer term.

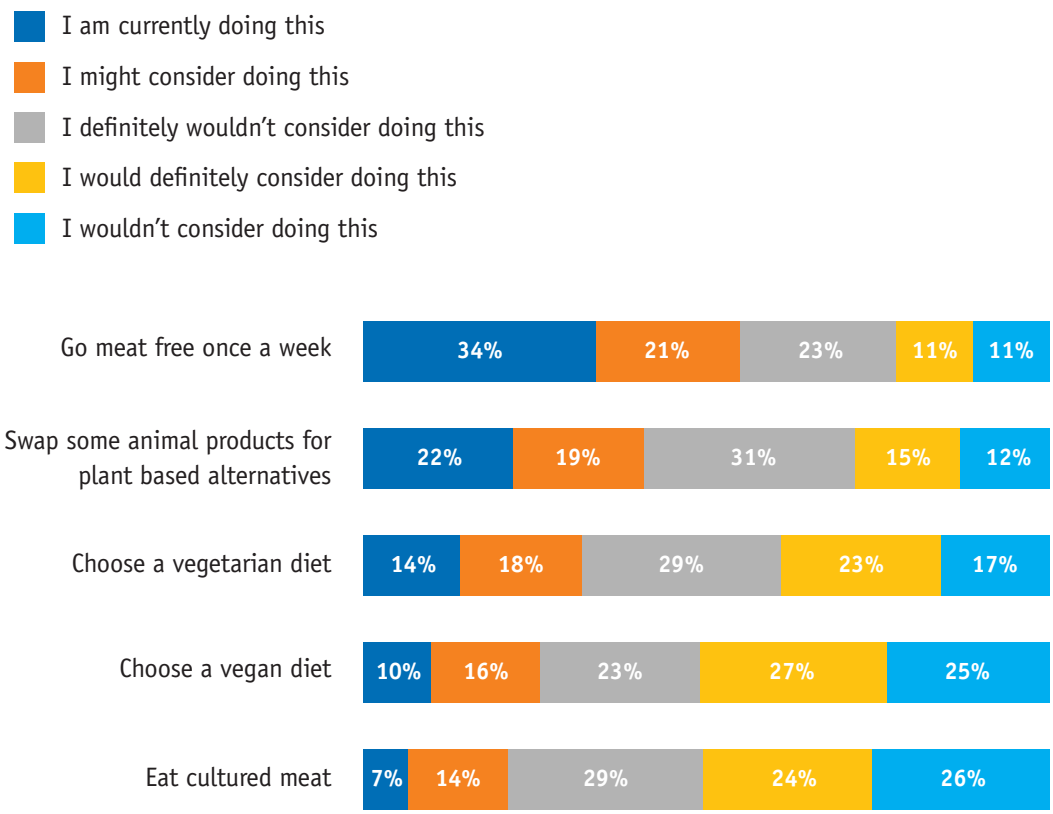
Londoners were also asked which of the behaviours that they would consider adopting and, if they stated they might consider or would not consider certain behaviours, they were asked the reasons why. When examining the results, it should be noted that figures are not available that distinguish between barriers for those who might consider behaviours and those who expressed stronger opposition by stating that they wouldn't or definitely wouldn't consider adopting such behaviours.

Food

Food presents a particular problem for the transition to sustainable lifestyles. It is well understood that the average levels of meat consumption must be significantly reduced in order to meet emissions targets but persuading the public to reduce or give up meat is very difficult.

5 https://www.vegansociety.com/news/media/statistics#vegandietintheuk

Figure 10: **Londoners' attitudes to dietary choices and climate change**



In order to prevent climate change, scientists have said that the general public would need to change their behaviour alongside government and private sector action. Please indicate which options you are doing currently and which you would consider doing in the future to help prevent climate change. Base: All Londoners 16+ (n=1006)

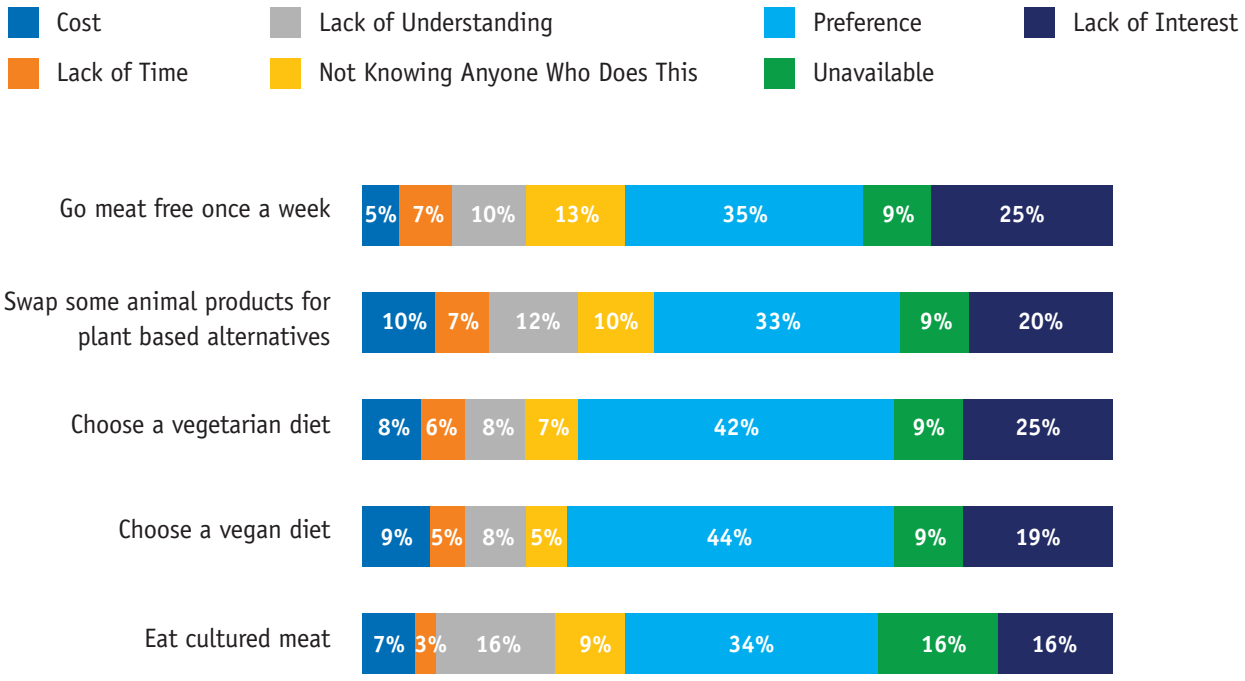
In order to prevent climate change, scientists have said that the general public would need to change their behaviour alongside government and private sector action. Please indicate which options you are doing currently and which you would consider doing in the future to help prevent climate change. Base: All Londoners 16+ (n=1006)

Significant proportions of Londoners are cutting their meat consumption. 34 per cent said they are currently going meat-free once a week, 22 per cent said they are swapping some animal products for plant-based alternatives, 14 per cent said they choose a vegetarian diet, 10 per cent said they choose a vegan diet, and 7 per cent said they are eating cultured meat (meat grown in a factory).

Londoners are willing to reduce their meat intake by going meat-free once a week or using plant-based alternatives. However, a fifth of Londoners wouldn't consider going meat free once a week (22%) and a quarter wouldn't consider using plant-based alternatives (27%). This reticence increases significantly with veganism - a majority of Londoners wouldn't consider doing this.

One concerning finding is regarding cultured meat (meat grown in a vat in a factory). Cultured meat is currently under development and not available to market, but it is viewed as a potential means by which meat can be produced with a very low environmental impact and thereby enable meat eating to continue at current levels. However, this option was less popular than veganism. Nevertheless, there may be a lack of understanding around the topic, as 7 per cent of respondents claimed to eating meat not yet available to market. Moreover, the description of cultured meat as "grown in a vat in a factory" may not be a sympathetic framing. More research would be needed as

Figure 11: **Of those who might/not consider dietary change what are the reasons for their choice**



What is the main barrier to you doing this? Base: All possible rejectors. Choose a vegan diet (n=751), Choose a vegetarian diet (n=684), Swap some animal products (e.g. meat, fish, dairy, eggs) for plant-based alternatives (n=590), Go meat-free once a week (n=453), Eat cultured meat (meat grown in a vat from animal cells, n=800)

cultured meat is gradually released to market (it is only currently available for purchase in Singapore[6]) to further understanding the viability of this option in helping to prevent climate change.

The main barriers to adopting these behaviours were consistent across all the options. Preference came first, ranging from 44 per cent to 32 per cent, then lack of interest (25 per cent to 16 per cent), lack of availability (16 per cent to 9 per cent), lack of understanding (16 per cent to 8 per cent), not knowing anyone who does this (13 per cent to 5 per cent), cost (10 per cent to 5 per cent), and lack of time (7 per cent to 3 per cent). This indicates that shifting dietary habits may present significant difficulties.

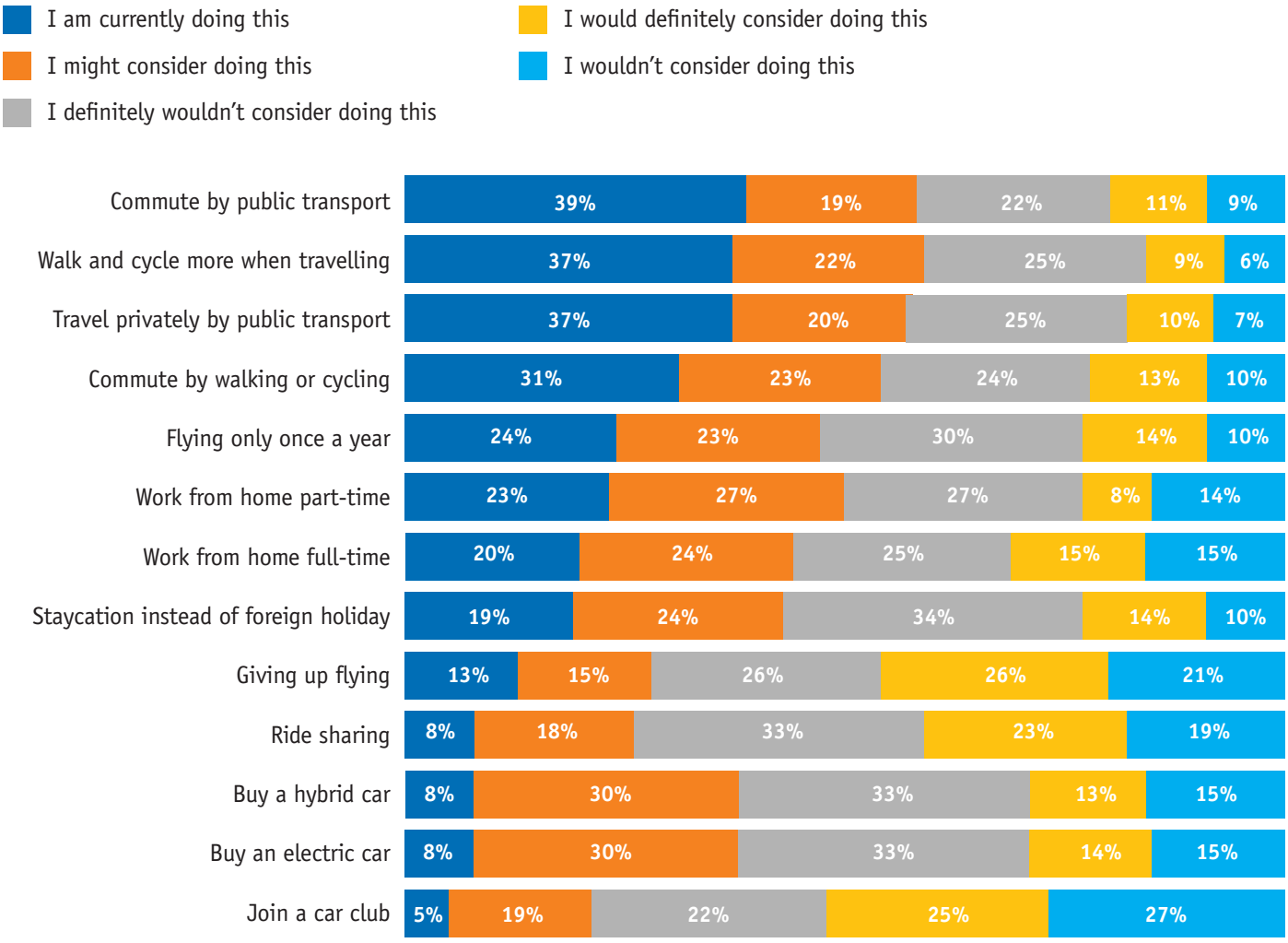
Transport

Transport emissions have remained stable since 2001[7], presenting a substantial on-going challenge. Nevertheless, **Londoners show a considerable interest in active travel** and using public transport, with large majorities willing to consider walking and cycling more and using public transport when travelling privately. Even with behavioural change that is considered more difficult, such as reducing flying, Londoners are willing to consider shifting to only one flight a year, indicating placing an escalator tax on flights (passengers pay increasing amounts of tax for each flight) would not be unpopular. It is interesting to note that joining a car club is more unpopular than giving up flying, and ride sharing is also unpopular, indicating that when Londoners use private transport, they prefer to do so individually.

6 https://www.theguardian.com/environment/2020/dec/02/no-kill-lab-grown-meat-to-go-on-sale-for-first-time

7 Source: Owen and Barrett, 2020. "Consumption based Greenhouse Gas Emissions for London (2001 - 2016)". University of Leeds. https://www.london.gov.uk/sites/default/files/final_report_-_consumption_ghg_accounts_for_london_-_for_publication.pdf

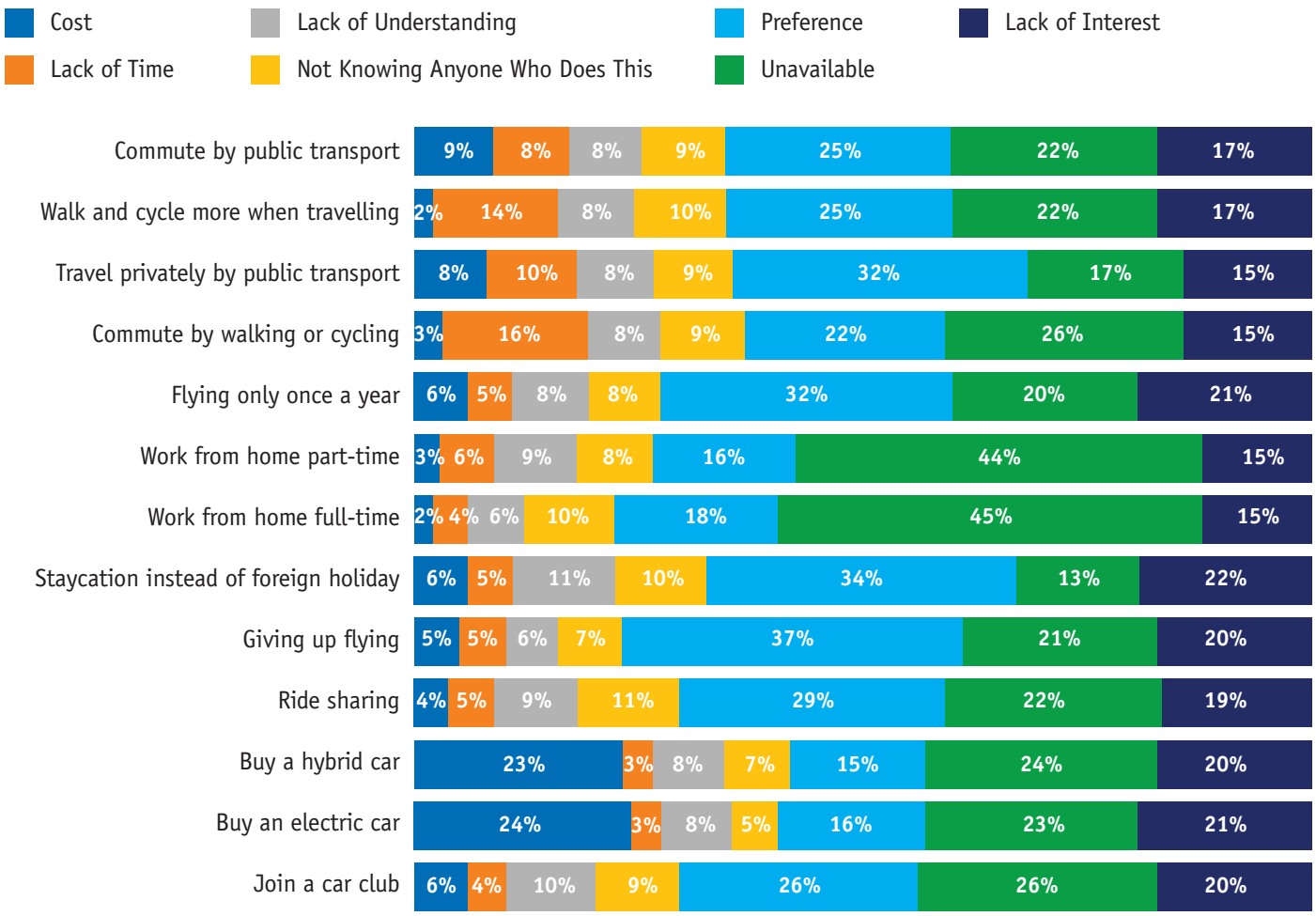
Figure 12: **Londoners' attitudes to travel choices and climate change**



Please indicate which options you are doing currently and which you would consider doing in the future to help prevent climate change. Base: All Londoners 16+ (n=1006)

Low carbon commuting options are chosen by around a third of Londoners, with 39 per cent commuting by public transport and 31 per cent walking or cycling. Almost half of Londoners are working from home either full-time (20 per cent) or part-time (23 per cent). Significant numbers are also walking and/or cycling more when travelling privately (37 per cent) or using public transport instead of the car when travelling privately (37 per cent). 8 per cent of Londoners own a hybrid car, and 8 per cent own an electric vehicle. 5 per cent of Londoners are a member of a car club.

Figure 13: **Of those who might/not consider travel change what are the reasons for their choice.**



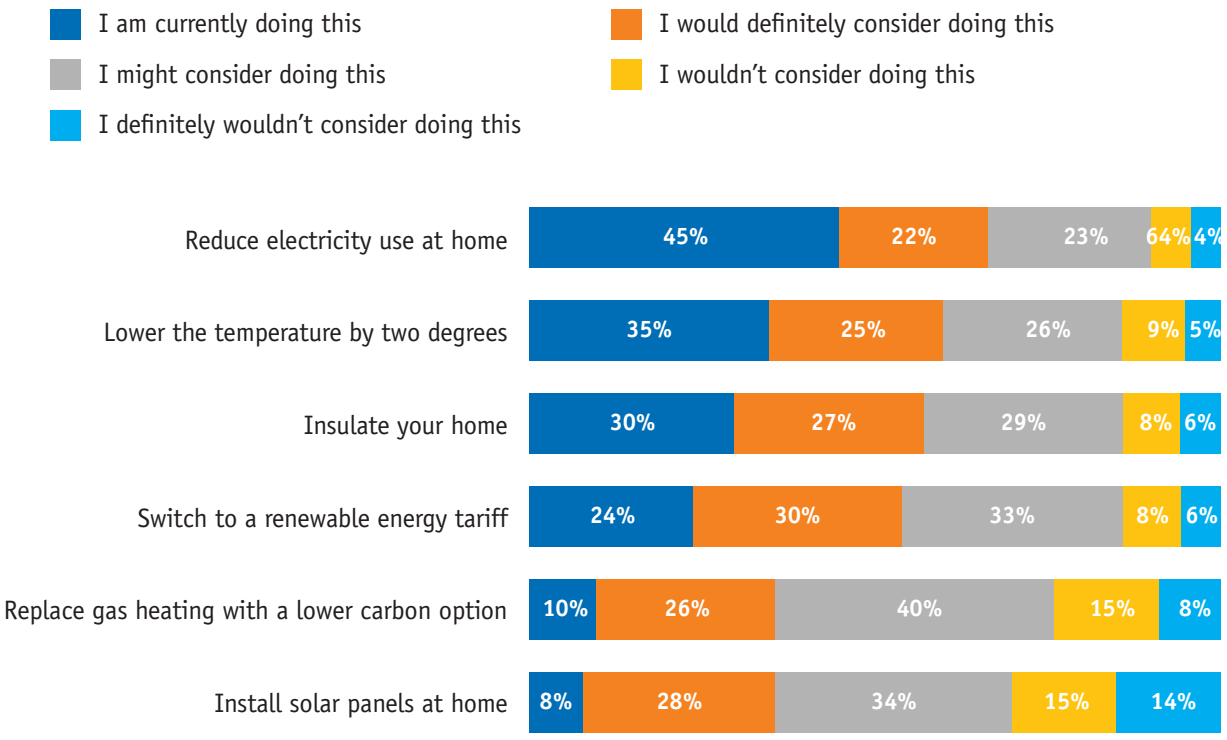
What is the main barrier to you doing this? Base: All possible rejectors. Using public transport instead of the car when travelling privately (not commuting) (n=429), Walk and/or cycle more when travelling privately (not commuting) (n=404), Buy an Electric car (n=626), Buy a Hybrid car (n=620), Ride sharing (n=748), Join a car club (n=791), Commute by public transport (n=422), Commute by walking or cycling (n=468), Work from home part-time (n=499), Work from home full-time (n=554), Giving up flying (n=734), Flying only once a year (n=539), Staycation instead of foreign holiday (n=576).

It is worth noting that the main perceived barrier to working from home either full or part-time is lack of availability, with other less popular options such as giving up flying, ride sharing, buying an electric or hybrid car, and joining a car club also having unavailability cited by at least 20 per cent of respondents. Preference is a key factor for staycation, giving up flying, ride sharing and joining a car club (also flying only once a year and using public transport instead of car for private travel, with cost being a key concern when considering buying a hybrid or electric car.

Housing

The impacts from housing have dropped significantly in recent years, mainly due to the elimination of coal from electricity generation. Nevertheless, with its ageing housing stock and with many of the buildings that will exist in London 2050 having already been constructed, further reductions will need to come from more difficult measures, such as insulation and the replacement of gas boilers with electric heat pumps.

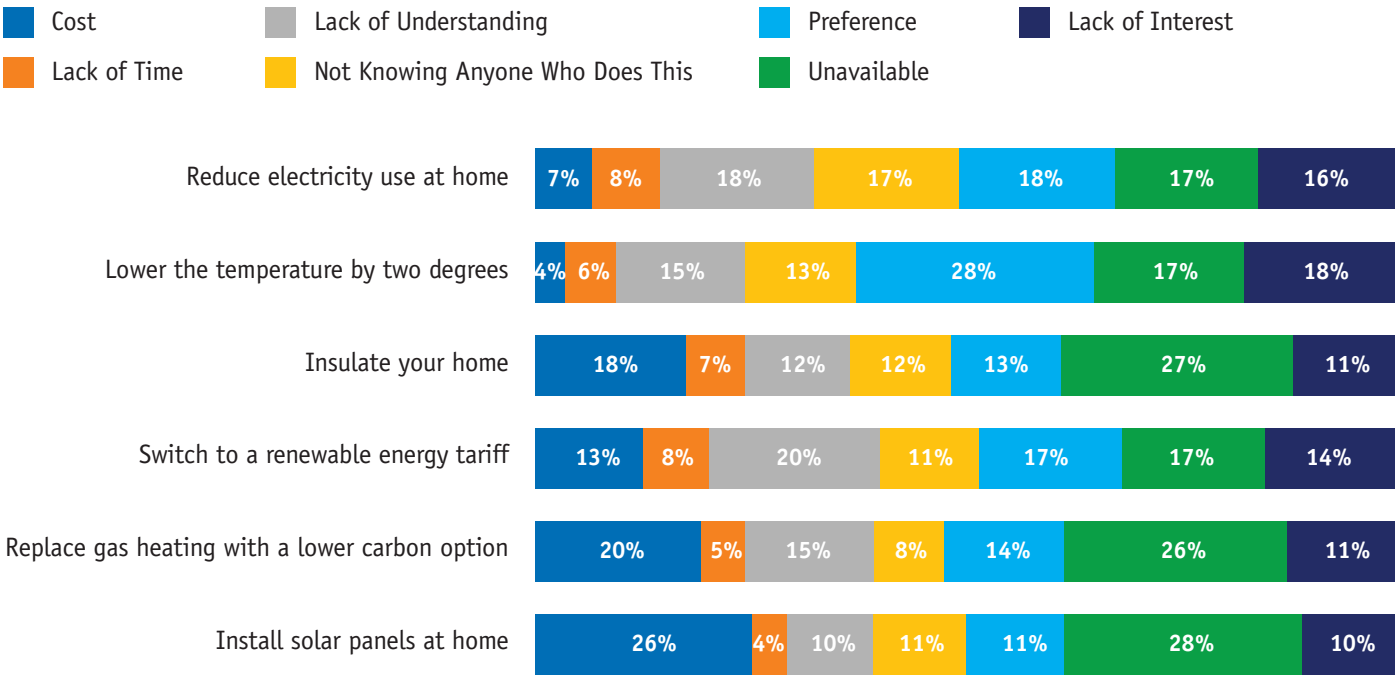
Figure 14: **Londoners' attitudes to home heating and energy choices and climate change**



Please indicate which options you are doing currently and which you would consider doing in the future to help prevent climate change. Base: All Londoners 16+ (n=1006)

Despite issues surrounding support for decarbonising housing, a notable proportion of Londoners are already undertaking significant steps through insulating their homes (30 per cent), switching to a renewable energy tariff (24 per cent), replacing gas heating with a lower carbon option (10 per cent), and installing solar panels (8 per cent). At the same time, Londoners are also taking steps to reduce their carbon emissions through low-effort actions such as reducing electricity use at home (45 per cent) and lowering the temperature by two degrees at home (35 per cent).

Figure 15: **Of those who might/not consider home heating and energy change what are the reasons for their choice**



Please indicate which options you are doing currently and which you would consider doing in the future to help prevent climate change. Base: All Londoners 16+ (n=1006)

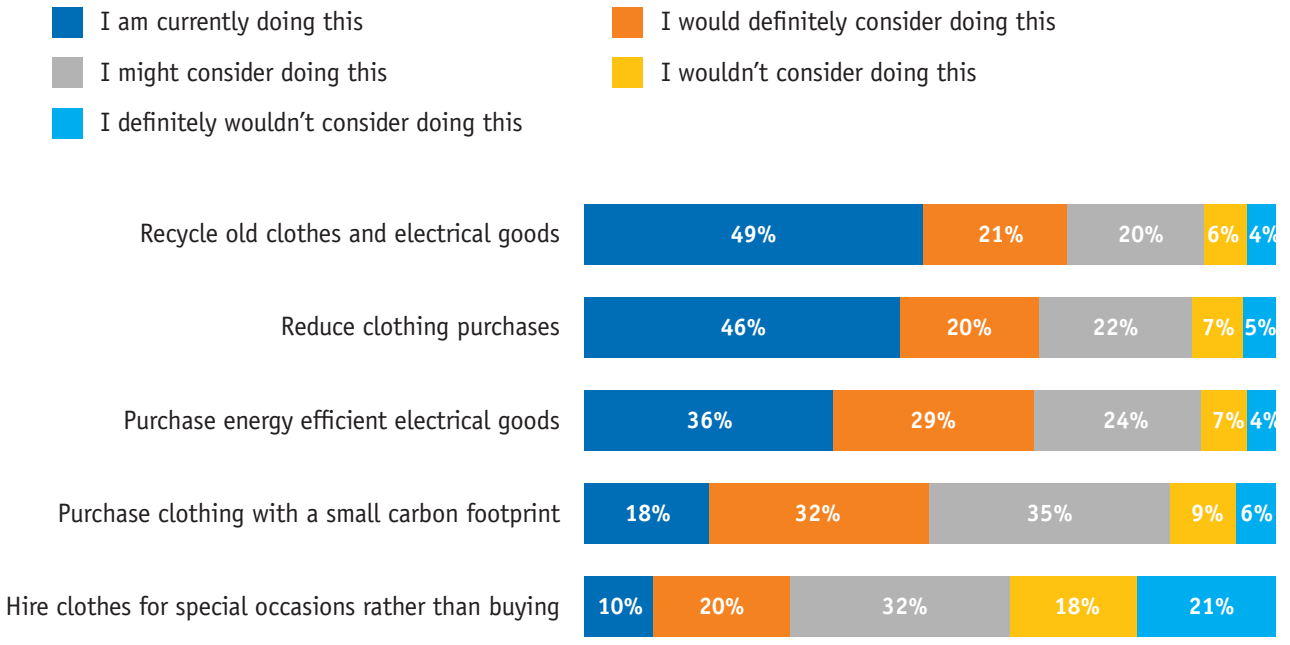
What is the main barrier to you doing this? Base: All possible rejectors. Insulate your home (n=433), Replace gas heating with a lower carbon option such as a heat pump or electric storage heaters (n=638). Install solar panels at home (n=640), Switch to a renewable energy tariff (n=468), Reduce electricity use at home such as appliances and lights (n=326), Lower the temperature by two degrees at home (n=399).

Only replacing gas heating and installing solar panels at home had more than 20 per cent of respondents stating that they wouldn't consider those options. The main reasons are a perceived lack of availability and cost, rather than a lower issue with preference. This is strong support for policy initiatives such as the Green Homes Grant and indicates there would be public support for further expansion.

Consumer goods and services

It has already been explained in this report that consumer goods and services do not comprise a significant part of Londoners' greenhouse gas footprints. Nevertheless, as purchasing consumer goods and services are an everyday activity, it can be a proxy for sustainable attitudes. Londoners are either undertaking positive sustainable behaviours in this area or are willing to do so.

Figure 16: **Londoners' attitudes to consumption choices and climate change**

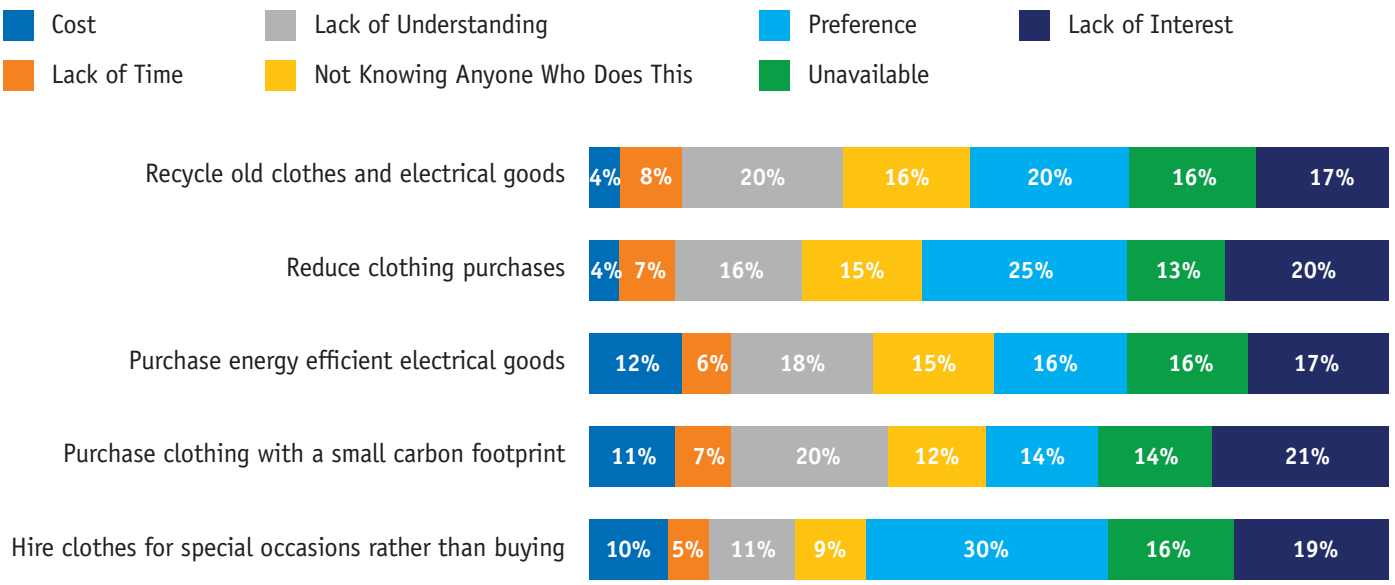


Please indicate which options you are doing currently and which you would consider doing in the future to help prevent climate change. Base: All Londoners 16+ (n=1006)

Londoners are currently reducing their impact across a range of behaviours. 49 per cent of Londoners are recycling old clothes and electrical goods. This is followed by reducing clothes purchases (46 per cent), purchasing energy efficient electrical products (36 per cent), purchasing clothes with a small carbon footprint (18 per cent), and hiring clothes for special occasions rather than buying (10 per cent).

For all options, other than hiring clothes for special occasions, the reasons for not doing or not definitely considering doing are fairly even. For hiring clothes, almost a third cite preference as the reason not to do this.

Figure 17: **of those who might/not consider consumption change what are the reasons for their choice**



What is the main barrier to you doing this? Base: All Londoners 16+. Purchase clothing with a small carbon footprint (n=499), Reduce clothing purchases (n=341), Hire clothes for special occasions rather than buying (n=702), Purchase energy efficient electrical goods (n=358), Recycle old clothes and electrical goods (n=307).

Conclusion and Next Steps

With the current average carbon footprint of Londoners far above sustainable levels, significant changes to our ways of living and working will be needed to meet the challenge of climate change. This polling demonstrates that Londoners are willing to step up to meet this challenge, but there are two significant issues that will need to be addressed.

Firstly, while Londoners are clearly concerned and motivated to take action, Londoners will need to have a greater knowledge regarding their footprints and the differing levels of impact of the varied types of behaviour and lifestyles. Without this understanding, it will be difficult for them to understand what areas of their lifestyle will need changing and what support they may need. There is a great deal of evidence that such messages will need to be based on the concept of sustainable ways of living being desirable, highlighting the added benefits and not on guilt-based messages .

Secondly, an enabling environment for sustainability will need to be established in London, supported by the public, private and third sectors. Support amongst Londoners for active travel, green buildings, and more sustainable diets and shopping habits will need to be encouraged through offering green goods and services within a supporting policy framework and physical infrastructure. Londoners need to be supported both in their day-to-day choices, but also at key moments of change when unsustainable behaviours can be locked in, through decisions on where to live, how to get to work, and what car to drive.

Thirdly, different approaches will be needed for London's diverse communities. The polling has revealed a number of significant differences across demographics. Further research, both through engagement with the public through focus groups and workshops as well as segmentation analysis, would help to deepen understanding and provide further clarity on opportunities and barriers to action.

This polling demonstrates that there is a strong foundation for climate action in London. The support for an ambitious programme of action is there - this ambition amongst the general public needs to be matched by policy makers and the private sector. If they all show the courage and resolve needed and deliver the funding required, the ambitious targets for 2030 set by the national government and London boroughs can be realised.

9 McLoughlin, N, Corner, A., Clarke, J., Whitmarsh, L., Capstick, S. and Nash, N. (2019) Mainstreaming low carbon lifestyles. Oxford: Climate Outreach https://climateoutreach.org/download/15949/

10 Beacon for Sustainable Living Project (2020) Communications Scan on Sustainable Living https://beacon4sl.com/wp-content/uploads/2020/08/Beacon-Communications-Scan-DRAFT-July-2020-compressed.pdf

Appendix: List of Survey Questions

Q001 - VBB: Base: All Londoners

The following questions will ask for your opinions on climate change, also known as global warming.

Q002 - VBC: Base: All Londoners

How aware are you of climate change?

1 Very aware
2 Somewhat aware
3 Not very aware
4 Not aware at all

The Met Office's definition of climate change is "a large-scale, long-term shift in the planet's weather patterns and average temperatures".

Q003 - VBD: Base: All Londoners

How concerned are you about climate change?

1 Very concerned
2 Somewhat concerned
3 Not very concerned
4 Not concerned at all
5 I don't believe in climate change
6 Don't know

Q004 - VBF: Base: All Londoners

Has your level of concern over climate change changed in the last 12 months?

1 It has increased a lot
2 It has increased slightly
3 It has not changed
4 It has decreased slightly
5 It has decreased a lot
6 I don't believe in climate change
7 Don't know

Q005 - VBG: Base: All Londoners

How motivated are you to help prevent climate change?

1 Very motivated
2 Somewhat motivated
3 Slightly motivated
4 Not at all motivated
5 Don't know

Q006 - VBH: Base: All Londoners

How motivating are the following factors in making you determined to help prevent climate change?

	Very motivating	Somewhat motivating	Slightly motivating	Not at all motivating	Don't know
Environmental impacts around the world (forest fires/droughts/floods)	O	O	O	O	O
The risk to other species such as polar bears	O	O	O	O	O
The risk of environmental impacts in London (e.g. flooding)	O	O	O	O	O
A sense of personal responsibility	O	O	O	O	O
Wanting to leave behind a healthy planet for future generations	O	O	O	O	O
The increasing cost of not changing my behaviour (e.g. variable car costs)	O	O	O	O	O
Another factor not listed above – please type in *Open *Fixed	O	O	O	O	O

Q007 - VBJ: Base: All Londoners

How much does climate change affect your decision-making in your day-to-day life?

1 It affects my decision-making greatly
2 It affects some of my decision-making
3 It doesn't affect my decision-making that much
4 It doesn't affect my decision-making at all
5 Don't know

Q008 - VBK: Base: All Londoners

In what types of decisions is climate change a factor for you? Pick as many as apply

1 Day to day purchasing decisions such as routine shopping, eating or buying clothes
2 Major purchases such as buying a car or house or choosing somewhere to rent
3 Planning major events such as weddings, birthdays, and religious festivities
4 Planning your commute or how to travel to work
5 Planning your holiday(s)
6 None

Q009 - VBL: Base: All Londoners

From whom or where do you find information about how to help stop climate change? Pick as many as apply

1 Mayor of London
2 My local council
3 Central Government
4 National media
5 Local media
6 Social media
7 Schools or other educational institutions
8 Charity organisations
9 Voluntary or community organisations
10 Religious organisations either local or national
11 Friends and family
12 Other – type in *Open *Fixed
13 None *Fixed
14 Don't know *Fixed

Q010 - VBM: Base: All Londoners

On a scale of 1 to 5, with 5 being a very large contribution and 1 being no contribution, how much of a contribution to climate change do you think the following sectors make?

	1 No contribution	2	3	4	5 Very large contribution
Food	O	O	O	O	O
Motorised transport such as cars, buses, motorcycles, and trains	O	O	O	O	O
Aviation	O	O	O	O	O
Buildings – office space	O	O	O	O	O
Buildings – homes	O	O	O	O	O
Consumer goods and services	O	O	O	O	O
Leisure activities (restaurants, pubs, nightclubs, hotels)	O	O	O	O	O

Q011 - VBN_FOOD: Base: All Londoners

In order to prevent climate change, scientists have said that the general public would need to change their behaviour alongside government and private sector action.

Please indicate which options you are doing currently and which you would consider doing in the future to help prevent climate change

	I am currently doing this	I would definitely consider doing this	I might consider doing this	I wouldn't consider doing this	I definitely wouldn't consider doing this
Choose a vegan diet	O	O	O	O	O
Choose a vegetarian diet,	O	O	O	O	O
Swap some animal products (e.g. meat, fish, dairy, eggs) for plant-based alternatives	O	O	O	O	O
Go meat-free once a week	O	O	O	O	O
Eat cultured meat (meat grown in a vat from animal cells)	O	O	O	O	O

If respondent answered "I might consider doing this" or "I wouldn't consider doing this" or "I definitely wouldn't consider doing this" then they are asked:

Q012 - VBN_FOODBARRIER: Base: All possible rejectors

What is the main barrier to you doing this?

	Cost it is too expensive	**Time** I don't have time to do this	**Understanding** I don't understand what I would need to do	**Social** I don't know anyone else who does this	**Preference** I don't think I would like this/I don't want to do this	**Unavailable** this option isn't possible for me (e.g. no market availability/too impractical/ someone else's responsibility)	**Interest** it isn't a priority for me
Choose a vegan diet	O	O	O	O	O	O	O
Choose a vegetarian diet,	O	O	O	O	O	O	O
Swap some animal products (e.g. meat, fish, dairy, eggs) for plant-based alternatives	O	O	O	O	O	O	O
Go meat-free once a week	O	O	O	O	O	O	O
Eat cultured meat (meat grown in a vat from animal cells)	O	O	O	O	O	O	O

Q013 - VBN_TRANSPORT: Base: All Londoners

Please indicate which options you are doing currently and which you would consider doing in the future to help prevent climate change

	I am currently doing this	I would definitely consider doing this	I might consider doing this	I wouldn't consider doing this	I definitely wouldn't consider doing this
Using public transport instead of the car when travelling privately (not commuting)	O	O	O	O	O
Walk and/or cycle more when travelling privately (not commuting)	O	O	O	O	O
Buy an Electric car	O	O	O	O	O
Buy a Hybrid car	O	O	O	O	O
Ride sharing	O	O	O	O	O
Join a car club	O	O	O	O	O
Commute by public transport	O	O	O	O	O
Commute by walking or cycling	O	O	O	O	O
Work from home part-time	O	O	O	O	O
Work from home full-time	O	O	O	O	O
Giving up flying	O	O	O	O	O
Flying only once a year	O	O	O	O	O
Staycation instead of foreign holiday	O	O	O	O	O

If respondent answered "I might consider doing this" or "I wouldn't consider doing this" or "I definitely wouldn't consider doing this" then they are asked:

Q014 - VBN_TRANSPORTBARRIER: Base: All possible rejectors

What is the main barrier to you doing this?

Barriers are the same as Q012.

Q015 - VBN_HOUSING: Base: All Londoners

Please indicate which options you are doing currently and which you would consider doing in the future to help prevent climate change

	I am currently doing this	I would definitely consider doing this	I might consider doing this	I wouldn't consider doing this	I definitely wouldn't consider doing this
Insulate your home	O	O	O	O	O
Replace gas heating with a lower carbon option such as a heat pump or electric storage heaters	O	O	O	O	O
Install solar panels at home	O	O	O	O	O
Switch to a renewable energy tariff	O	O	O	O	O
Reduce electricity use at home such as appliances and lights	O	O	O	O	O
Lower the temperature by two degrees at home	O	O	O	O	O

If respondent answered "I might consider doing this" or "I wouldn't consider doing this" or "I definitely wouldn't consider doing this" then they are asked:

Q016 - VBN_HOUSINGBARRIER: Base: All possible rejectors

What is the main barrier to you doing this?

Barriers are the same as Q012.

Q017 - VBN_CONSUMERGOODS: Base: All Londoners

Please indicate which options you are doing currently and which you would consider doing in the future to help prevent climate change

	I am currently doing this	I would definitely consider doing this	I might consider doing this	I wouldn't consider doing this	I definitely wouldn't consider doing this
Purchase clothing with a small carbon footprint	O	O	O	O	O
Reduce clothing purchases	O	O	O	O	O
Hire clothes for special occasions rather than buying	O	O	O	O	O
Switch to a renewable energy tariff	O	O	O	O	O
Purchase energy efficient electrical goods	O	O	O	O	O
Recycle old clothes and electrical goods	O	O	O	O	O

If respondent answered "I might consider doing this" or "I wouldn't consider doing this" or "I definitely wouldn't consider doing this" then they are asked:

Q018 - VBN_CONSUMERGOODSBARRIER: Base: All possible rejectors

What is the main barrier to you doing this?

Barriers are the same as Q012.

Q019 - VBN: Base: All Londoners

Do you feel your day-to-day life in London has been impacted by the changing climate, for example in terms of heatwaves or flooding?

1 Yes, greatly
2 Yes, slightly
3 No, not much
4 No, not at all
5 Don't know

Q020 - VBP: Base: All Londoners

Who do you think is responsible for preventing and adapting to climate change in London? Pick as many as apply

1 Mayor of London
2 My local council
3 Central Government
4 DEFRA

5 Private Sector
6 Voluntary and community organisations
7 Charity organisations
8 Religious organisations, either local or national
9 Individuals
10 Everybody
11 Other – type in *Open *Fixed
12 None *Fixed *Exclusive
13 Don't know *Fixed *Exclusive

Q021 - VBQ: Base: All Londoners

The view of all the London boroughs is that: "Climate change is a significant threat to London and Londoners, and we need to act quickly and work together to reduce its severity and adapt to its impacts now and in the future." Do you agree that addressing climate change in London is a priority?

1 Strongly agree
2 Somewhat agree
3 Neither agree nor disagree
4 Somewhat disagree
5 Strongly disagree
6 I don't believe in climate change
7 Don't know

Q022 - VBR: Base: All Londoners

How long have you been living in London?

1 Under a year
2 1-2 years
3 2-5 years
4 5-10 years
5 11-20 years
6 20+ years

Q023 - VBS: Base: All Londoners

Do you own a car?

1 Yes, one
2 Yes, two
3 Yes, more than two
4 No
5 I use a car club

Q024 - VBT: Base: All who own a car

Thinking of your main car, what type of car is it?

1 Petrol
2 Diesel
3 Hybrid
4 Electric

Q025 - VBV: Base: All Londoners

Do you cycle in London?

1 Yes, I cycle as part of my commute
2 Yes, I cycle for pleasure
3 No, I do not cycle at all *Exclusive

Q026 - VBW: Base: All Londoners

Do you use public transport regularly in London – regularly means at least once a week?

1 Yes, I use it for commuting
2 Yes, I use it for leisure/social activities
3 No *Exclusive

Q027: VBW: Base: All Londoners

This survey includes sensitive questions related to ethnicity. All sensitive data collected in this survey will remain confidential in line with our privacy policy. These questions are sensitive, and they might make some people uncomfortable. Do you agree to answer these questions?

1 Yes, I agree to participate
2 No, I do not agree to participate

Q028: Base: All who agree to answer sensitive question

What is your ethnic group?

1 British / English / Welsh / Scottish / Northern Irish
2 Irish
3 Gypsy or Irish Traveller
4 Eastern European
5 Any other White background
6 White and Black Caribbean
7 White and Black African
8 White and Asian
9 Any other Mixed / Multiple ethnic background
10 Indian
11 Pakistani
12 Bangladeshi
13 Chinese
14 Any other Asian background
15 African
16 Caribbean
17 Any other Black / African / Caribbean background
18 Arab
19 Any other ethnic group
20 Prefer not to say

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LWARB REVEALING REALITY

SHARING A HOUSE, SHARING RESPONSIBILITY

RECYCLING IN LONDON'S HMOS

Contents:

Introduction

Are HMOs a big part of the recycling problem?

Despite the efforts of many Londoners, the capital is struggling to improve its recycling performance. The Mayor's London Environment Strategy[1] set recycling targets of 50 percent of Local Authority Collected Waste by 2025, with an aspirational target of 50 percent for household waste by 2030. Yet still, in a city of nine million-odd inhabitants, where the Mayor and 26 boroughs have declared a climate emergency[2], recycling rates lag behind the national average: 33 percent of total household waste in the city is recycled, compared to 44 percent nationally[3].

The reasons are many, but Houses of Multiple Occupation (HMO)—where more than three tenants share common areas—are thought to be a particularly challenging and hard-to-reach target for local authorities. They represent a growing housing trend, yet there is a perception that they are a contributor to lower recycling performance. Understanding their real recycling behaviours is therefore important to understanding overall performance.

Resource London supports London boroughs to deliver more consistent and efficient waste and recycling services. Its research helps to identify opportunities to ensure London reaches its recycling targets.

This project aims to take a 'deep dive' approach to look at HMO households that have kerbside recycling. It seeks to build a new understanding of the barriers to recycling for sharers living in HMOs, and how that compares with purpose-built flats. By revealing these barriers, this report provides opportunity areas that can compel readers to take action to improve HMO recycling rates.

1 https://www.london.gov.uk/sites/default/files/london_environment_strategy_0.pdf
2 https://www.londoncouncils.gov.uk/our-key-themes/environment/climate-change
3 https://resourcelondon.org/wp-content/uploads/2019/12/Appendix-1-waste-and-recycling-data-201819-analysis.pdf

About HMOs

Houses of Multiple Occupation are defined as properties that are rented out by at least three people who are not from the same household (or from the same family). They have individual bedrooms but share communal facilities, and are sometimes referred to as a 'house share'.

More than 210,000[4] properties in the capital are HMOs, making up a significant—and growing—proportion of the London housing market. Anecdotal evidence suggests HMOs have a poor recycling performance, and as properties that are rented by three or more people of different backgrounds/families, there are inherent difficulties around responsible waste management. Transience is also a challenge and is hypothesised to be an important reason for why HMOs may recycle poorly.

Our research suggests that HMOs are highly varied, with no two households the same. They have wide-ranging occupant numbers, age ranges and household types (both flats and houses), while a single HMO could include friends or strangers. The occupants of HMOs are diverse: students, young professionals, social housing tenants, rehoused homeless, new migrants to the UK, and asylum seekers temporarily placed in HMOs by the Home Office. In short, there is no typical HMO.

In our sample, we focused on HMOs that are privately rented, whose tenants included a range of students and professionals, and that housed between three and eight residents. For this project, it was decided not to focus on overcrowded or illegal HMOs where other more pressing social issues such as widespread illegal subletting, overcrowding or uninhabitable properties are inherent. The HMOs targeted were selected because they were expected to have higher potential for improvements around recycling. It was thought they would have fewer pressing social issues that might conflict with their desire and ability to increase recycling. Also that they might have less antagonistic relationships with their local council or landlords and so be receptive to communications about recycling.

4 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/493559/Local_Authority_Housing_Statistics__England__year_ending_March_2015.pdf

Ethnographic methods gave us insight into living and recycling in an HMO

Ethnographic methods combining interview and observational research were chosen to understand in depth people's day-to-day lives in HMOs. This approach allowed us to gather a broad range of evidence of both attitudes and behaviours[5].

The research involved spending extended amounts of time with people in their household to understand the context in which they live and to observe their interactions with their domestic environments. Where possible the researchers observed the residents preparing food and speaking to other housemates. In addition to the ethnographic methods, the research also included online diary tasks.

Given that recycling is generally seen as a socially desirable behaviour, we didn't reveal to the research participants that recycling was the central focus of the project. Instead, we described it as being about household relationships and chores, including recycling. A key benefit of this approach was that research participants didn't overly prepare or change their recycling set-ups in advance of the research and they were less conscious about behaving in a 'socially desirable' way around waste issues in front of the researcher.

Much waste management research is technical and not based on a resident-centred perspective. A key benefit of our ethnographic research is that the evidence base is built on residents' lived experience.

Note: Previous ethnographic research was carried out in 2018 to explore recycling practices in a different kind of property, purpose-built flats. This was published in the 'Recycling in Reality' report[6].

5 See Annex for more detail on ethnographic methodology.

6 https://resourcelondon.org/wp-content/uploads/2019/02/Recycling-in-reality-report.pdf

Ethnographic methods gave us insight into living and recycling in an HMO

22 people

Stage 1
Online pre-tasks

Selfie videos
Video home tour
Photos around their home
Written tasks
Chore diaries

6 people

Stage 2
Online post-tasks

Photos of bins in and around the home
Selfie videos about waste and recycling behaviours in the home

16 people

Stage 2
In-home depth interview

Lasting 3 hours
Observation of cooking activity
House tour

*There's further information on sample breakdown in the Appendix

LWARB REVEALING REALITY

How might we improve recycling in HMOs?

The aim of this report is to give insight into what life in an HMO looks like, and to provide a starting point for how to implement innovative solutions to low recycling rates in these households—for local authorities, for waste managers, and for landlords.

Specifically, we set out to:

- Understand how HMO households organise domestic chores, why they organise as they do, and the range of different arrangements
- Within the overall chores set-up, understand individual residents' behaviours around storing, sorting and disposing of waste and the barriers in the way of such activities
- Examine the environmental, personal and social norms of occupants relating to recycling behaviours
- Explore the influence of household dynamics, specific to HMOs, on recycling and the role of landlords in shaping the waste management practices of residents
- Understand what sources of information are used by residents to inform their waste management practices
- Provide recommendations on how residents of HMOs may be engaged to become more effective recyclers

After sections that introduce the HMOs and look at how well residents were recycling, the document is structured into three key opportunity areas based on the major findings from the research. At the end of each section, under 'How might we…' statements, we have highlighted the main areas for improvement. These allow readers to start thinking about concrete actions to improve recycling behaviours and effectiveness in HMOs.

The 'How might we…' statements identify leverage points for behaviour change so that stakeholders can develop interventions tailored to the needs of their residents. These are aimed at a range of key actors (e.g. local authorities, landlords) who can engage people living in HMOs in different ways.

Meet the HMOs

Who lives in HMOs?

We sought out respondents from boroughs both south and north of the river where prior research has indicated there to be a high number of HMOs—Croydon, Kingston upon Thames, Lewisham, Southwark, Ealing, Haringey and Brent. For the purposes of this research, we chose areas that have kerbside collection and that meet the Mayor's expected standard of collection service—six dry recycling materials and separate food waste[7].

We identified people with a range of characteristics and life situations. Overall, the majority of households were working or studying. There was a mix of settled and transient households, and none housed multiple families with children.

The sample included undergraduate and postgraduate students, professionals and those working shifts or on temporary contracts. Few were unemployed. This meant we captured a range of different routines.

- Overall, HMO residents were aged between 21 and 49 years old, which included some households of 'older sharers' who were over the age 39.
- Households included those who had grown up in the UK, along with those who had moved from abroad, from countries such as India, Portugal and Chile.
- Tenancy types varied from sublets to yearly contracts. Respondents had been living in their properties for between two months and 10 years. There was some transience but many of the households were fairly settled.
- All properties were privately rented through a management company or private landlord. Some households had live-in landlords[8].

Throughout the report, there are case studies from participants. All names have been changed to pseudonyms.

[7] Five boroughs are co-mingled with 240L recycling bins, Kingston and Croydon are twin stream with different capacities. Four boroughs provide 240L residual bins, the other three offer 180L

[8] Further detail on sample can be found in the appendix

What are the social dynamics of HMOs?

HMOs differ from other property types in that they are, by definition, made up of multiple unrelated individuals.

One of the objectives of the research was to understand how different social dynamics within HMOs influence recycling behaviour. This section describes the different social dynamics seen across the sample and sets out the context for the challenges described in later sections of the report.

Social dynamics ranged from friendly to indifferent

Some households in this research were made up of close friends—groups of young people from home or university who had moved in together to form tight-knit, highly sociable households from where other friends came and went. They tended to adorn rooms with plants or photos, and some even had pets who were "part of the family".

Others contained people who barely spoke to each other, or actively tried to avoid interaction. These respondents may have only met the other sharers at the time of moving in or had known just one person before signing up. They would often put this distance down to different personalities or interests. In several households there was one sharer who would spend more time by themselves in their room, and would be more isolated from the other sharers. Other HMO residents we met would get on well enough with other sharers to head to a local pub quiz or hold friendly conversations in the common living area.

While there was no major conflict seen across the households, some friction was caused by the playing of loud music, by individuals using their housemate's kitchen appliances and leaving them dirty, or by general uncleanliness around the property. Despite some disagreements, we found a general positive environment in these households.

Grant, 45
Haringey

"I don't know much about him, he's odd. We [with live-in landlord] agree that he has to move out, but we don't want to leave him homeless either"

Juliet, 30
Lewisham

"I sometimes stay here [kitchen] with other flatmates and have breakfast together"

Ellie, 45
Merton

"They're all nice people, and fun… I should make an effort to talk to them"

Jordan, 25
Southwark

"We prepared a Christmas dinner all together. It was very nice, we had a great time"

Structured rules around household chores were almost non-existent

Overall, whatever the household dynamics, we observed that residents rarely had a structured set of rules or systems in place to divide up household chores or ensure the household ran smoothly.

In the majority of properties, there was an implicit understanding that everyone would do their bit. There was a general assumption that everyone would keep the communal spaces clean and tidy—for example, washing up after they had cooked. Most were of the opinion that everyone was an adult and could take responsibility.

The majority did not have conversations around household chores; when they did, this tended to be around washing up communal cooking items, and rarely around waste management. In a few cases, one household member would take greater initiative or responsibility for household chores, doing more chores themselves or trying to check in to see if other people had done what they said they would. This was more often in households with close friends (where these conversations would not lead to fallouts) or those who had lived there for longer (who had established more of a leadership role). Sometimes these people felt a small amount of resentment, but most accepted that this was the trade-off when living with other people.

It was rare to see households with a cleaning rota. Those which did have some sort of system tended to be households where one or two people had lived there for a long time and were more invested in the property—for example, because they spent a lot of time there, were the landlord, or they valued the low rent and wanted to ensure their landlord did not have a reason to evict them.

Seven households within the sample had cleaners who were responsible for the communal areas. In the majority of these cases, cleaners were instigated by the landlord or management company and not the tenants themselves. However, in two of the households, an individual tenant had decided to take responsibility for the cleaning, and received a discount on their rent from other tenants as a result.

Both of these scenarios meant that often individuals did not feel as much responsibility for household chores, and by extension, recycling. Interestingly, often taking the bins out was not within cleaners' remit and so responsibility for this fell to the tenants. There is further information on cleaners in the description of Problem 1 – "No collective ownership".

What are waste set-ups like?

Because properties were set up for multiple sharers, communal spaces were generally large enough to accommodate multiple bins. All houses had a bin for residual waste and a recycling container available (typically a bin or a box), which was always in the kitchen or living area, including the homes of those who were recruited as having low recycling motivation or were not recycling at all. Many households also used a council-provided food waste caddy, which in most cases came with the property, although a few of the tenants had ordered them from the council themselves.

Only one household bought a recycling bin for their current home, and this was because the entire property was unfurnished and they moved in all at the same time. They reported they didn't think much about it and just chose the most convenient ones, considering both size and price.

Some more modern properties had built-in under-counter bins with multiple compartments, although residents weren't always using these to separate materials. In one particular case, the sharers had two built-in bins under the counter which they used for 'recycling', leaving them with no general waste bin. This respondent confessed he thought that everything could be recycled and so was putting all residual waste into the recycling.

Because these houses generally had good sized communal rooms, there was little need for residents to improvise around storage of waste in the communal areas by using things such as makeshift bags or shelves. In Grace's house, for example, they relocated their former outdoor recycling box to indoors even though it wasn't in the best condition. A few households did use large shopping bags to collect their recycling next to the general waste bin which they emptied and reused.

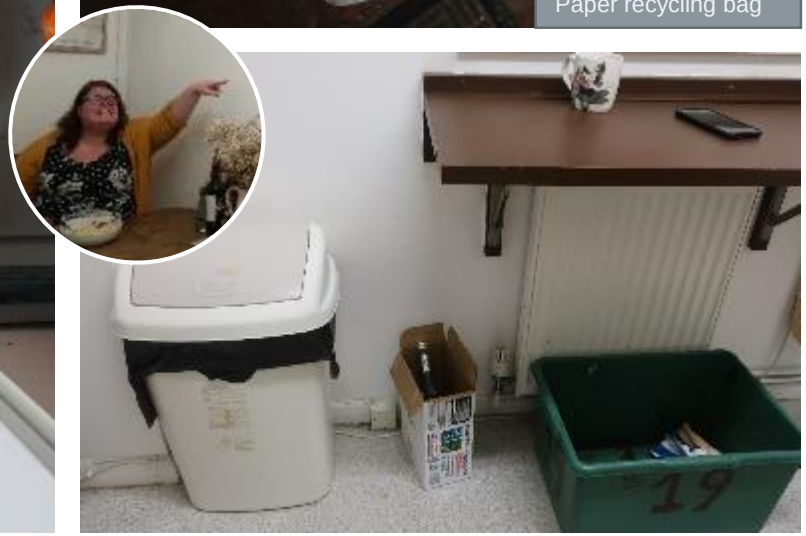
All households had both a residual and recycling external wheelie bin as a minimum, and a small outdoor food waste bin was very common. Some had several recycling bins for different materials, as well as other bins for garden waste. All respondents thought that they had the right number of external bins (and researchers observed that this was generally true), apart from in rare cases when respondents had contacted the council for food waste bins which were missing from their property.

The way the properties were set up meant that external bins sat quite close to people's front doors, so routes out from their properties to the external bins were fairly short.

What are waste set-ups like?

Food waste and general waste bins

Paper recycling bag



LWARB REVEALING REALITY

Recycling outside of communal areas was rare

Waste set-ups in rooms other than the kitchen were either non-existent or inconsistent.

In bathrooms, there was generally only one bin where all waste items were placed, mixing recyclable and non-recyclable items in these. Few people made the effort to take recyclable items to their main recycling bin, even though it was very close to their kitchen.

In bedrooms, the majority had a single residual waste bin or bag in their rooms, which they either emptied into the residual kitchen bin or took straight outside to the residual bin. There were few reports of individuals splitting out their general waste and recyclable items into communal bins.

Case Study

Meet Jay

Jay is 29 years old. He moved to London 10 years ago to study and has lived with various people over the years. He recently returned to London from teaching abroad and decided to take up a new career as a baker. The hours he works are random, dependent on his shift pattern—sometimes early mornings, sometimes daytimes and sometimes nights.

Six months ago, he moved into a house in Southwark with three other people who he had never met before. It's an old terraced house with a small kitchen. Shelves and cupboards in the living room are used as overflow for food and pots and pans.

The people he shares with are in their thirties and have lived together in the house for about eight years. One of them has a cat, which has caused some tension recently. Jay has a good relationship with them (whenever their routines happen to coincide), chatting in the living room, sharing recipes, and smoking in the garden together.

They used to have a cash kitty for communal items but have stopped that since their house got broken into. Although rare within the sample as a whole, they try and stick to a cleaning rota, with each person cleaning the house once every two weeks, and they generally care about keeping it tidy to avoid mice.

In the living room, they have a residual bin and a recycling bin next to the fridge, which were there when Jay moved in. He only has a plastic bag in his room for residual waste. He tries his best to recycle but isn't very consistent. He often buys meal deals on the way home from work after a night shift and just throws the packaging in whichever bin is closest. He's been recycling certain things for years without noticing that it says 'unrecyclable' on the packet. He has never had a discussion with his housemates about recycling. He sometimes takes the recycling bin outside, but most often this falls to other housemates who have lived there for longer and who are at home more frequently.

Case Study

Meet Miles

Miles is 27 and works for a theatre and musical company. He moved in with two of his friends two years ago, one of whom owns the house.

Two of the inhabitants have irregular schedules, and often travel around the country for work. The live-in landlord has a more predictable routine, so takes charge of many of the household tasks. He also hired a cleaner, who visits once a week to do the “bigger tasks” like hoovering or laundry. The cleaner will occasionally empty the internal bins into the external bins, following written rules from the landlord.

They all share food, and regularly cook for each other. They also make sure to have at least one breakfast together a week. They describe their household as a family more than flatmates. They have filled the house with personal items that reflect their shared love of theatre and music. There is a cat, which they all take care of. One of the things they enjoy most is hosting parties and get-togethers with all of their friends.

Miles and his housemates are motivated to recycle, as they feel it’s an easy way to keep their home nice while helping the environment. They usually have a lot of recyclable waste from the parties they regularly host so it also feels quite “natural” to them. They don’t own an internal recycling bin, preferring to use a bag hooked to a cupboard door for plastic, glass and metal, and building a pile of paper and cardboard on the counter. The external bins stand by their parking place, so they find it convenient to take the items out when they leave in the morning.

Case Study

Meet Zain

Zain is 24 and came to the UK from India a little over a year ago to study for his Masters degree. He lived in university halls for a few months, then moved into a shared house in Lewisham with four other people. People rotate in and out of the house every few months, with the longest standing tenant having spent nearly two years living there. The house is very quiet at all times, and very clean and organised. Each shelf in the kitchen cupboards, fridge and freezer is labelled with the room number they belong to. A cleaner visits once a week and cleans the communal areas, including taking the bins out and changing the bin bags.

Zain's landlord is very involved in the life of the household, as he regularly visits the house and sets strict rules. This includes a ban on laundry after 10pm and a ban on smoking in the garden. Zain doesn't really know the people he lives with. He rarely interacts with them but when he does, their conversations are always cordial, if a little short. He doesn't feel very at ease with them, so avoids going into communal areas if they are around.

Zain didn't know what his flatmates were doing when it came to waste. He had one conversation about the basics of recycling with one of his flatmates' partners when he first moved in, as he was new to the British recycling system. Other than this, he relied on seeing items in the bins to understand what his flatmates were doing. He often saw errors in the bin, either from his flatmates or cleaner, but never addressed these with anyone else. Despite the landlord's strict rules, there were none on the topic of waste and recycling—so Zain often defaulted to "playing it by ear".

How good were people at recycling?

Describing oneself as motivated to recycle is one thing, but actually following through with consistency in the sorting and correct disposal of waste is another. We heard many people make claims to the former, only to watch them behave quite differently.

Awareness of recycling didn’t equate to accurate recycling

In general, there was a high awareness of recycling and most respondents said that they thought it was important to recycle, alongside other environmentally friendly behaviours.

For example, a few respondents, such as Grant and Jordan, mentioned that media campaigns and environmental activists like Greta Thunberg and Extinction Rebellion encouraged them to gain more of a sense of ‘urgency’ about the environment and recycling.

On the surface, many respondents reported a high motivation to recycle. In all the households visited, there was provision for recycling and all the respondents were making some effort to recycle.

Some respondents in particular identified as ‘environmentally friendly’ people. For example, Ellie described herself as a very keen recycler. She became interested in the topic along with other ‘green’ issues after watching a documentary about the meat industry. She regularly read articles about recycling and had learnt which types of plastic she could recycle.

Others explained that they tried to recycle because it is ‘the right thing to do’. Even those who didn’t feel that recycling was very effective in reducing environmental impact still made an effort. For example, Grant felt that trying to recycle was “better than nothing” and Eric said, “I feel like you may as well recycle, even though in the grand scheme of things, it’s not the biggest environmental issue”.

Despite this, we saw that households were not in fact recycling very well. There was evidence of inconsistency in recycling behaviour by individuals. A large amount of contamination was also observed, with residual items placed in recycling bins and recyclable items placed in residual bins. However, the social dynamics in the households were characterised by a lack of communication and discussion between sharers about their recycling behaviours. This will be covered in more detail in later sections.

Recycling was driven more by social desirability than individual motivation

People weren't consistent in their recycling—they often recycled only in certain contexts or at certain points in time.

There was a clear gap between how much people were recycling in the communal spaces in their properties (e.g. kitchens) compared to the private space (e.g. bedrooms). Items were more likely to be recycled if they were in communal spaces than in private spaces, suggesting that implicit social pressure is a key motivator for recycling, given there weren't explicit rules or direct pressure from sharers to recycle. For many, recycling in private spaces was less convenient—for instance, few had recycling bins in these rooms. However, we observed this trend across all the people we spoke to, including high engaged recyclers who went to significant efforts to recycle in communal spaces.

People would follow the pre-set recycling system and try to recycle because they wanted to be seen as environmentalists or that they cared, or even just to not cause conflict and follow the rules.

On the other hand, in more private spaces like bedrooms or bathrooms where social pressures were less apparent, recycling consistency dropped. Dwellers felt less of a push for them to recycle when there weren't existing set ups or rules.

This was also the case even for those who described themselves as good recyclers or 'environmentally-friendly' people. For example, Grace was very keen to recycle and pushed her flatmates to do it better, but in her room she would only sort items if she felt they were 'significant' enough to make a difference (e.g. large bits of cardboard). The bathroom she used was also close to the kitchen where the recycling bin was, but she wasn't sorting recyclables from this space.

In short, most sharers' desire to recycle seemed to stem from implicit social pressure within the HMO household rather than from intrinsic motivation.

“At uni, everyone’s watching so it’s easier to make sure you recycle” ***Chet, 24***

Small mistakes by individuals added up to ineffective recycling at a household level

When looking at the contents of the household recycling bins, there was a lot of evidence of contamination, or that residual waste bins contained recyclable items.
It was clear that not all individuals within the household were operating at the same level of recycling—some were more motivated than others and some had more knowledge than others.

On the one hand, some were recycling badly through lack of motivation. However, others were over-recycling in an effort to be as good as recyclers as they could be, and to signal to their flatmates that they were 'good' people because they tried hard to recycle.

Even if there were some individuals who were recycling well, others were frequently undermining their efforts due to their lack of knowledge. Adding to the fact that no one in the house was flagging the mistakes or giving feedback, lots of little mistakes by individuals meant that at an overall level, the households weren't recycling well.

In Conclusion

The social nature of HMOs—the fact that there are multiple individual or separate units living within one household —appears to have a huge impact on recycling effectiveness.

Recycling appears to be driven by two main factors:

- The existence of collective household motivation to recycle (increasing social desirability)
- What individuals know with regards to how to recycle well

We will explore these factors further in the following sections.

Problem 1: Households don't take collective ownership for their waste and recycling

Generally, recycling in HMOs is the sum of individual recycling efforts, therefore the quality of recycling is also a sum of how accurate their efforts are. On the whole, HMOs shouldn't be thought of as a 'household' unit with shared values and goals. Not all sharers operate at the same level of recycling and few communicate their varying recycling habits.

In most cases, sharers don't feel that waste in general, let alone recycling set-ups, is a topic worth discussing. Few think to take the initiative when it comes to ensuring they are recycling as well and efficiently as they can, preferring to rely on the systems already in place when they move in. Poor recycling behaviour also goes unchallenged—many find it just too socially awkward and unrewarding to pick up on other sharers' mistakes.

Bins rarely came up in conversation

Across the households, there were very few instances of sharers talking to each other about waste and recycling.

Some people didn't know their flatmates and very rarely spoke to each other. In some of the less sociable households, sharers would avoid spending time together in communal areas. When sharers within these properties did interact, it was usually to discuss urgent household matters or issues which had a significant impact on their lives. These conversations weren't always held face-to-face, with some preferring to interact on group chats. Waste rarely featured in these conversations—it wasn't seen as an urgent issue or one that had much impact on their day to day lives.

Even in households where sharers were close, waste and recycling were not seen as a talking point, let alone a priority topic. Discussing waste felt unnecessary, and people didn't consider the fact there could be any benefits. This meant most saw little point in discussing it with their flatmates. As we saw earlier, that meant tolerating other housemates' poor recycling, even among strong recyclers.

Grace doesn't speak about recycling much with her flatmates. She feels they are not as good at it as she is, but isn't sure if it's out of laziness or lack of knowledge.

Recycling is an individual behaviour

Recycling is a somewhat individual behaviour. People were likely to be sorting their waste when they were alone in shared spaces, with nobody around to observe what they were doing and few consequences for making bad decisions.

This individual behaviour meant that it was difficult to identify whether things were being correctly recycled, and which sharer was at fault. The lack of accountability (and regular presence of items in the 'wrong' place) meant that residents often lacked commitment to ensuring their recycling was 'good quality'.

The weakest individual recycling behaviours were seen in socially distant or larger HMOs with five or more people in which housemates seldom interacted with one another. In these situations, it was harder for engaged individuals to monitor and police recycling behaviours, and there were more people who might undermine good recycling behaviours with small mistakes. In these households, people felt less social pressure and recycling became more anonymous.

Ellie was knowledgeable and passionate about recycling. She often noticed items in the wrong bin but wasn't sure how to react, beyond occasionally moving items herself.

Residents often refused to correct the mistakes of others

People didn't always know what their flatmates were doing when it came to recycling and were unsure whether or not they were doing a good job.
In some households, sharers avoided spending time with other sharers in communal areas and so relied on items they saw in the bin to establish what their flatmates were recycling. When sharers saw items in the wrong bin, many would leave them there as they felt it wasn't their responsibility to move them. Others would move the offending items but did so silently.

There were multiple reasons for this. Some were simply trying to avoid what they perceived as unnecessary conversations or conflict with their flatmates. They often felt it 'wasn't their place' to call out others' behaviour, since they weren't officially responsible for the property or their flatmates' behaviour. Others felt they lacked sufficient recycling knowledge to call out behaviour and worried about being in the wrong.

In addition, most weren't motivated enough by recycling to pick up on others' behaviour. Only people who are intrinsically motivated by a strong desire to protect the environment would put the effort into challenging other sharers' recycling behaviours. However, in general even they didn't want to rock the boat or introduce social awkwardness so let things go unchallenged.

Zain regularly noticed that non-recyclable items were put in the recycling bin. They were usually placed there by his cleaner or his flatmates, who he rarely spoke to and tended to avoid. Despite describing himself as an environmentalist and someone keen to recycle, he never picked out the offending items because he felt it had little impact. This inertia also extended to cleaners. Individuals didn't challenge cleaners when they made mistakes by putting items in the wrong bins. Often, this behaviour just went ignored, as sharers felt they lacked the authority to criticise a cleaner employed by their landlord, or because no one sharer took leadership in, or responsibility for, calling it out.

In short, even where mistakes were spotted and cared about, they went unchallenged. This leaves a high risk of bin contamination and items being incorrectly recycled.

"I think you do see some things in the wrong bin like cartons or food trays in the general rubbish… I just let it be, it's not my house"

Zain rarely talks to his housemates and avoids the kitchen if they are there. He isn't sure how good they are at recycling, and sometimes sees items he feels are in the wrong bin. His house also has a cleaner who is responsible for putting the bins out. Zain isn't sure what they do and reflected that they might be emptying internal bins into the wrong external bins. Despite caring about waste and the environment, he feels it isn't his place to correct any of them as it isn't 'his' house.

Abiding by the rules of ‘historic householders’

Sharers usually adopted the recycling set-up and system that was in place when they arrived, even when many tenants had come and gone and could have contributed to changes.

People rarely felt strongly enough about recycling to initiate new recycling systems and thereby potentially cause disagreement within the household. This is exacerbated by the lack of household communication around waste and recycling.

People also struggled to assess the effectiveness of their current systems given the limited interaction and conversation and low awareness of what others were doing. Instead, most worked out how well their waste system was working based on the visual cues they received from their flatmates—namely, items they could see at the top of the bin.

The default household recycling set-up seemed to override most individual recycling motivation. This inertia had both positive and negative repercussions:

On the positive side, even those who were not very motivated to recycle still tended to follow cues as to what other people were doing in terms of recycling. For example, we spoke to individuals who had moved in with people they didn’t know and who had started recycling because of the set-up of the household. The cues that prompted them to recycle included the existence of separate bins in the kitchen and the existence of signs placed near the bins that indicated which items were recyclable.

On the negative side, sharers were unlikely to challenge ineffective set-ups and wouldn’t push to improve them. Sharers rarely had conversations about waste set-ups and habits. Further, by following other’s behaviours, some sharers recycled ineffectively and contaminated recycling bins.

There were a few examples of people trying to influence the recycling culture in their households by setting up new systems, drawing up rules and persisting with their flatmates. These were usually people who were very motivated to recycle well. For instance, Grace had drawn up an ‘Introduction to the household’ leaflet that she gave to people when they moved in and which mentioned the recycling bins and collection days. Despite this, she was still uncertain what her flatmates were doing and whether they were following her rules.

It gave the impression that the effort to share knowledge was done in response to an individual desire to improve the behaviour of others, but that they weren’t motivated enough to follow up on the collective behaviours.

Case Study

Grant, 45

Grant follows his flatmate's system "just to keep peace", but he doesn't really know if it's the right way to do it. They have two under-counter bins, which he says are both for recycling, and if his flatmate throws a plastic bottle into one of them, Grant continues putting similar bottles into that bin and the rest of the materials into the other recycling bin. Moreover, they don't have any residual bin.

‘I’ve no idea how the bins get outside’

Many sharers weren’t sure how or when their waste was collected, and what action was necessary in order to make it happen. Many assumed that the other people they lived with were taking the rubbish out, but often didn’t know specifically who. When it was consciously decided, the task of dealing with external bins was usually delegated to sharers who had been living in the household the longest.

Many dwellers were uncertain as to what purpose each of their external bins fulfilled. For instance, Chet wasn’t sure how his bins were collected. He had never put them out for collection, although he usually had to bring them back from the kerbside. Upon reflection, he decided that one of his flatmates was probably putting them out on the kerb.

Grant told us that they were so confused about the different purposes of the external bins that they just “dumped everything in the first one”.

When Emma was asked to show us around her external bins, she was surprised by what items were inside each of them. She was also unaware that they could separate food waste, even though this small bin was visible alongside the other wheelie bins.

Only in some cases, HMOs had designated roles or rotas for putting external bins out for collection. This invariably involved having a calendar in the kitchen signposting the days. One household had marked the calendar with different colours for when recycling and general waste bins were due for collection, since each one went out fortnightly.

Lack of leadership: Landlords and house leaders had little presence in the set-up of the recycling system

As mentioned previously, sharers will follow rules and existing set-ups as a default.

Therefore, clear leadership within households helps to pressure sharers to abide by certain recycling standards.
In our sample, there were different models of leadership and followership across households. Some sharers were highly motivated and self-nominated as 'recycling leaders', being more likely to speak up about waste and recycling.

On the other hand, landlords were little involved in issues about waste and recycling. Dwellers didn't have much contact with them and when they did, it was mostly around cleanliness of the property or rent.

Only occasionally were letting agents or landlords involved in showing new tenants around the property. In addition, there was never anything written into contracts about recycling, which led to sharers not really knowing what their landlords cared about.

All respondents reported that they respected the landlords' rules and were happy to follow them, including the rare rules related to waste and recycling.

These findings reveal a key opportunity area: landlords, an untapped resource, have the power to influence the household's behaviour. Setting recycling standards and clear rules would make it easier for tenants to recycle well.

Opportunity: Supporting households to perceive recycling as a collective responsibility

How Might We…

- Empower motivated recyclers to challenge other sharers' incorrect recycling behaviours?
- Encourage sharers to associate recycling with other shared tasks like cleaning?
- Draw attention to the discrepancies in recycling behaviour between individuals?
- Emphasise the negative consequences of poor quality recycling across the household?
- Encourage all residents to engage more with household rules and chores?
- Encourage landlords to take responsibility for and care about recycling ?

Opportunity: Prompting conversations around waste and recycling

How Might We…

- Prompt sharers to talk about waste and recycling, including ‘rules’ for the outside bins ?
- Encourage sharers to compare their recycling behaviours?
- Make recycling at home feel more scrutinised and ‘public’?
- Utilise household leaders to communicate recycling knowledge and information?
- Encourage cleaners, as part of the household, to do it right?
- Identify an effective messenger , messages and channels between tenants, landlords and local authorities?

Opportunity: Encourage questioning and assessment of waste set ups

How Might We…

- Encourage sharers to consider a recycling set-up when they are first moving into a property?
- Encourage sharers to reflect and assess their current waste set-ups?
- Ensure there is a good baseline 'default' (e.g. correct bins and signage) for sharers to work with?
- Help facilitate the creation of recycling systems in households with weaker social bonds?
- Utilise landlords and house leaders to put efficient recycling set-ups in place?
- Educate landlords on the benefits of having effective recycling systems?
- Encourage landlords/housing associations to install recycling rules and systems?
- Better communicate collection day and what needs to happen to ensure waste rules are followed?

Problem 2: People assume their recycling knowledge

The world of recycling is confusing to many. People were unsure how their waste system worked and how they could ensure their items were recycled. Although they generally knew that their recyclables need to be cleaned, many assumed their recycling would be re-sorted at a later stage of the process. And when coupled with a high level of confidence in their incorrect knowledge of recyclable items, particularly about plastic items, this confusion often led to people contaminating their bins.

A guessing game: understanding of the general waste system is low

The people we spoke to lacked key knowledge of the wider recycling system, such as the re-sorting and processing of materials, even if they were well informed around what they can and can't recycle.

Overall, the people we spoke to were unsure what happened after recycling left their home, and some were cynical about what the local authority would end up doing with their waste. Some people, such as Paul, speculated that their recycling would be mixed with general waste, shipped to other countries or thrown into their landfills, even going so far as to say that "recycling is a scam". However, he would still try to recycle, and would even re-sort items when he saw they were in the wrong bin, because his previous partner was very environmentally focused and had taught him good behaviours. On the other hand, people found it much easier to understand the trajectory of their food waste. They felt they could picture what would happen to it, how it would be reused and what benefits there may be, meaning they were more motivated to sort their food waste carefully.

Perhaps this lack of knowledge about the end-to-end recycling system is unsurprising, given that many of those living in HMOs were not sure what the purpose of each external bin was. Sometimes, they were only confused about what they could or couldn't put into the recycling bin, whereas other respondents couldn't tell the difference between a refuse bin and a recycling bin.

Among the common misconceptions was that over-recycling was better than under-recycling. This was often fuelled by the belief that mixed waste would be resorted at a later date. This led to many of the people we spoke to recycling "if in doubt". This would contribute to sometimes high levels of contamination.

Although awareness of material contamination was low, awareness of residue contamination was high. Many cleaned out their recyclables, with some going to significant lengths to do so. For instance, Miles regularly put items in the dishwasher to ensure they were clean enough for the recycling.

Uncertainty about "how clean is clean enough" came up regularly, especially among highly engaged recyclers. Still, some items were more likely to be cleaned out than others, with tins and jars being more regularly washed out than plastic bottles or cleaning product packaging. Most struggled to remember where they had learned about residue contamination. Some had observed others cleaning out items and followed suit. Others felt it "made sense" as they wanted to keep their recycling bins clean.

Case Study

Jake, 24

Jake believes he is well informed about recycling, but at the same time has some false beliefs he has never second guessed or learned about—he just trusts that they're true. He (as with many respondents) has read lots about the benefits of recycling—for example, he said "you read a lot about plastic in the ocean, climate change." But he never read (actively or passively) anything about how recycling is sorted and processed. Jake never realised different councils could recycle different things. He is from a small village near Cambridge, and stated "you'd think in London they can recycle everything."

“I follow my sixth sense”: People assume they know what to do with items and won’t recheck information

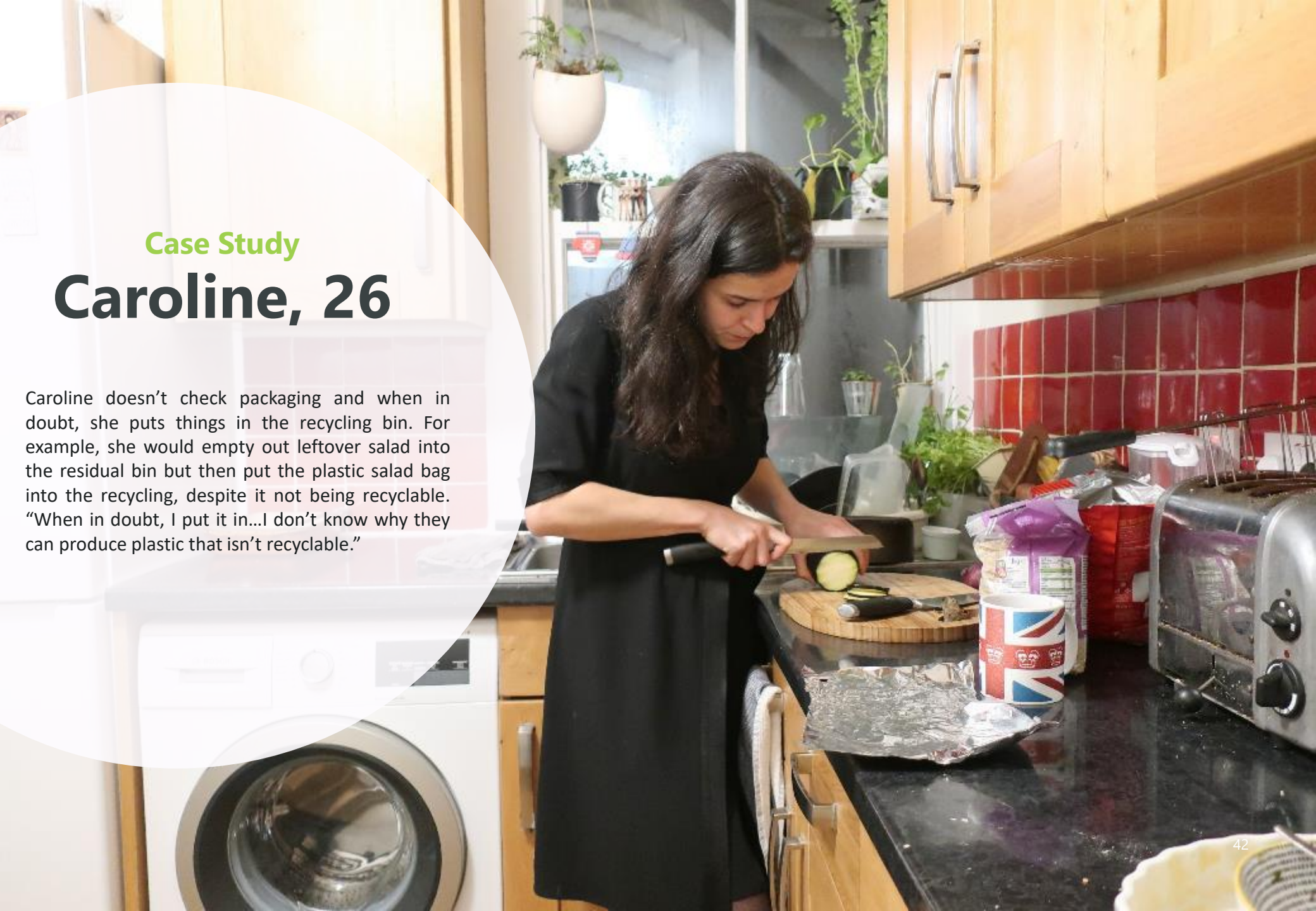
Many based their knowledge of what can and can’t be recycled on ‘common sense’ or ‘general knowledge’. This common sense is built on:

- A basic level of recycling knowledge, with people feeling clearest on recycling glass, cardboard and tin, and what to do with their food waste. Few could articulate where they had gained this knowledge.
- People often based their recycling decisions on parameters like the size of the item (for example, if it’s big it should be recycled), the feel of the item (for example, if it’s solid it should be recycled) or what the item had been used for (for example, if it touched food it can’t be recycled).

As many felt their recycling behaviours were based on ‘common sense’, they assumed this was shared by the general population, including their flatmates. This meant they would assume their flatmates were following universal recycling rules and recycling the same items as them, even if they were wrong. When asked about her flatmates’ recycling knowledge, Grace responded: “How would they not know? Everyone knows.”

On the other hand, some people put non-recyclable items in the recycling because they wished they were recyclable. This ranged from people throwing things in the recycling because they assumed it was recyclable to “Well, it should be recyclable”. Eric, for example, assumed that almost everything was recyclable because he cycled past the recycling centre every day, and so assumed that his borough was a leader in recycling. Paired with the perception that recycling is re-sorted at a later date, this meant that some highly engaged recyclers were regularly contaminating their bins.

This reliance on ‘common sense’ runs deep and informs the majority of recycling behaviours. It often means that people felt confident about items despite having never checked if they were recyclable. Even when they had doubts about specific items—for instance, plastic bagging was a recurring issue for multiple respondents—they were unlikely to check information about it, either on the back of packaging, online or by asking someone, including their housemates.



Case Study

Caroline, 26

Caroline doesn't check packaging and when in doubt, she puts things in the recycling bin. For example, she would empty out leftover salad into the residual bin but then put the plastic salad bag into the recycling, despite it not being recyclable. "When in doubt, I put it in…I don't know why they can produce plastic that isn't recyclable."

Opportunity: Prompting moments of reflection on recycling knowledge

Creating moments for sharers to reflect on their recycling knowledge and behaviours can help challenge their assumptions around waste systems and recyclable items. For example, key moments for reflection are:

a) When people move into a new household, given they are setting up various systems throughout the house which are likely to remain set for some time

b) When sharers change a service provider (e.g. electricity, internet) as these usually prompt discussion within the household and offer opportunity to discuss waste management systems

c) When the council informs residents about a change in the council tax rate (e.g. start of the financial year). Residents are likely to engage with this information, and so may also engage with recycling literature

Opportunity: Prompting moments of reflection on recycling knowledge

How Might We...

- Provide accessible cues on difficult items?
- Provide recycling information at the moment of recycling?
- Encourage people to refer to trusted sources of information, particularly from the council?
- Share information on how the recycling system operates in an accessible and tangible manner?
- Make the benefits of recycling feel more concrete?
- Reduce confusion around difficult items to avoid contamination through over-zealous recycling?
- Enable landlords and sharers to spark conversations about waste when new sharers move in?
- Encourage sharers to spot incorrect behaviours and discuss about it with the other people in the household?

Problem 3: Trustworthy information about recycling is ignored

Few people sought out information if they were unsure about specific items, instead relying on their own pre-existing knowledge. If they did check, they were unlikely to refer to trusted sources, instead using the most accessible sources (i.e. Google). Many were disconnected from their local council and were likely to ignore council information relating to recycling, if they had received it.

Information about recycling is available but people are unlikely to seek it out

Residents were unlikely to seek out information if they were unsure whether an item was recyclable. It felt time consuming, especially at the moment of recycling when they wanted to do it immediately. As mentioned above, respondents often decided where to throw a recyclable item based on parameters like the size of the item, the feel of the item or what the content of the container was, being common to put it into the recycling bin. Jay, for example, had never checked to see if his parcel wrapping was recyclable. When he did check during the interview, he saw a 'check online instruction' on the packaging but reported that he had never done this before and probably never would.

In some cases, people would check if they felt invested in recycling a particular item—for instance, if someone was watching them recycle or as part of a conversation about an item with friends or flatmates at the point of disposal. Those who did check usually searched online for information about specific items they were unsure about recycling and clicked on the first link that came up. Few thought to use trusted sources such as council websites, as described later in this section.

Some types of information stick better than others

Despite receiving recycling information from many sources, people based their knowledge of recycling systems and recyclable items on a limited number of sources. There were some patterns in the channels that seemed to be more effective, which present possible points of leverage for improving recycling behaviour.

Those that stuck:

• The back of packaging, which people referred to when in doubt about an item. They found this information easy and quick to use. However, people were unlikely to recheck packaging for items they thought they knew about or items they felt were 'common sense'.

• Word of mouth.

• Watching other people recycle: Some respondents matched behaviours they observed others doing. For instance, many mentioned that they learnt to wash out recyclable items from their family, partners or colleagues, although none mentioned they learnt from their actual or previous housemates.

• Things found passively in places that felt surprising: Multiple respondents had come across posts or adverts on social media about recycling specific items which stuck with them. However, they were unsure who they were posted by.

• In the few HMOs where this was observed, signs/posters from the council placed in the kitchen for people who were new to the UK and still learning the recycling system (although these were often out of date).

Those that didn't stick:

• Signs on external bins: These were often too little, too late. By the time people were outside, they were unlikely to take waste back inside to re-sort it, and only one respondent mentioned he learned instructions from the sticker on the outdoor bin. Signs seemed often to be out of date, looking old and worn out.

• Council leaflets: These were sometimes kept by respondents (e.g. on fridges) but rarely referred to.

• Council websites: People were unlikely to check what items were recyclable on council websites, preferring to check the first few links to come up on their search results.

People wanted explicit and consistent information about items, including examples and, preferably, explaining the reasons why that item was or wasn't recyclable (for instance, what happens after that material is collected and how it is processed).

‘I’m not sure who my local council is’: People are disengaged from their local council and area

Attachment to a local area can be a strong driver of responsible behaviour. Yet the majority of respondents we met had a low level of attachment to their local area, unless they had lived there for many years. Some regularly moved from property to property so didn’t have the time to build any kind of attachment with their area.

Some respondents were unsure which council area they lived in. This was particularly the case for people who had recently moved into the household or recently moved to the UK.

People were generally disengaged from the council and unaware of the services it might provide. Few of the people we spoke to interacted directly with the council, usually deferring that job to household leaders or the landlord. Council tax was the main reason for getting in touch with the council, but not all respondents paid it (e.g. students) or paid it directly to the council (e.g. some transferred to a lead tenant).

Considering this low engagement, it isn’t surprising that most were generally unaware of what services the council provides in terms of waste. In extreme cases, a few were even unsure how the council relates to their waste and recycling. Some respondents, especially people who had recently moved to the UK, were unsure who collected their external bins.

While the majority did recognise that the council is responsible for collecting their bins, they were unlikely to get in touch with the council to raise any issues or questions about waste and recycling, either leaving the issue unresolved or going through their landlord.

Few people knew their neighbours very well. There was certainly not much discussion about waste and recycling between neighbours, so respondents were unlikely to know how much their neighbours valued recycling. A few respondents reported that they saw their neighbours placing their bins out for collection. And on the whole, front gardens were so small and accessible for collection that residents did not need to put their bins out onto the street, thereby reducing the visual cue that bins were collected on certain days.

Council communications are ignored

The majority of people we spoke to were unaware that different items could be recycled in different councils. There was one respondent, Grace, who knew the differences in council recycling practices, and felt Ealing accepted more items than other councils. Many were frequent movers who relied on their existing knowledge of the recycling system at their previous property. When they moved, this knowledge was not challenged. This lack of understanding of council standards led to incorrect or lax recycling behaviours.

When seeking out information about recycling, few thought to check council websites. Instead, they would click on the first website they came across. For example, Emma and Jordan would sometimes search the internet to see if an item was recyclable and would accept information from the most visible and accessible source of information. Emma, on the other hand, had learned about the items that were recyclable in her area from a council leaflet, but she no longer knew where that leaflet was.

Communication from the council about recycling (e.g. leaflets) typically wasn't well used. Usually only one or two sharers would look at it before discarding it, meaning that the information wasn't passed around the whole household. In addition, leaflets that came through the door were often classified as junk mail and were ignored or thrown away quickly.

In some households, leaflets from the council had been put up in the kitchen or in communal areas for sharers to refer to. These were not always placed in the most impactful spot—for example, some were placed in a kitchen cupboard. These leaflets or signs were usually up when the tenants had moved in, so they struggled to identify where they came from. Other times, they were pinned up on notice boards by current tenants but then quickly forgotten. Eric, for example, had the council leaflet on his fridge but had not referred to it. In fact, when he looked at the leaflet during the interview, he was surprised to find that cleaning product bottles were recyclable.

There was a small minority who referred to the council leaflets, mainly people who were new to the UK and the recycling system. For instance, Zain had based most of his recycling knowledge on the council leaflet he had found attached to his fridge. In Chet's house, there was a printout of the council website taped to the wall above the bins which he sometimes referred to if he was unsure. And Emma, who just moved from Chile, got her information from the leaflet she could no longer find.

Council communications were not seen as engaging or important, or as a call to action. Few respondents remembered the content of communications from the council or felt it was instrumental for their recycling knowledge.

Opportunity: Engaging communications from authorities

How Might We…

- Create more visual cues that are frequently seen by HMO dwellers?
- Create more engaging, visual and relatable council communication?
- Access multiple individuals with different information needs within HMOs as well as communicate at the household level?
- Make the council website a key/first source of information?
- Engage with landlords to help council information reach HMO residents effectively?
- Deprioritise less trustworthy or locally relevant communications?
- Make people feel an attachment and pride to their local area?
- Link recycling to generating a cleaner and more pleasant area?
- Encourage people to perceive recycling as a desirable and expected behaviour in the neighbourhood?

Conclusion How can we improve recycling in HMOs?

HMOs represent a particular social dynamic in which social pressure plays a significant role in the sharers' recycling behaviours. Households are composed of individuals who behave in an uncoordinated manner rather than as a cohesive whole.

While this can have a positive impact, given it can encourage them to recycle by following others' leads, individual efforts are often undermined by the lack of recycling knowledge and lack of consistency between dwellers. Lots of little mistakes by individuals meant that at an overall level, the households weren't recycling well.

Dual approach: Two main ingredients needed to increase recycling

HMOs are, by definition, social environments. Effective recycling in this context depends on every member in the household working together to avoid making small mistakes. Therefore, a focus only on individual behaviour will be ineffective. Any attempt at change must influence HMOs as a whole, as well as the individuals.

Opportunities lie in upping the status of recycling within households, encouraging individual and collective responsibility and improving communication between sharers. This must then be supported by an understanding of how to recycle effectively and the consequences of not recycling correctly.

Shared Responsibility

One challenge uncovered by this research is a lack of collective responsibility for recycling in HMOs. Sharers tend not to have a collective goal to be a good recycling household. Residents often go along with the 'default' waste set-up, which often comprises ineffective recycling approaches instigated by their landlord or previous sharers.

This is exacerbated by the fact that HMO inhabitants have little to no relationship with their local council and have no external motivation to recycle. However, there are 'bright spots'—individuals who are motivated to recycle but who struggle to galvanise other sharers into action.

Knowledge

Linked to this lack of shared responsibility is the lack of knowledge around correct recycling procedure. People may become motivated to recycle as a household, but individually they do not necessarily know what 'good recycling' looks like.

Knowledge is patchy and there is a lack of motivation to check what is and what is not recyclable. People rarely refer to trusted information sources, such as council websites. Sharers are also reluctant to challenge each others' behaviours. Effort doesn't count for anything without the correct systems and knowledge in place.

Getting the whole household on board with recycling

To increase the status of recycling within households and to get everyone to take collective responsibility for recycling, some recommendations that local authorities, waste managers and landlords could consider are:

- Encourage sharers to associate recycling with other shared tasks (e.g. like keeping the property clean).
- Encourage sharers to consider recycling set-up when they are first moving into a property, at the same time—and with the same importance attached—that they go through other set-ups, such as bills and rent payments.
- Emphasise that there are consequences if they don't recycle well as a household
- Help facilitate the creation of recycling systems in households with low social bonds (e.g. from the landlord)
- Make the whole household feel responsible for waste and contamination of recycling bins
- Encourage social pressure around recycling
- Ensure there is a good baseline 'default' (e.g. correct bins and signage)
- Encourage residents who don't know each other to engage more on house rules/chores
- Create a sense of pride in the household and the wider community

Ensuring people know what to do and when

To ensure people have the right recycling knowledge and to encourage them to check when they are unsure, local authorities, waste managers and landlords could:

- Take advantage of existing ‘moments of influence’ for sharers to reflect on their recycling knowledge—for example, when people move into a new flat, when sharers change a service provider (e.g. electricity, internet), and when there’s a change in the council tax rate or rent (e.g. start of the financial year)
- Clarify what good recycling looks like
- Improve guidance on items and their packaging, especially encouraging people to check what they can recycle locally
- Build and develop existing emotional perceptions of non-recyclable items as contaminating or dirty
- Increase awareness of material contamination to stop over-recycling
- Encourage people to refer to existing communications/to trusted sources of information
- Encourage sharers to challenge each other’s knowledge

How Might We... improve landlord support

We identified some practical steps that can be taken to improve the behaviours of key actors in HMOs, as a starting point to implement interventions and develop tailored messages for HMO residents. Significant areas for improvement highlighted throughout the report include:

Inefficient or incorrect default waste systems

• Ensuring landlords offer a good baseline 'default' to their properties, include correct bins and clear, up-to-date signage.

• Provide HMOs with a fast track service for requesting additional capacity and replacing lost or stolen bins.

Lack of information provided to new tenants on existing recycling systems and services

• Provide standardised communications that landlords can download, amend and share around HMOs.

• Issue a recommended code of conduct for landlords, including guidelines on what containers and information to provide residents, as well as suggestions to improve tenants' waste management habits.

Poor ability to identify HMOs

• Improve the ability to identify HMO properties through partnerships with landlords through landlord forums, letting agents, student accommodation and teaching hospitals.

• Ensure contact centre staff are able to identify HMOs through conversations with residents and landlords. Ensure the centres can provide clear information on the relevant waste services.

How Might We... improve collective household behaviours

We identified some practical steps that can be taken to improve the behaviours of key actors in HMOs, as a starting point to implement interventions and develop tailored messages for HMO residents. Significant areas for improvement highlighted throughout the report include:

Lack of collective responsibility within HMO households

• Motivate residents to talk about recycling within the household, rather than it falling into the 'boring' category (e.g. encourage discussion about the system they used in their previous households or what they know from other places (i.e. work, travel); frame recycling as a 'household challenge').
• Encourage sharers to associate recycling with other shared tasks such as cleaning the property (e.g. write it into tenancy agreements).
• Carry out annual visits to check recycling systems and signage, as well as re-educating residents.

Lack of collective household goals around recycling

• Ensuring the whole household understands the importance of taking collective responsibility for waste and the potential contamination of recycling bins.
• Create a sense of pride in the household and local community, and extending this to cleanliness and waste behaviours.

Unwilling to challenge incorrect behaviours

• Encourage households to nominate a recycling champion to call out recycling errors within the household.

HMO households have high levels of contamination

• Run contamination specific social media campaigns.
• Provide myth busting information around how recycling is processed after it is collected to encourage HMO inhabitants to sort their waste properly
• Provide information to clarify what good recycling looks like.

How Might We… improve individual behaviours

We identified some practical steps that can be taken to improve the behaviours of key actors in HMOs, as a starting point to implement interventions and develop tailored messages for HMO residents. Significant areas for improvement highlighted throughout the report include:

Individuals may have poor or no relationship with other sharers

• Create an information pack specific to HMOs, including the general rules and example questions that the new tenants could ask to others to find out the details of how that property is run.

• Making contact with new tenants when they first move in, and using pre-existing move-in touchpoints to share information (i.e. key handover, Council Tax set up).

Individuals lack knowledge of recycling rules

• Improve online and printed guidance on confusing items and their packaging, especially items where OPRL advises to check locally.

• Encourage sharers to challenge each other's knowledge, and normalise this behaviour.

• Have a dedicated webpage for landlords/tenants of HMOs where they can check-in information they're not sure about.

Individuals don't rely on trusted sources of information

• Encourage people to refer to existing communications/to trusted sources of information, such as the council website, and to highlight they should keep the flyers/letters sent by the council.

• Improve and increase touchpoints with existing trustworthy information, and ensure reliable sources are valued by individuals living in HMOs.

Appendix

Appendix 1: Sample breakdown

Houses of Multiple Occupation are defined as properties that are rented out by at least three people who are not from the same household (or from the same family). These have individual bedrooms but share communal facilities, and are sometimes referred to as a house-share.

HMOs are highly varied, with no two households the same. They might have three residents, they might have 20-plus; some are flats, others houses. A single HMO could include family members, friends and strangers. In short, there is no typical HMO.

It was important that our sample captured the diverse demographics and lived experiences of those living in HMOs in London. All participants in this research lived in multiple occupancy housing and will use kerbside recycling. We identified key groups that live in shared houses, which we focuses on covering in our sample, including students, young professionals and new migrants. We included a wide range of criteria to ensure we covered a variety of experiences A range of criteria was included such as:

- **Geography:** A spread across the 6 boroughs
- **Households:** From 3 to larger numbers, as this may impact sense of responsibility. All had kerbside recycling
- **Length of occupation:** Spread from 2 months to 10+ years, as length of occupation is may influence commitment to recycling
- **Recycling:** Individuals with a range of attitudes and behaviours towards recycling. This sampling criteria was screened for as hidden questions amongst other questions about house chores and societal attitudes.
- **Demographics:** Including socio-economic status, occupation, gender (50:50) and ethnicity, and languages spoken (to understand how much language/culture is a barrier)

Respondents were found by professional recruiters and double screened by Revealing Reality according to the criteria agreed with Resource London.

Appendix 1: Sample breakdown

Pseudonym	Borough	Age	Occupation	Number of sharers	
Aldous	Haringey	26	Professional	4	BAME
Alice	Southwark	26	Professional	4	
Caroline	Haringey	26	Professional	4	
Chet	Brent	24	Undergraduate student	4	BAME
Ellie	Merton	23	Professional	4	BAME
Emma	Kingston upon Thames	37	Transient	3	Recent migrant
Eric	Southwark	24	Professional	4	
Erin	Kingston upon Thames	24	Professional	4	
Grace	Ealing	34	Professional	5	
Grant	Haringey	45	Professional	3	Live-in landlord, older sharer
Harriet	Haringey	28	Professional	4	BAME

Pseudonym	Borough	Age	Occupation	Number of sharers	
Jane	Haringey	23	Undergraduate student	3	
Jay	Southwark	29	Professional - baker	4	
Jake	Brent	24	Undergraduate student	4	
Joseph	Southwark	25	Professional	5	
Juliet	Lewisham	30	Postgraduate student	6	Migrant
Laura	Croydon	26	Postgraduate student	3	BAME
Marianne	Lewisham	42	Postgraduate student	6	Older sharer
Mary	Southwark	24	Professional	4	
Miles	Merton	27	Professional	3	Live-in landlord
Paul	Lewisham	33	Undergraduate student	5	
Zain	Lewisham	24	Postgraduate student	5	BAME

Appendix 2: About ethnographic research

By adopting an ethnographic approach, this research was able to examine barriers to recycling in much greater depth than has been possible with the methods used in other recycling research.

Ethnography is a form of qualitative research. A prominent characteristic of the ethnographic approach is that context is key to understanding people's behaviour. By building a strong understanding of people's home environments, relationships and life priorities, what they say and do can be placed in the context of their wider lifestyle. This makes it more possible to uncover tensions, contradictions and insight into why they behave as they do.

To gather this rich data, respondents are engaged for several hours, unlike surveys or focus groups where the interaction is relatively short. As well as talking with respondents, ethnography includes observation—of both the environment (in this case, the waste set-up of properties and how the respondent interacted with it) and of social interactions (e.g. how the respondent and their flatmates interacted with each other).

Given this emphasis on context, analysis involved processing and comparing huge amounts of data, something that we predominantly did through discussing individual cases against analysis frameworks and noting down emerging themes before seeing how other cases map onto these same themes. In this case we mapped barriers to recycling according to whether they were personal, social or environmental barriers, and then identified which of these seemed to be the most common barriers.

Appendix 3: What makes HMOs unique? A comparison with flats and single household kerbside properties

Social

- In the Flats project, households were mainly made up of families, couples or those living alone. There was more of a sense of a family unit or a 'leader' (e.g. a parent).
- Those who lived alone could set up their own waste system and follow it without having to negotiate with other people.
- Residents in the Flats project were more likely to be aware of who took the rubbish out and when as their lives were more intertwined.
- HMOs are more likely to be made up of people who are not a family unit, and where there is not a designated leader. Their lives and routines are likely to be less intertwined, often operating on different schedules and not coming together as often as a family unit might (for instance, at dinnertime)
- In HMOs, there's often a sense of the situation being temporary, so people are more likely to put up with things they don't like. There may also be less of a sense of connection with the household or local area—in short, people are less invested.
- Residents of HMOs may be more afraid of conflict. Finding a new place to live can be hard. It may be more important to keep the peace.
- In HMOs, it may be that there is higher turnover of people moving in and out, so there are more positive influencing opportunities.
- In HMOs, there are more opportunities for interaction with a landlord, which can potentially spark conversation/consideration of recycling.

Environmental

- The HMOs we saw were often larger than the flats with communal recycling facilities. Physical space was less of a barrier.
- Kerbside recycling presented less of a challenge in terms of the distances people had to take their waste to external bins.

Personal

- Recycling knowledge was patchy across both flats and HMOs. People weren't checking their assumptions.