SAVE (Solent Achieving Value from Efficiency)

Report 5 – Identify control and trial sample groups

Document Ownership

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Criterion	Select the customers required for each group in the project, ensuring that they represent a cross-section of the population to allow extrapolation of results. Present findings and method of selection in report June 2015.
Evidence	Present findings in the form of a written report to Ofgem
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SAVE SDRC 5: Recruitment Report

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Contents

1   Introduction

The 'Solent Achieving Value from Efficiency' (SAVE) project is a Low Carbon Network (LCN) Fund project which is being led by Southern Electric Power Distribution (SEPD) in partnership with DNV-GL, Maingate Systems, University of Southampton, Future Solent, Neighbourhood Economics and EA Technology.

The project aims to trial and establish to what extent energy efficiency measures can be considered as a cost effective, predictable and sustainable tool for managing peak and overall demand as an alternative to network reinforcement. The project targets domestic customers only and will test the efficacy of a series of domestic electricity demand reduction interventions and to use the resulting data as the basis for the development of an evidence-based Network Investment Tool.

The interventions to be tested through a large sample domestic customer (household) trial will be:

1. Personalized data-driven messaging
2. Time-of-use incentives
3. LED light bulb replacement

These three intervention groups will be compared to a control sample and a randomised control trial (RCT) approach will be implemented to ensure robust conclusions can be drawn. Data to be collected will include repeated social surveys, time use diaries and electricity consumption through half hourly (or finer) dwelling level monitoring and, for 50% of the households, smart plug monitoring.

The purpose of this report is to meet the requirements of SDRC 5 as set out in Table 1. The report explains the overall approach taken to the recruitment of study participants ('customers') in order to meet the minimum requirements for an effective and robust 'factorial design' RCT trial as set out in the project proposal. This minimum requirement was the establishment of a randomly selected sample of at least 2,750 households that was representative of the population to be studied and who had agreed to take part in the study until completion of all subsequent fieldwork waves.

Table 1: SDRC 5 Requirement

SDRC 5: Identify control and trial sample groups	*5. Select the customers required for each group in the project, ensuring that they represent a cross-section of the population to allow extrapolation of results. Present findings and method of selection in report June 2015.*

2   Background and aims of the recruitment

The overall population from which the sample has been drawn was, as specified in the Full Submission, domestic households in the county of Hampshire together with the unitary authorities of Southampton, Portsmouth and the Isle of Wight. No specific types of households were to be allocated to specific trial groups as the learning and thus scientific objectives required that each trial and control group were themselves a representative random sample of the population to be studied. Were this not to be the case then trial results would not be generalizable to the (customer) population as a whole but merely to the specific groups selected. This principle also holds for studies where customers volunteer to take part through an active self-selection and sign-up process or where they have been recruited from non-random contact lists of previous study participants. In these cases any results only hold true for the (generally) highly unusual segments of the population who actively volunteer to take part in research projects and is therefore of little value in analysing the behavior of the wider customer base.

Accordingly, SAVE trial households were selected for recruitment using stratified random address selection method (see below) and no household or respondents were excluded from the random sampling process with the exception of:

1. Known student or multi-occupancy (shared) housing which were excluded from this longitudinal study on the basis of transience (high turnover) and associated difficulty in obtaining appropriate informed consent over time;
2. Blocks of flats with primary (whole building) and secondary (specific dwelling) doors due to difficulties of access to randomly selected addresses (flats).

As will be described, households at the randomly generated addresses were then contacted by an appointed fieldwork agency with a view to recruitment to the study. No additional publicity or appeal for volunteers was conducted to ensure that the random sampling approach was not contaminated by self-selected volunteers.

The recruitment of the sample to the study, including installation of monitoring equipment, was implemented through a contract awarded by SSEPD via tender to BMG Research. BMG Research have also been contracted to undertake further waves of fieldwork as the trials are implemented.

The remainder of this report describes in more detail the approach taken by BMG in collaboration with SAVE partners to the recruitment of the sample, the development of the recruitment survey instrument and the practical steps taken to install the power clamp and smart plug electricity consumption monitors. It also reports on the nature of the achieved sample

to date by comparing the distributions of key dimensions to Census 2011 data for the same geographical area thus demonstrating that it represents a cross-section of the population.

As the report will demonstrate, the recruitment process has met the minimum requirement for a 'factorial design' approach. However as the implementation and analysis of a factorial design trial is more complex than a basic approach (see Table 2) we intend to continue the recruitment process for a further 3-4 weeks at no additional cost in order to achieve an objective of at least 4,000 households. This will have the added advantage of providing an additional buffer against the inevitable attrition of households from the sample over time.

Table 2: Comparison of basic and factorial design approaches

Study Type	Trial implementation	Trial analysis
Randomized Control Trial (basic design)	Each test group receives 1 intervention only	Simple 'difference in difference' and analysis of variance approaches can be used
Randomized Control Trial (factorial design)	Each test group receives a combination of interventions	Multi-variate and multi-level regression modeling approaches must be used to reveal the 'net' effects of each intervention in isolation as well as different combinations of interventions

Our current rate of recruitment suggests that this will be achieved by the end of July and we will provide an updated version of this report when this figure has been achieved.

3   Methodological approach

3.1   Introduction

The study used best practice academic and commercial consumer research methods for the recruitment of the household sample. The recruited households were 'instrumented' to provide smart meter or smart meter-like data on temporal electricity consumption at an overall and appliance specific level (for certain appliances in a sub-sample of households), which could be linked to social scientific data.

3.2   Overview of study design

The project plans to use a 'case control' approach, with four Groups of households, three of which would receive interventions or combinations of interventions under the factorial approach, and one of which would act as the control. Households in all four of the Groups will be fitted with an electricity consumption monitor, and the additional interventions are outlined below:

- Group 1: LED intervention – the provision of a package of low energy LED light sources to reduce overall power consumption, especially at evening peaks;
- Group 2: Enhanced engagement campaign intervention – the provision of innovative information and media communications drawing on usage monitoring data collected during the baseline stage and aimed at reducing overall consumption, plus the provision of three smart 'pass through' plugs;
- Group 3: Distribution Network Operator (DNO) Time of Use (ToU) rebates – as Group 2 above, with the addition of ToU incentives at different times of day to incentivise time-shifting of demand, plus the provision of three smart 'pass through' plugs;
- Group 4: Control – no intervention.

3.3   Overview of sampling approach

The project adopted a stratified random address-based approach to sampling, using Census Output Areas (COAs) as the basic building block and using the Postcode Address File (PAF) to draw the random sample of addresses.

Following stratification by Index of Multiple Deprivation 2010 (IMD 2010)[1] and Rural Urban Classification 2011 (RUC 2011), 1,156 COAs were randomly selected, proportionate to the number of households accounted for in each stratum.

A total of 1,165 COAs were then randomly selected from each stratum proportionate to the number of households accounted for by each.

In each of the selected COAs a random sample of up to 50 addresses[2] was then randomly selected to give an initial sample of 58,233 households.

This sample was then screened against commercially available databases (Acorn, via UKChanges) to remove multi-occupancy households, flats/tower blocks and student households wherever possible.

As fieldwork progressed, it became apparent that, in order to achieve the required levels of installation, it was necessary to focus on COAs where a minimum of 25 addresses were available.

This reduced the overall number of selected COAs to 1,108, and the number of addresses to 50,440 (or 33% of all addresses in the originally selected COAs) but did not affect the overall nature of the sample.

Each of these households was then randomly allocated to one of the four intervention groups (LED, data-informed, data-informed plus incentives and

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[1] The Indices that combine to produce the overall Index of Multiple Deprivation have been constructed by the Social Disadvantage Research Centre at the University of Oxford. The IMD 2010 was constructed by combining seven transformed domain scores, relating to Income, Employment, Health and Disability, Education, Skills and Training, Barriers to Housing and Services, Crime and Living Environment.

[2] Three COAs have fewer than 50 addresses (37, 47, 49)

control), and allocated a unique household ID, which acts as the 'key' to the data collected from the household (both in terms of electricity consumption information, and survey data).

More details on the sampling approach can be found in Section 1 of this report.

3.4 Overview of approach to recruitment

Selected households were sent an introductory letter informing them of the background to the study, explaining that their household has been randomly selected for participation, and providing telephone and email contact details should they have any queries (see Annex 1). Details were provided on the reverse of the letter for those needing documents in large print or other accessible format, and in a range of community languages.

Following this each household was visited by one of BMG's field team, who described the longitudinal nature of the project, outlined the equipment we wanted to install, informed them of the survey elements (initial recruitment survey, then annual surveys for the three years of the project), outlined the incentives for participation (£30 on completion of recruitment and additional £5 for each follow-up survey, giving a total of £45 across the lifetime of the project) and invited them to participate in the study.

The details of households that agreed were collected via Computer Aided Personal Interview (CAPI) units in association with the unique household ID. This comprised the name of the target respondent (the person who was best placed to discuss energy use in the household) telephone contact number and email address where available. The monitoring equipment was then installed.

Following installation of the monitoring equipment householders were re-contacted either by email or telephone and invited to complete the initial recruitment survey via Computer Aided Web Interview (CAWI) where they have access, or Computer Aided Telephone Interview (CATI).

4 Questionnaire design

An initial draft of the recruitment questionnaire was developed by the University of Southampton, and was refined in association with the wider project team to ensure it captured the appropriate information to support the wider project objectives, and to inform the development of the interventions.

Piloting identified that the survey was overly long with an average of over 40 minutes versus a target length of 15 to 20 minutes, and also that it included a number of questions that were difficult for many households to answer (e.g. 'At what temperature do you typically set your thermostat in the winter?' and 'Approximately how often would you say the washing machine is set on a cold water cycle (i.e. up to 30ºC or 85ºF)'). Consequently a

number of questions were removed such that the average length for completion by telephone was 33 minutes.

The recruitment questionnaire was scripted for both Computer Aided Telephone Interview (CATI) and Computer Aided Web Interview (CAWI) completion, and a readable form of it is included in Annex 3 which is taken from the CATI version of the script. The CAWI version of the script is exactly the same, with the exception of ensuring it is appropriate for self-completion (e.g. instructions for completion, wording of questions) rather than interviewer-administered data collection.

In brief the questionnaire covers the following areas:

- Household enumeration (number in household, relationship to respondent, age, sex, working status and, where relevant, mode of transport to work/place of education);
- Household characteristics (tenure, electricity supply, bill payment, presence of smart meters/in-home displays, source of heating, typical times occupied, when built, insulation, water heating);
- Appliances owned, frequency of use between the hours of 4pm and 8pm, and ease of avoiding use at these times;
- Frequency of use of dishwashers and washing machines;
- Attitudes towards the environment and extent of sustainable behaviours;
- Political affiliation;
- Respondent and household demographics (length of occupancy, accommodation type, number of rooms, availability of cars, preferred methods of contact, NS-SEC, highest qualification, ethnicity, religion, disability status (the five latter items are recorded for both the respondent and Household Reference Person (HRP) where they are not one and the same), household income.

5 Sampling approach

As notes, a stratified random address-based approach to sampling has been implemented, using Census Output Areas (COAs) as the building block of our sample, and the Postcode Address File (PAF) from which to draw the random sample of addresses.

All COAs in Hampshire, the Isle of Wight, Portsmouth and Southampton were stratified by the Index of Multiple Deprivation 2010 (IMD 2010)[3], as shown in the figure below.

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[3] The Indices that combine to produce the overall Index of Multiple Deprivation have been constructed by the Social Disadvantage Research Centre at the University of Oxford. The IMD 2010 was constructed by combining seven transformed domain scores, relating to Income, Employment, Health and Disability, Education, Skills and Training, Barriers to Housing and Services, Crime and Living Environment. Stratification is undertaken within each local authority district.

Table 3: Number of COAs by IMD quintile

IMD 2011	1 – least deprived	2	3	4	5 – most deprived	TOTAL
Hampshire	922	832	793	812	895	**4,254**
Isle of Wight	93	90	80	97	106	**466**
Portsmouth	129	155	142	110	114	**650**
Southampton	157	142	165	149	153	**766**
TOTAL	**1,301**	**1,219**	**1,180**	**1,168**	**1,268**	**6,136**

Within this, the COAs were then stratified by the Rural Urban Classification 2011 (RUC 2011), as shown in the figure below. Full descriptions of the labels are as follows:

- **Rural hamlet and isolated dwellings**: OA is assigned to the 'hamlet and isolated dwelling' settlement category. The wider surrounding area is less sparsely populated
- **Rural town and fringe**: OA is assigned to the 'town and fringe' settlement category. The wider surrounding area is less sparsely populated
- **Rural village**: OA is assigned to the 'village' settlement category. The wider surrounding area is less sparsely populated
- **Urban city and town**: OA falls within a built-up area with a population of 10,000 or more and is assigned to the 'city and town' settlement category. The wider surrounding area is less sparsely populated

Table 4: Number of COAs by IMD quintile by Rural Urban classification

| LA/County | Urban/Rural | IMD quintile | | | | | |
		1	2	3	4	5	TOTAL
Hampshire	Rural hamlet and isolated dwellings	17	56	83	51	15	**222**
	Rural town and fringe	146	134	67	72	28	**447**
	Rural village	21	78	107	55	11	**272**
	Urban city and town	738	564	536	634	841	**3,313**
Isle of Wight	Rural hamlet and isolated dwellings	4	9	10	2	1	**26**
	Rural town and fringe	23	21	20	16	17	**97**
	Rural village	6	16	6	5	2	**35**
	Urban city and town	60	44	44	74	86	**308**
Portsmouth	Urban city and town	129	155	142	110	114	**650**
Southampton	Urban city and town	157	142	165	149	153	**766**
TOTAL		**1,301**	**1,219**	**1,180**	**1,168**	**1,268**	**6,136**

The number of households in each stratum was calculated using Census 2011 data, as shown in the figure below.

Table 5: Number of households by IMD quintile by Rural Urban classification

| LA/County | Urban/Rural | IMD quintile | | | | | |
		1	2	3	4	5	TOTAL
Hampshire	Rural hamlet and isolated dwellings	1,683	6,022	9,305	6,000	1,824	**24,834**
	Rural town and fringe	19,341	17,635	9,099	9,495	3,481	**59,051**
	Rural village	2,742	9,260	13,336	6,546	1,348	**33,232**
	Urban city and town	93,948	71,909	69,555	82,203	110,522	**428,137**

Isle of Wight	Rural hamlet and isolated dwellings	509	1,233	1,240	239	133	**3,354**
	Rural town and fringe	2,808	2,555	2,674	2,076	2,243	**12,356**
	Rural village	827	2,084	745	681	269	**4,606**
	Urban city and town	7,636	5,599	5,622	10,119	11,793	**40,769**
Portsmouth	Urban city and town	16,612	20,271	18,783	14,521	15,286	**85,473**
Southampton	Urban city and town	20,163	18,560	21,217	18,864	19,450	**98,254**
TOTAL		**166,269**	**155,128**	**151,576**	**150,744**	**166,349**	**790,066**

A total of 1,165 COAs were then randomly selected from each stratum proportionate to the number of households accounted for by each. In each of the selected COAs a random sample of up to 50 addresses[4] was then drawn to give an initial sample of 58,233 households.

This sample was then screened against commercially available databases (Acorn, via UKChanges) to remove the following types of household wherever possible:

- Multi-occupancy;
- Flats/tower blocks;
- Student households.

This process reduced the overall number of selected COAs to 1,150 (see Table 6 - 15 had zero remaining addresses), and the number of addresses to 51,111.

Table 6: Number of sampled COAs by IMD quintile by Rural Urban classification

		IMD quintile					
LA/County	Urban/Rural	1	2	3	4	5	TOTAL
Hampshire	Rural hamlet and isolated dwellings	4	10	13	8	3	**38**
	Rural town and fringe	28	24	13	14	5	**84**

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[4] Three COAs have fewer than 50 addresses (37, 47, 49)

	Rural village	4	14	20	10	2	**50**
	Urban city and town	135	105	101	120	160	**621**
Isle of Wight	Rural hamlet and isolated dwellings		1	2	1		**4**
	Rural town and fringe	4	5	4	3	4	**20**
	Rural village	1	3	1	1		**6**
	Urban city and town	12	8	9	14	16	**59**
Portsmouth	Urban city and town	27	31	26	20	22	**126**
Southampton	Urban city and town	29	27	32	30	24	**142**
TOTAL		**244**	**228**	**221**	**221**	**236**	**1,150**

As fieldwork progressed, it became apparent that, in order to achieve the required levels of installation, it was necessary to focus on COAs where a minimum of 25 addresses were available.

This reduced the overall number of selected COAs to 1,108, and the number of addresses to 50,440 (or 33% of all addresses in the originally selected COAs).

It should be noted that, while attempts were made to remove flats from the selected sample, where a flat was sampled, it was included within the sample where it was possible to undertake an installation (e.g. flats in converted houses, some smaller blocks of flats etc.).

Each of these households was then randomly allocated to one of the four intervention groups (LED, data-informed, data-informed plus incentives and control), and allocated a unique household ID, which acts as the 'key' to the data collected from the household (both in terms of electricity consumption information, and survey data).

6   Recruitment method

6.1   Introductory letter

Selected households were sent an introductory letter informing them of the background to the study, explaining that their household has been randomly selected for participation, and providing telephone and email contact details should they have any queries (please see Appendix 1). Details were provided on the reverse of the letter for those needing documents in large

print or other accessible format, and in a range of community languages. To date, one request has been received to receive the materials in Braille, and one to receive them in Chinese.

Telematching was undertaken on the addresses in the sample in an attempt to source contact names and telephone numbers where possible to enable a personal addressing of the letter. However the reliability of these details was not sufficiently guaranteed to use for mailing purposes and so letters were addressed to 'the Householder', as names were not available on the Postcode Address File PAF.

At this stage a number of households made contact via telephone or email to opt-in to the study (651 to date), and a number to opt-out (335 to date).

6.2   Installation visit

Following the letter households were visited by one of BMG's field team, who described the longitudinal nature of the project, outlined the equipment we would like to install, informed them of the survey elements (initial recruitment survey, then annual surveys for the three years of the project), outline the incentives for participation (£30 on completion of recruitment and additional £5 for each follow-up survey, giving a total of £45 across the lifetime of the project) and invited them to participate in the study.

The details of households that agreed were collected via Computer Aided Personal Interview (CAPI) units in association with the unique household ID. This comprised the name of the target respondent (the person who was best placed to discuss energy use in the household) telephone contact number and email address where available. The monitoring equipment was then installed.

The monitoring equipment is then installed. This consisted of:

- A meter clamp which was fitted around the live electricity cable coming from the meter box, and attached to a battery-powered electricity monitor;
- A mains-powered gateway which transmits the usage information captured via the monitor to the project partners via Ethernet cable fitted to the household's broadband router (where possible) or via SIM card (where not possible to use the household's broadband).

For the two data-informed groups of households, up to three smart plugs were also installed on three household appliances. The appliances were selected according to a priority list (See Annex 2) developed by the project based on an analysis of energy consumption levels for these appliances in data sourced from other studies. In some instances the physical properties of the appliance or its mains connection made it necessary to work down the list to find suitable appliances. In other instances householders expressed aesthetic concerns over plugs being attached to particular appliances, and in such instances the field worker worked with the householder to identify up to three acceptable locations for the smart plugs. The location of the plugs was recorded on the CAPI unit, in association with the unique household ID.

6.3   Recruitment survey

Following installation of the monitoring equipment householders were re-contacted either by email or telephone and invited to complete the initial recruitment survey via Computer Aided Web Interview (CAWI) where they have access and are happy to do so, or Computer Aided Telephone Interview (CATI).

The current average length of the CATI survey was 33 minutes.

6.4   Incentive payments

Either at the installation stage, or following completion of the recruitment survey, each participating household was given £30 worth of Love2Shop vouchers either in hard copy for use in a variety of physical retailers, or as e-vouchers for online purchases.

Participating households will be given an additional £5 worth of vouchers on completion of the second, third and fourth survey rounds.

7   Outcomes and response rates

7.1   Installation of monitoring equipment

The figure below summarises the most recent outcome for each of the addresses visited to date [5], and indicates that installations have been completed in 3,056 households, which equates to a response rate of 17%.

Table 7:Most recent call outcome

	Number of addresses	% of addresses
Installation complete	3,056	17%
No reply	5,267	28%
Call back	911	5%
Refusal	7,335	40%
Address not found	114	1%
Unoccupied	249	1%
Business premises/institution	89	0%
Screened out (multi-occupancy, student household, block of flats)	635	3%

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[5] It should be noted that 5,267 addresses have been visited where there was no reply, but these addresses remain active until they have been visited up to 5 times, at which point they become 'exhausted' contacts.

Exhausted contact	793	4%
Removal of equipment	36	0%
TOTAL	**18,485**	**100%**

7.2   Recruitment survey

A total of 1,305 recruitment surveys have been undertaken to date, which equates to 43% of households where an installation has been completed. A sample size of 1,305 carries a maximum confidence interval of ±2.7% at the 95% level of confidence. In the following sections we present descriptive data on key attributes of the surveyed households in order to assess the extent to which the sample is representative of the population of the areas from which it is drawn. Whilst the surveyed households are not yet 100% of installed households due to a short lag between installation and subsequent survey, the stratified random sample selection and recruitment approach means that we do not expect the sample distributions to change substantially as we approach 100% survey coverage of all installed households in the next few weeks.
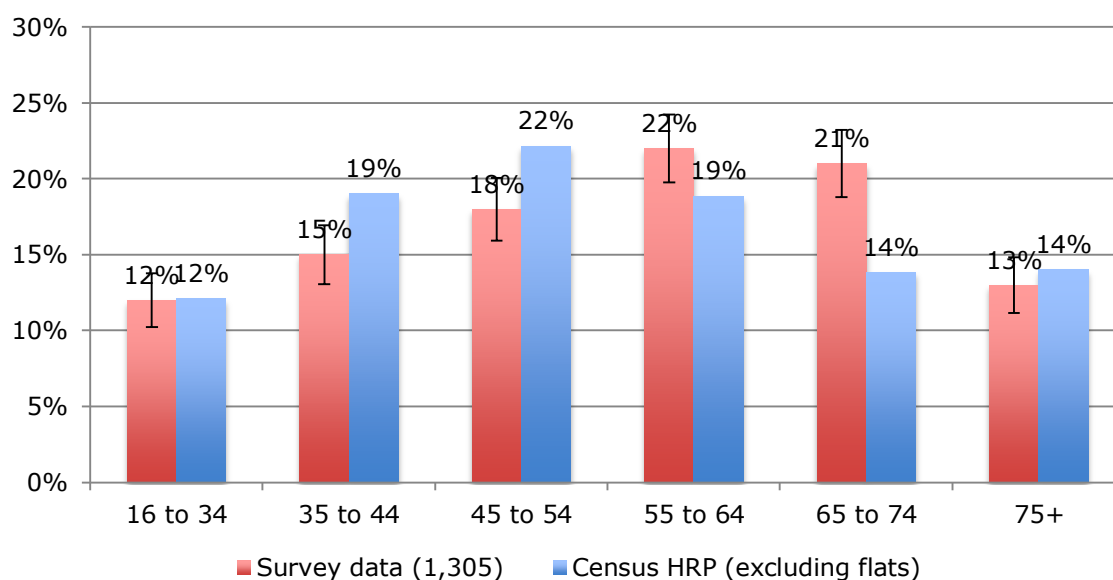
7.3   Demographic profile of surveyed sample

The figure below indicates the HRP age profile of this group, and compares it with Census 2011 figures[6]. It should be noted that, due to the deliberate exclusion of a number of types of household (multi-occupancy, flats, student households), it is not possible to access entirely comparable Census information. Consequently we have drawn Census figures which exclude flats[7] as the closest approximation of the research sample.

On this basis it can be seen that the HRP age profile largely reflects Census figures for those aged 16 to 44 and those aged 75+, whilst we have slightly but not substantially fewer HRPs aged 35-54 and more aged 55-74 than Census figures indicate.

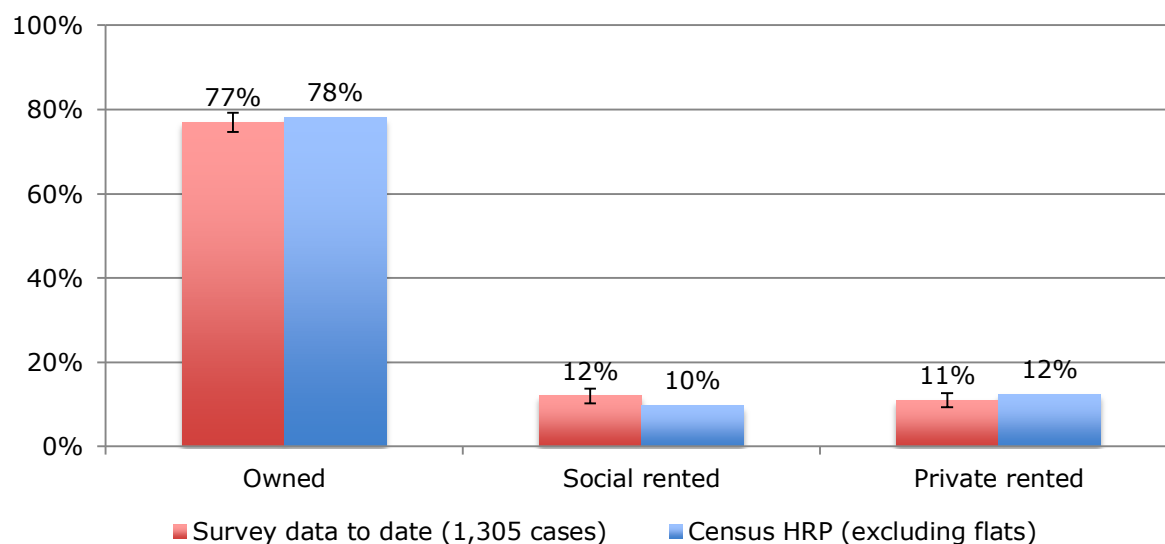[6] Census data is based on figures for Hampshire, the Isle of Wight, Portsmouth and Southampton.

[7] This includes the following classifications: flat, maisonette or apartment in a purpose-built block of flats or tenement; flat, maisonette or apartment that is part of a converted or shared house (including bed-sits); flat, maisonette or apartment in a commercial building or mobile/temporary accommodation.

Table 8: HRP age compared to Census 2011 (excluding flats)

Sample base in parentheses
Error bars indicate the possible range of values at the 95% confidence interval

The figure below shows how the tenure profile of the surveyed sample compares with Census 2011 figures, again excluding flats, and indicates a close match on this basis.

Table 9: HRP tenure compared to Census 2011 (excluding flats)

Sample base in parentheses
Error bars indicate the possible range of values at the 95% confidence interval

In terms of central heating, Census 2011 data indicates that 2% of houses do not have central heating, and this rises to 5% of flats. This compares to 4% of the surveyed sample.

The figure below shows how the sex profile of the surveyed sample compares with Census 2011 figures, based on all HRPs in this instance, and again indicates a very close match.

Table 10: HRP sex compared to Census 2011

■ Survey data to date (1,305 cases)   ■ Census 2011 HRP

Sample base in parentheses
Error bars indicate the possible range of values at the 95% confidence interval

The figure below shows how the profile of accommodation type of the surveyed sample compares with Census 2011 figures. In this instance, comparative figures from Census are presented both including flats and excluding flats.

While attempts were made to remove flats from the selected sample, they were not purposively excluded during the recruitment fieldwork. Consequently, where a flat was sampled, it was included within the sample where it was possible to undertake an installation (e.g. flats in converted houses, some smaller blocks of flats etc.). On this basis 9% of participating households are flats, as compared to the actual prevalence of 21%. Levels of detached, semi-detached and terraced houses are comparable with Census 2011 results with perhaps a slight over-sampling of detached homes.

Table 11: Accommodation type compared to Census 2011
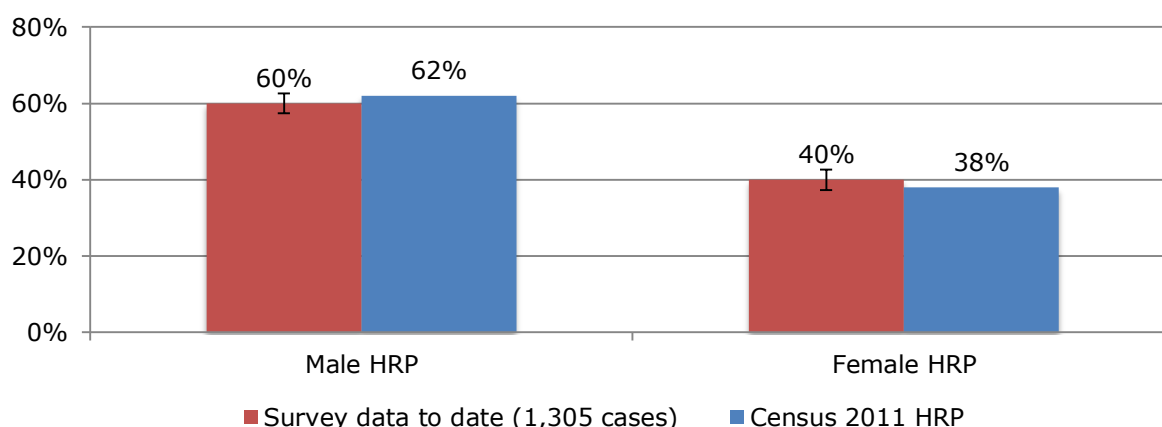

■ Survey data to date (1,305 cases)   ■ Census 2011 (including flats)   ■ Census 2011 (excluding flats)
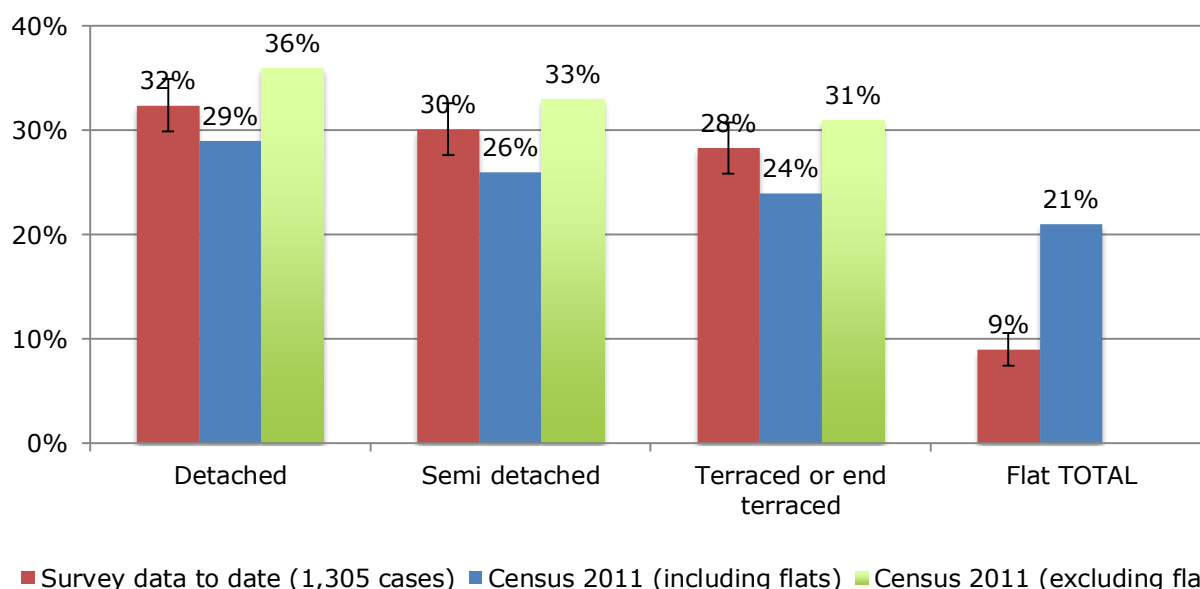
Sample base in parentheses
Error bars indicate the possible range of values at the 95% confidence interval

7.4   Non-response

Table 12 below shows the most common reasons cited for non-participation for those households who refused to take part when visited by an installer where people provided an indication. Despite the fact that people with plans to move were included within the scope of the study, 'moving' was the most common reason provided (25%) for not participating. In these instances, even when installers explained that moving was not a barrier to participation, these householders did not wish to take part. The second most common reason was simply a disinclination to participate (18%).

Close to one in ten (9%) felt that they were too old or poorly to participate, and a similar proportion (8%) were living in student households, so were excluded on this basis.

Again close to one in ten (8%) mentioned issues relating to tenancy, despite reassurances from installers that the equipment installed is entirely temporary, and there being no need to seek permission from their landlord, and one in twenty (4%) wanted to check with another household member before committing to participation.

One in twenty (5%) declined to participate due to concerns over security.

The reasons outlined above also reflect those provided by households who proactively contacted BMG to elect not to participate, although fewer mentioned the issue of moving, which is perhaps a reflection of the fact that they are intending to move, and so do not feel the need to engage with the study by actively making contact.

Table 12: Reasons for refusal (where provided a response)

Moving	25%
Not interested	18%
Too old/retired/poorly	9%
Students	8%
Tenant/needs to check with landlord	8%
Security concerns/concerns re: equipment	5%
Want to discuss with other household member	4%
House sitting	3%
Personal issue/circumstances	2%
Already got a smart meter	2%
Sample base	(344)

7.5   Accommodation type

The figure below shows how accommodation type differs for those households where an installation has been undertaken, and those households randomly selected for participation where the call outcome to date indicates no installation has taken place.

The main difference between the two groups is that the study sample is more likely to include detached properties (28% compared to 21%) and less likely to include terraced or end-terraced properties (35% compared to 41%). However these differences are not of sufficient magnitude to become a cause for concern.

Table 13: Accommodation type by whether installation has been completed or not

Sample base in parentheses
Error bars indicate the possible range of values at the 95% confidence interval

8   Summary

Overall this report has demonstrated that the SAVE study recruitment process has achieved its minimum requirement of the establishment of a randomly selected sample of at least 2,750 households that was representative of the population to be studied.

Further, in response to the SDRC requirements laid out in Table 1, the report has detailed the processed used to establish a study sample which represents a cross-section of the population to allow extrapolation of results and provides evidence. The report has then provided evidence that these processes were successful. Whilst there are some small differences in HRP age and accommodation type distributions these are not of sufficient magnitude to be a cause for concern. Whilst the surveyed households are not yet 100% of installed households due to a short lag between installation

and subsequent survey, the recruitment approach means that we do not expect the sample distributions to change substantially as we approach 100% survey coverage of all installed households in the next few weeks.

As noted above, although the recruitment process has achieved its minimum requirement, the project intends to continue the recruitment process for a further 3-4 weeks in order to achieve our secondary objective of at least 4,000 households. This will enable a simplified and easier to manage approach to trial interventions and analysis to be implemented whilst maintaining appropriate robustness. This enhanced sample size will also provide mitigation against the risk of household attrition in future stages of the study.

Our current rate of recruitment suggests that this will be achieved by the end of July and we will provide an updated version of this report when this figure has been achieved.

Annex 1   Introductory Letter

June - August 2015

Dear householder,

The University of Southampton would like your help.

It is conducting a research project to examine how people in the Solent area use energy in their homes.

The aim of the three year project is to see if we can:

*   Reduce energy use
*   Find ways to reduce carbon emissions

To ensure we have a varied list of households and property types your home has been chosen at random to take part in the trial.

If you would like to be in the trial we will install equipment to measure your electricity usage. This will have no impact on your household's electricity supply. Your data will be confidential and used in accordance with the Data Protection Act.

As a way of saying thank you, after you sign up, we will give you £30 of vouchers which can be used in a wide variety of retail and entertainment outlets.

A researcher from BMG will contact you over the next few weeks either in person or over the phone to see if you are happy to take part in the trial. They will also make arrangements to undertake a survey with you about your household's electricity use.

For further information, or to suggest a suitable time, please contact BMG's help desk:

By telephone on: **0800 358 0337** (office hours)

Or by email on: **energy@bmgresearch.co.uk**.

For more details on the project please go to:

www.bmgresearch.co.uk/projects/energyuse

This is an important trial which could change the way we use energy in the future. While your participation is voluntary we hope you're willing to take part.

Yours,

Professor AbuBakr Bahaj
Head of Division, Energy & Climate Change, University of Southampton

Police Reference Number: 15031000418

This study is being conducted in accordance with the Data Protection Act. This means your personal details will be kept strictly confidential and you and your household will not be identifiable from the data.

If you require a large print copy or other accessible format please contact BMG Research on 0800 358 0337

Arabic:	إذا كنت بحاجة إلى نسخة من هذا الاستبيان بهذه اللغة، برجاء الاتصال برقم فون فري في نهاية هذه الصفحة.
Bengali:	যদি আপনি এই ভাষায় এই প্রশ্নাবলীর একটি কপি চান, তাহলে অনুগ্রহ করে পৃষ্ঠার নিচে দেওয়া বিনা মাশুলের টেলিফোন নম্বরে ফোন করুন।
Chinese (traditional):	如果你需要這份調查問卷的中文譯版，請打本頁下方的免費號碼。
Chinese (simplified):	如果你需要这份调查问卷的中文译版，请打本页下方的免费号码
French:	Si vous souhaitez recevoir une copie de ce questionnaire en français, veuillez contacter le numéro vers situé au bas de cette page.
German:	Wenn Sie möchten, erhalten Sie eine Kopie des Fragebogens in Deutsch, bitte rufen Sie die Nummer unten auf der Seite.
Italian:	Se lei ha bisogno di una copia del questionario in questa lingua, per favore chiami il numero al fondo della pagina.
Nepalese:	इफ यौ विष तो रेचेइवे अ कापी ओफ द कुएस्तिओन्नैरे इन नेपाली प्लेअसे चल द नुम्बेर अत द बोत्तोम ओफ थिस पगे.
Polish:	Jeżeli potrzebuje Pan/Pani egzemplarz niniejszego kwestionariusza w języku polskim, prosimy zadzwonić pod bezpłatny numer telefonu podany na dole tej strony.
Portugese:	Se você requerer uma cópia deste questionário nesta língua, chame por favor o número do freephone no fundo desta página.
Punjabi:	ਜੇ ਤੁਹਾਨੂੰ ਇਸ ਭਾਸ਼ਾ ਵਿਚ ਇਸ ਪ੍ਰਸ਼ਨਮਾਲਾ ਦੀ ਕਾਪੀ ਦੀ ਲੋੜ ਹੈ ਤਾਂ ਕਿਰਪਾ ਕਰਕੇ ਇਸ ਸਫ਼ੇ ਦੇ ਅੰਤ ਵਿਚ ਦਿੱਤੇ ਹੋਏ ਫਰੀਫੋਨ ਨੰਬਰ ਤੇ ਫੋਨ ਕਰੋ।
Russian:	если Вы требуете этого письма на этом языке, пожалуйста назовите бесплатный телефонный номер ниже.
Spanish:	Si usted requiere una copia de este questionario en este idioma, por favor llame al número al final de esta página.
Tamil:	இந்தக் கடிதத்தை இந்த மொழியில் நீங்கள் வேண்டினால், தயவுசெய்து கீழுள்ள இலவச தொலைபேசி இலக்கத்தில் தொடர்புகொள்ளவும்.
Filipino:	Kung gusto ninyo ng isang salin ng tagalog sa listahan ng mga tanong, tawagan mo ang numero sa ibaba ng papel.
Urdu:	اگر آپ کو اس زبان میں اس سوالنامے کی ایک کاپی درکار ہو تو براہ کرم اس صفحے کے آخر میں دیے گئے فری فون نمبر پر فون کریں

0800 358 0337

This study is being conducted in accordance with the Data Protection Act. This means your personal details will be kept strictly confidential and you and your household will not be identifiable from the data.

Annex 2   Priority list of appliances for smart plugs

Washing machine/tumble dryer
Standalone washing machine
Standalone tumble dryer
Dishwasher
Electric heater 1
Electric heater 2
Electric heater 3
Main TV only (not attached to extension cable)
Main TV attached to extension cable
Microwave
Other TV only (not attached to extension cable)
Other TV attached to extension cable
Other TV 2 only (not attached to extension cable)
Other TV 2 attached to extension cable
Kettle
Vacuum cleaner
Iron
Hair dryer
HiFi/ Home cinema/ Games or TV console
Toaster
Coffee machine
Fryer
Food mixer
Dehumidifier
Steriliser
Fan
Desktop PC/ PC monitor/ Speakers/ Modem or Router
Lamp/ light
Adapter with several sockets for other
Another appliance/device

Annex 3   Recruitment survey questionnaire

PRO 9566 SAVE RECRUITMENT QUESTIONNAIRE [17]

READ: Good morning/afternoon/evening. My name is ……. and I work for BMG Research.
May I speak to **[NAMED CONTACT]**

I'm calling about the energy use research study we are undertaking with the University of Southampton. We recently visited your household to install some electricity monitoring equipment, and would now just like to take you through the survey. It should take between 20 and 25 minutes to complete.

IF NECESSARY: When we came to install the equipment we were told that you would be the person in the household who would be best placed to answer questions about the household and how it uses electricity. Is this the case or is there someone else in the household who we should talk to?

> Self
>
> Other (**SPECIFY**)

Call outcome

Interview now
Appointment
Refused (specify reason)

IF NECESSARY: The survey asks about your house (age, size etc.) and the kinds of appliances your household has and how and when you use them.

IF NECESSARY REMIND ABOUT INCENTIVES:

As a thank you for agreeing to take part, we have given/will be giving you you **£30** of high street vouchers.

We will also be calling to undertake a short 10 to 15 minute telephone survey towards the end of this year, and again for the next two years, and you will receive an additional **£5 of vouchers** after completing each telephone survey.

ALL

1.1   *Can you help by taking part please?*
   CODE 1

   1. Yes
   2. No

This study is being conducted in accordance with the Data Protection Act. This means your personal details, including information about your energy use, will be kept strictly confidential and you and your household will not be identifiable in any project results.

READ OUT: First we need to understand who lives here.

ALL

2   Household enumeration

[Complete the household table below, using showcards] Please can you tell me…

a.   How many people live here? Please include those who are here regularly, even if not every day (**IF NECESSARY**: e.g. children at weekends). [PROVIDES CHECK]

b.   What is your age, (insert gender), and working status?

c.   [For each further person in the household]

d.   What is their relationship to you?

e.   What is their age, gender and working status?

f.   [**IF WORKING OR AT SCHOOL**] And how do you/they usually get to their workplace/place of education?

CODE ONE IN EACH CELL FOR EACH HOUSEHOLD MEMBER. IF THERE ARE MORE THAN 8 MEMBERS IN THE HOUSEHOLD ASK FOR THE EIGHT OLDEST MEMBERS

Person	a) Relationship to respondent	b) Age	c) Sex	d) Working status	e) Mode of transport
1	Respondent				
2					
3					
4					
5					
6					
7					
8					

OPTIONS TO RECORD IN a, b, d AND e ABOVE

a) Relationship to you		b) Age Group		d) Working status**		e) Mode of transport	
Husband, wife or partner	1	Under 16	1	Full-time paid work (30+ hrs per week)	1	Car/van/truck	1
Son or daughter	2	16-24	2	Part-time paid work (8 – 29 hrs per week)	2	Motorbike/ moped/scooter	2
Parent/ parent in-law	3	25-34	3	Part-time paid work (under 8 hrs per week)		Bicycle	3
Other relative	4	35-44	4	Self-employed	3	Public transport	4
Friend	5	45-54	5	Unemployed (seeking work)	4	Taxi	5
Lodger	6	55-64	6	Unemployed (not seeking work)	5	Walking	6
Other unrelated	7	65-74	7	Retired	6	Other	7
		75+	8	Looking after home/family	7		
		Refused	9	Permanently sick/disabled	8		
				Student (19 – 24 years old)	9		
				Student (16 – 18 years old)	10		
				School (under 16 years old)	11		
				Pre-school/ nursery	12		
				Other	13		
				IF WORKING: [2d=1 – 4]			
				At home all the time			
				At home most of the time			
				At home some of the time			
				At home occasionally			
				Never at home			
				Refused			

**NB: Only code 'student' if person does not fit any other category (i.e. if full-time student and working part-time, code as working part-time).

3   Household Inventory

READ OUT: We'd like to start by asking you a little about your home, your electricity supply and the appliances your household has which use electricity.

ALL

3.1   Does your household own or rent this accommodation?

READ OUT AND CODE ONE

1. Own outright
2. Own with a mortgage or loan
3. Part own and part rent (shared ownership)
4. Rent (with or without housing benefit)
5. Tied/linked to job
6. Live here rent free
7. Other

IF TENANT (3.1 = 3 to 6)

3.2   Who is your landlord?

READ OUT AND CODE ONE

1. Housing association, housing co-operative, charitable trust, registered social landlord
2. Council (local authority)
3. Private landlord or letting agency
4. Employer of a household member
5. Relative or friend of a household member
6. Other WRITE IN
7. Don't know

ALL

3.3   How is electricity provided to your home?

READ OUT AND CODE ALL THAT APPLY

1. Mains
2. Solar panels that generate electricity/photovoltaic solar panels
3. Wind turbine
4. Hydro generator
5. Combined Heat and Power systems which generate heat and electricity simultaneously, with any excess electricity produced going back into the grid
6. Own generator
7. Other (**SPECIFY**)
8. Don't know

ALL

*3.4   Do you have 'green tariff' electricity (**IF NECESSARY**: this means that some or all of the electricity you buy is 'matched' by purchases of renewable energy that your energy supplier makes on your behalf)?*

CODE ONE

1. Yes
2. No
3. Don't know

ALL

3.5   *Do you have Economy 7, Economy 10 (also known as Heatwise) or Powershift?*

CODE ONE

1. Yes – Economy 7 (**IF NECESSARY**: this gives a cheaper electricity rate for seven hours at night and a more expensive one for the rest of the time)
2. Yes – Economy 10/Heatwise (**IF NECESSARY**: this gives a cheaper electricity rate for ten hours a day, seven at night and three during the afternoon, and a more expensive for the rest of the time)
3. Yes – Powershift 7 (**IF NECESSARY**: this means that you have three rates: peak during 4pm and 7pm on weekdays, low during the night, and normal for the rest of the time)
4. Yes – not sure which
5. No
6. Don't know

ALL

3.6   *Do you also have gas?*

CODE ONE

1. Yes – mains
2. Yes – LPG
3. No
4. Don't know

IF HAS GAS ALSO (3.6 = 1)

3.7   *Do you pay for your electricity and gas in a single bill?*
CODE ONE

1. Yes
2. No

ALL

3.8   *How do you pay your electricity bills?*

READ OUT AND CODE ONEONLY

1. Monthly direct debit
2. Quarterly direct debit
3. Payment on receipt of bill by post, telephone, online or at bank/post office
4. Pre-payment (keycard, slot or token) meter
5. Included in rent (**TENANTS ONLY: 3.1 = 3 to 6**)
6. Fuel Direct/Third Party Deductions/benefits
7. Fixed annual bill regardless of energy used (e.g. Staywarm)
8. Community-based energy buying scheme
9. Other
10. Don't know

ALL

3.9   Do you have a smart electricity *< IF HAS GAS ALSO (3.6 = 1):and/or gas> meter? (IF NECESSARY: By this I mean the physical meter that bridges the gap between the mains supply and your household. Energy suppliers are starting to replace the traditional types of energy meters with smart meters that accurately measure your household's energy consumption, and they often come with in-home displays, which give you real-time feedback on your energy usage and what it is costing)?*

   CODE ONE

   1. Yes – smart electricity meter
   2. Yes – smart gas meter **(ONLY IF 3.6 = 1 OR 2)**
   3. No
   4. Don't know

ASK ALL

3.10 *Do you have access to an in-home display, such as a smart monitor you have installed yourself or that someone has installed for you, which gives you real-time feedback on your energy usage and what it is costing? (IF NECESSARY: A sensor clip and portable display that shows energy use and cost)*

   CODE ONE

   1. Yes
   2. No
   3. Don't know

ALL

3.11 *Do you tend to read your electricity meter, or do you rely on your electricity bills or other sources to tell you how much electricity your household is using?*
   PROBE FOR RESPONSE AND CODE ONE ONLY

   1. Read meter regularly
   2. Read meter when I get a bill
   3. Rely on electricity bills
   4. Read meter when I am asked to by provider
   5. None of these/don't take any notice
   6. Don't know

ALL

3.12 *What is your **main** source of heating?*
   READ OUT AND CODE ONE ONLY

   1. Electricity – storage heaters
   2. Other electricity e.g. ground source heat pumps
   3. Gas boiler
   4. Oil e.g. fuel oil or heating oil
   5. Solid fuel e.g. wood or coal
   6. Biomass for boiler
   7. Open fire(s) and/or woodburning stove(s)
   8. Other
   9. Don't know

IF CENTRAL HEATING (3.12 = 1 to 6)

3.13   *Which, if any, of the following does your main heating system have?*

READ OUT AND CODE ALL THAT APPLY

1. Programmer/timer switch over which you have control
2. Single house thermostat (**CANNOT BE CODED WITH 3**)
3. Room thermostats (**CANNOT BE CODED WITH 2**)
4. Thermostatic radiator valves
5. (**IF STORAGE HEATERS: 3.12 = 1 or 2**) Storage heater dials
6. None
7. Don't know

ALL

3.14   *Generally speaking, during winter when heating needs are greatest, at which times of day are you or someone else regularly at your home?*

READ OUT AND CODE ONE ONLY

1. All day/all the time (**ONE CODE ONLY**)
2. Weekdays 6am to 9am
3. Weekdays 9am to 12pm
4. Weekday lunchtime (12pm to 2pm)
5. Weekday afternoons (2pm to 5pm)
6. Weekday evenings
7. Weekend daytimes
8. Weekend evenings
9. Highly variable (**ONE CODE ONLY**)
10. Don't know
11. Refused

ALL

3.15   *When was your house built??*

PROBE AND CODE ALL THAT APPLY

1. Pre 1850
2. 1850 to 1899
3. 1900 to 1918
4. 1919 to 1930
5. 1931 to 1944
6. 1945 to 1964
7. 1965 to 1980
8. 1981 to 1990
9. 1991 to 1995
10. 1996 to 2001
11. 2002 or later
12. Don't know
13. Refused

ALL

3.16 *What type of walls does your property have, cavity walls, solid or stone walls, or is it timber-framed?*
CODE ALL THAT APPLY

IF NECESSARY: *Sometimes it is possible to see what type of walls a property has by looking at the pattern of bricks on the outside of their house. Some bricks might be sideways on (not just around door and windows). This means the walls are solid rather than having a cavity*

IF RESPONDENT CANNOT IDENTIFY FROM BRICK PATTERN:
Most properties built before 1930 have solid walls. Is that what you think this property has?

Most properties built in 1930 or later have cavity walls. Is that what you think this property has?

1. Cavity walls
2. Solid or stone walls
3. Timber frame
4. Other (**SPECIFY**)
5. Don't know

ALL

3.17 *Which, if any, of the following does your home have?*
READ OUT AND CODE ALL THAT APPLY

1. Partial double glazing
2. Full double glazing
3. Secondary glazing
4. Draught proofing of windows and/or doors
5. Loft insulation
6. Underfloor insulation
7. (**IF STORAGE HEATERS: 3.12 = 1)** Storage heater dials
8. (**IF CAVITY WALLS: 3.16 = 1)** Cavity wall insulation
9. (**IF SOLID WALLS: 3.16 = 2)** Solid wall insulation
10. None

ALL

3.18   *How is your water heated?*

READ OUT AND CODE ALL THAT APPLY

1. Electric immersion heater (to hot water tank) (**IF NECESSARY:** They are electric water heaters that act like a kettle using an element to heat the surrounding water.)
2. Gas or oil direct heating (combi) (**IF NECESSARY:** They work by taking cold water straight from the mains supply and heating it as you need it, eliminating the need for a separate hot water tank. They are often small units found in cupboards.)
3. Gas, oil or solid fuel (including wood) indirect heating (to hot water tank) (**IF NECESSARY:** The boiler uses the fuel to heat the water, which is then in turn sent to a hot water cylinder or hot water storage tank where it is stored.)
4. Solar heating (to hot water tank)
5. Other (**WRITE IN**)
6. Don't know
7. Refused

ALL

3.19   *Can I check how many of the following you have in your home? Please only include those that are used at least once a week during the winter.*

READ OUT AND RECORD HOW MANY OF EACH (IF NONE WRITE '0')

1. Coffee-maker
2. Combined washing machine and tumble dryer
3. Standalone tumble dryer
4. Standalone washing machine
5. Dishwasher
6. Electric hob
7. Electric oven
8. Gas hob
9. Gas oven
10. Fridge-freezer
11. Fridge
12. Standalone freezer
13. Toaster
14. Kettle
15. Microwave
16. TV with a screen less than 21 inches (**IF NECESSARY**: The size of a TV is measured by the length of the diagonal of the screen)
17. TV with a screen more than 21 inches (**IF NECESSARY**: The size of a TV is measured by the length of the diagonal of the screen)
18. DVD player/Personal Video Recorder (PVR)
19. Games console/X box/Playstation
20. Mobile phones
21. PC/laptop
22. Handheld devices (iPads etc)
23. Air conditioning unit
24. Cooling fans
25. Humidifier
26. Dehumidifier
27. Plug in electric heater (such as fan heater or bar heater)
28. Vacuum cleaner
29. Bath
30. Power shower
31. Shower (excluding power shower)
32. Electric blanket
33. Hair drier

QUESTIONS 3.20, 3.21 AND 3.22 WILL BE ASKED OF EACH APPLIANCE IN TURN

FOR EACH THAT RESPONDENT HAS AT 3.19

3.20 *Please can you tell me how often your household uses or charges <xxxx> between the hours of four in the afternoon and eight in the evening?* (**IF NECESSARY**: *We are interested in this time specifically as this is when energy use across the country tends to be highest).*

READ OUT SCALE AND CODE ONE ONLY PER ROW

	Every day	Several times a week	Once or twice a week	Once a fortnight	Once a month	Less often	Don't know
Air conditioning unit	1	2	3	4	5	6	7
Bath	1	2	3	4	5	6	7
Coffee-maker	1	2	3	4	5	6	7
Combined washing machine and tumble dryer	1	2	3	4	5	6	7
Cooling fans	1	2	3	4	5	6	7
Dishwasher	1	2	3	4	5	6	7
DVD player/Personal Video Recorder (PVR) (**i.e. Sky/ virgin box**)	1	2	3	4	5	6	7
Electric blanket	1	2	3	4	5	6	7
Electric hob	1	2	3	4	5	6	7
Electric oven	1	2	3	4	5	6	7
Games console/X box/Playstation	1	2	3	4	5	6	7
Hair drier	1	2	3	4	5	6	7
Handheld devices (iPads etc)	1	2	3	4	5	6	7
Humidifier	1	2	3	4	5	6	7
Dehumidifier	1	2	3	4	5	6	7
Kettle	1	2	3	4	5	6	7
Microwave	1	2	3	4	5	6	7
Mobile phone	1	2	3	4	5	6	7
PC/laptop	1	2	3	4	5	6	7
Plug in electric heater (such as fan heater or bar heater)	1	2	3	4	5	6	7
Power shower	1	2	3	4	5	6	7
Shower (excluding power shower)	1	2	3	4	5	6	7
Standalone tumble dryer	1	2	3	4	5	6	7
Standalone washing machine	1	2	3	4	5	6	7
Toaster	1	2	3	4	5	6	7
TV with a screen less than 21 inches	1	2	3	4	5	6	7
TV with a screen more than 21 inches	1	2	3	4	5	6	7
Vacuum cleaner	1	2	3	4	5	6	7

WHERE HAS MORE THAN ONE OF EACH APPLIANCE AT 3.19 AND USES ONCE OR TWICE A WEEK OR MORE OFTEN (3.20 = 1 to 3)

3.21 How often would you say that your household uses or charges **more than one** <xxxx> between the hours of four in the afternoon and eight in the evening?

READ OUT SCALE AND RESPONSE OPTIONS AND CODE ONE ONLY PER ROW

	Every day	Several times a week	Once or twice a week	Once a fortnight	Once a month	Less often	Don't know
Air conditioning unit	1	2	3	4	5	6	7
Bath	1	2	3	4	5	6	7
Coffee-maker	1	2	3	4	5	6	7
Combined washing machine and tumble dryer	1	2	3	4	5	6	7
Cooling fans	1	2	3	4	5	6	7
Dishwasher	1	2	3	4	5	6	7
DVD player/Personal Video Recorder (PVR) **(i.e. Sky/ virgin box)**	1	2	3	4	5	6	7
Electric blanket	1	2	3	4	5	6	7
Electric hob	1	2	3	4	5	6	7
Electric oven	1	2	3	4	5	6	7
Games console/X box/Playstation	1	2	3	4	5	6	7
Hair drier	1	2	3	4	5	6	7
Handheld devices (iPads etc)	1	2	3	4	5	6	7
Humidifier	1	2	3	4	5	6	7
Dehumidifier	1	2	3	4	5	6	7
Kettle	1	2	3	4	5	6	7
Microwave	1	2	3	4	5	6	7
Mobile phone	1	2	3	4	5	6	7
PC/laptop	1	2	3	4	5	6	7
Plug in electric heater (such as fan heater or bar heater)	1	2	3	4	5	6	7
Power shower	1	2	3	4	5	6	7
Shower (excluding power shower)	1	2	3	4	5	6	7
Standalone tumble dryer	1	2	3	4	5	6	7
Standalone washing machine	1	2	3	4	5	6	7
Toaster	1	2	3	4	5	6	7
TV with a screen less than 21 inches	1	2	3	4	5	6	7
TV with a screen more than 21 inches	1	2	3	4	5	6	7
Vacuum cleaner	1	2	3	4	5	6	7

FOR EACH APPLIANCE THAT RESPONDENT HAS AT 3.19 AND USES ONCE OR TWICE A WEEK OR MORE OFTEN (3.20 = 1 to 3)

3.22 *How easy or otherwise do you think it would be for your household to avoid using or charging <xxxx> between the hours of four in the afternoon and eight in the evening?*

READ OUT SCALE AND CODE ONE ONLY PER ROW

	Very easy	Fairly easy	Not very easy	Not at all easy	Don't know
Air conditioning unit	1	2	3	4	5
Bath	1	2	3	4	5
Coffee-maker	1	2	3	4	5
Combined washing machine and tumble dryer	1	2	3	4	5
Cooling fans	1	2	3	4	5
Dishwasher	1	2	3	4	5
DVD player/Personal Video Recorder (PVR) (i.e. Sky/ virgin box)	1	2	3	4	5
Electric blanket	1	2	3	4	5
Electric hob	1	2	3	4	5
Electric oven	1	2	3	4	5
Games console/X box/Playstation	1	2	3	4	5
Hair drier	1	2	3	4	5
Handheld devices (iPads etc)	1	2	3	4	5
Humidifier	1	2	3	4	5
Kettle	1	2	3	4	5
Microwave	1	2	3	4	5
Mobile phone	1	2	3	4	5
PC/laptop	1	2	3	4	5
Plug in electric heater (such as fan heater or bar heater)	1	2	3	4	5
Power shower	1	2	3	4	5
Shower (excluding power shower)	1	2	3	4	5
Standalone tumble dryer	1	2	3	4	5
Standalone washing machine	1	2	3	4	5
Toaster	1	2	3	4	5
TV with a screen less than 21 inches	1	2	3	4	5
TV with a screen more than 21 inches	1	2	3	4	5
Vacuum cleaner	1	2	3	4	5

4   Dishwashing

These questions now ask you about your washing up habits and about your patterns of using your dishwasher and how you clean your dishes.

ALL WITH DISHWASHER (3.19 = 5)

4.1   Do you wash up:
READ OUT AND CODE ONE ONLY
1. Always using the dishwasher
2. Mostly using the dishwasher, but some things in the sink
3. A fairly equal mix of dishwasher and sink
4. Mostly in the sink, but sometimes using the dishwasher
5. Always in the sink

5   Laundry

These questions ask about laundry – about your patterns of using your washing machine and how you wash clothes.

WHERE HAS WASHING MACHINE (3.19 = 2 or 4)

5.1   In a typical week, how many loads of washing are done in your household?
READ OUT AND CODE ONE ONLY
1. Less than one load a week
2. About 1 load
3. 2-3 loads
4. 4-5 loads
5. 6-10 loads
6. More than 10 loads
7. Don't know

6   Electric vehicles

ALL

6.1   Does your household have an electric vehicle? This does not include hybrid cars.
READ OUT AND CODE ONE ONLY
1. Yes
2. No
3. Don't know

WHERE HAS ELECTRIC VEHICLE (6.1 = 1)

6.2   When does your household tend to charge your electric vehicle?
READ OUT AND CODE ONE ONLY
1. Mostly overnight
2. Mostly during the day
3. Mostly in the evening from 4pm to 8pm
4. Mostly elsewhere (e.g. work)
5. Whenever it's needed
6. **DNRO:** Don't know

WHERE HAS ELECTRIC VEHICLE (6.1 = 1) AND CHARGES BETWEEN 4pm AND 8pm (6.2 = 3)

6.3 *How easy or otherwise do you think it would be for your household to avoid charging your electric vehicle between the hours of four in the afternoon and eight in the evening?*

READ OUT AND CODE ONE ONLY

1. Very easy
2. Fairly easy
3. Not very easy
4. Not at all easy
5. **DNRO:** Don't know

7   Attitudes/Behaviours

ALL

7.1 *Which of these best describes how you feel about your current lifestyle and the environment?*

READ OUT AND CODE ONE ONLY

1. I'm happy with what I do at the moment
2. I'd like to do a bit more to help the environment
3. I'd like to do a lot more to help the environment
4. **DNRO:** Don't know
5. **DNRO:** Refused

ALL

7.2 *How often would you say your household does each of the following?*

READ OUT AND CODE ONE PER ROW. SHOWCARD 11

	Always	Very often	Quite often	Not very often	Never	Not applicable
Leave a TV on standby for the night	1	2	3	4	5	6
Switch off lights in rooms that aren't being used	1	2	3	4	5	6
Decide not to buy something because it has too much packaging	1	2	3	4	5	6
Buy recycled paper products such as toilet paper or tissues	1	2	3	4	5	6
Use public transport (e.g. bus, train) rather than travel by car	1	2	3	4	5	6
Walk or cycle for short journeys less than 2 or 3 miles	1	2	3	4	5	6

ALL

7.3   *To what extent would you agree or disagree with the following statements about your household?*

READ OUT AND CODE ONE PER ROW

	Agree strongly	Agree	Disagree	Disagree strongly	Don't know
My household has already made changes in order to reduce the amount of electricity it uses	1	2	3	4	5
My household would be prepared to pay for more environmentally friendly products	1	2	3	4	5
My household does a lot of things that are environmentally friendly	1	2	3	4	5
It is not worth my household doing things to help the environment if others do not do the same	1	2	3	4	5

ALL

7.4   *If you were forced to choose a political party that most closely matched your views, which of the following would you pick?*

CODE ONE. SHOWCARD 12
1. Conservative
2. Green
3. Independent
4. Labour
5. Liberal Democrat
6. Plaid Cymru
7. Scottish Nationalist
8. UKIP
9. Other
10. None of the above
11. Refused

8   Respondent and household demographics

These are a few questions about you and your household. The answers to these questions help us to understand how answers to this questionnaire vary between different groups and types of people.

ALL

8.1   *How long have you/your household been living in this property?*

PROBE AND CODE ONE ONLY
1. Under 1 year
2. 1 to 2 years
3. 3 to 5 years
4. 6 to 10 years
5. 11 to 230 years
6. 20 or more years
7. Don't know
8. Refused

ALL

8.2   *What type of property do you live in?*
       READ OUT AND CODE ONE ONLY

   A whole house or bungalow that is:
   1. Detached
   2. Semi detached
   3. Terraced or end terraced

   A flat, maisonette or apartment that is:
   4. In a purpose-built block of flats or tenement
   5. Part of a converted or shared house (including bedsits)
   6. In a commercial building (for example in an office building, hotel, or over a shop)

   A mobile or temporary structure:
   7. A caravan or other mobile or temporary structure

IF TENANT (3.1 = 3 to 6)

8.3   *When does your tenancy agreement run out?*
       PROBE AND CODE ONE ONLY

   1. Do not have agreement
   2. Within the next year
   3. Within the next two years
   4. Within the next three years
   5. Longer
   6. Don't know

ALL

8.4   *Does your household have any plans to move?* **IF YES PROBE FOR LIKELY TIMING OF MOVE**
       CODE ONE ONLY

   1. No plans to move
   2. Within the next year
   3. Within the next two years
   4. Within the next three years
   5. Longer
   6. Don't know

ALL WITH PLANS TO MOVE WITHIN NEXT THREE YEARS (8.4 = 2 to 4)

8.5   *How likely is it that you will move within the Hampshire/Isle of Wight area?*
       CODE ONE ONLY

   1. Very likely
   2. Fairly likely
   3. Not very likely
   4. Don't know

ALL

8.6   *How many rooms are available for use by your household (do not count hallways, landings, cupboards …. You should count all your bedrooms, living and reception rooms, kitchens, bathrooms, studies and conservatories, and any other rooms in your home)?*
      WRITE IN NUMBER

ALL WHERE MORE THAN ONE ROOM AT 8.6

8.7   *How many of these are bedrooms that are available for use by your household?*
      WRITE IN NUMBER

ALL WHERE MORE THAN ONE ROOM AT 8.6

8.8   *And how many of these are bathrooms that are available for use by your household?*
      WRITE IN NUMBER

ALL

8.9   *In total, how many cars or vans does this household own or have access to? Please include any company car(s) or van(s).*
      CODE ONE

   1.   One
   2.   Two
   3.   Three
   4.   Four or more (**SPECIFY**)
   5.   Refused

ALL

8.10 *If we, or other project partners, wanted to send you information either to update you on the research, or to provide information about electricity usage and ways to reduce it, how would you prefer to receive this?*
      READ OUT AND CODE ALL THAT APPLY

   1.   Through the post
   2.   Via email
   3.   Via social media (Facebook, Twitter etc.)
   4.   Via telephone
   5.   In person
   6.   Other (**SPECIFY**)

IF MORE THAN ONE PERSON IN HOUSEHOLD, AND RESPONDENT IS NOT HRP (AS DEFINED IN SECTION 2):

The following questions are about the person in your household who is defined as the Household Reference Person. This is the member of the household in whose name the accommodation is owned or rented, or is otherwise responsible for the accommodation. <**IF NECESSARY**: The Household Reference Person (HRP) is defined as the person with highest work status (i.e. full time or part time). If inhabitants have equal working status, then age (the oldest) is used to define the HRP >.

Would this be yourself?

   1.   Yes
   2.   No

IF NO
Please can you tell me which of the people you mentioned at the beginning this would be.
[LIST 2a RESPONSES]
CODE ONE ONLY

IF HRP IS CURRENTLY ECONOMICALLY ACTIVE (2d = 4 to 8)
8.11 Have you/they ever been in paid work?

> 1. Yes
> 2. No

ASK ALL UNLESS 8.11 = 2: *Please answer the following questions about the last main job you/they did.*

ASK ALL UNLESS 8.11 = 2
8.12 What did the firm/organisation you/they worked for mainly make or do (at the place where you/they worked)?
> **WRITE IN VERBATIM. PROBE FOR 'MANUFACTURING', 'PROCESSING', 'DISTRIBUTING', ETC AND MAIN GOODS PRODUCED, MATERIALS USED, WHOLESALE OR RETAIL ETC.**

IF YES AT 8.11
8.13 What was your/their (main) job?
> ***WRITE IN VERBATIM. PROBE FOR DETAIL***

IF YES AT 8.11
8.14 What did you/they mainly do in your/their (main) job?
> ***WRITE IN VERBATIM. PROBE FOR DETAIL***
> **NOTE:** Check for any special qualifications, training, etc needed to do the job.

IF YES AT 8.11
8.15 Were you/they working as an employee or were you self-employed?

> 1   Employee
> 2   Self-employed

> **NOTE**: The distinction between employee and self-employed is based on the respondents' own assessment of their employment status in their main job.

IF EMPLOYEE AT 8.15
8.16 In your job, did you/they have any formal responsibility for supervising the work of other employees?
> 1. Yes
> 2. No

> **NOTE**: Do not include supervisors of children, e.g. teachers, nannies, childminders; supervisors of animals; or people who supervise security or buildings only, eg caretakers, security guards.

IF RESPONSIBLE AT 8.16
8.17 How many people worked for your/their employer at the place where you worked?
> 1. 1 to 24
> 2. 25 to 499
> 3. 500 or more

NOTE: Be clear that you are asking about the total number of employees at the respondent's workplace, not just the number employed within their particular section or department. You are also asking about the local unit of the establishment at which the respondent works, that is the geographical location where the job is mainly carried out. Normally, this will consist of a single building, part of a building or, at the largest, a self-contained group of buildings. You are not asking about the entire enterprise.

IF SELF-EMPLOYED AT 8.15

8.18   *Were you/ they working on your own or did you have employees?*
   1. On own/with partner(s) but no employees
   2. With employees

IF WITH EMPLOYEES AT 8.18

8.19   *How many people did you/they employ at the place where you worked?*
   1. 1 to 24
   2. 25 to 249
   3. 500 or more

ALL

8.20   *Which of the following would you say is the highest level of qualification that you hold?*
   READ OUT AND CODE ONE ONLY

   1. Higher degree (PhD, Masters degree etc) or equivalent
   2. Degree (Bachelors and equivalent) or equivalent
   3. ONC/OND
   4. HND
   5. HNC
   6. A-level grade A-E
   7. AS-level grade A-E
   8. Scottish Highers grade A-C
   9. GCSE/O-level/O-grades grade A*-C/ CSE grade 1
   10. Something else **(SPECIFY)**
   11. Have no qualifications
   12. Don't know
   13. Refused

IF MORE THAN ONE PERSON IN HOUSEHOLD, AND RESPONDENT IS NOT HRP (AS DEFINED IN SECTION 2)

8.21 *Which of the following would you say is the highest level of qualification the household reference person holds?*
    READ OUT AND CODE ONE ONLY

    1. Higher degree (PhD, Masters degree etc) or equivalent
    2. Degree (Bachelors and equivalent) or equivalent
    3. ONC/OND
    4. HND
    5. HNC
    6. A-level grade A-E
    7. AS-level grade A-E
    8. Scottish Highers grade A-C
    9. GCSE/O-level/O-grades grade A*-C/ CSE grade 1
    10. Something else **(SPECIFY)**
    11. Have no qualifications
    12. Don't know
    13. Refused

ALL

8.22 *To which one of the following groups on this card do you consider you belong?*
    READ OUT AND CODE ONE ONLY

    1. WHITE – English/Welsh/Scottish/Northern Irish/British
    2. WHITE – Irish
    3. WHITE – Gypsy or Irish Traveller
    4. WHITE – Any other white background
    5. MIXED – White and Black Caribbean
    6. MIXED – White and Asian
    7. MIXED – White and Black African
    8. MIXED – White and Asian
    9. MIXED – Any other Mixed/multiple ethnic background
    10. ASIAN OR ASIAN BRITISH – Indian
    11. ASIAN OR ASIAN BRITISH – Pakistani
    12. ASIAN OR ASIAN BRITISH – Bangladeshi
    13. ASIAN OR ASIAN BRITISH - Chinese
    14. ASIAN OR ASIAN BRITISH – Any other Asian background
    15. BLACK OR BLACK BRITISH – Caribbean
    16. BLACK OR BLACK BRITISH – African
    17. BLACK OR BLACK BRITISH – Any other Black background
    18. OTHER – Arab
    19. OTHER – Any other ethnic group
    20. Refused

IF MORE THAN ONE PERSON IN HOUSEHOLD, AND RESPONDENT IS NOT HRP (AS DEFINED IN SECTION 2)

8.23 *And is this the same as or different to the household reference person (**PROBE FOR RESPONSE**)*
READ OUT AND CODE ONE ONLY

1. *WHITE – English/Welsh/Scottish/Northern Irish/British*
2. WHITE – Irish
3. WHITE – Gypsy or Irish Traveller
4. WHITE – Any other white background
5. MIXED – White and Black Caribbean
6. MIXED – White and Asian
7. MIXED – White and Black African
8. MIXED – White and Asian
9. MIXED – Any other Mixed/multiple ethnic background
10. ASIAN OR ASIAN BRITISH – Indian
11. ASIAN OR ASIAN BRITISH – Pakistani
12. ASIAN OR ASIAN BRITISH – Bangladeshi
13. ASIAN OR ASIAN BRITISH - Chinese
14. ASIAN OR ASIAN BRITISH – Any other Asian background
15. BLACK OR BLACK BRITISH – Caribbean
16. BLACK OR BLACK BRITISH – African
17. BLACK OR BLACK BRITISH – Any other Black background
18. OTHER – Arab
19. OTHER – Any other ethnic group
20. Refused

ALL

8.24 *To which one of the following groups on this card do you consider you belong?*
READ OUT AND CODE ONE ONLY

1. No religion
2. Christian (including Church of England, Catholic, Protestant and all other Christian denominations)
3. Buddhist
4. Hindu
5. Jewish
6. Muslim
7. Sikh
8. Other religion WRITE IN
9. Refused

IF MORE THAN ONE PERSON IN HOUSEHOLD, AND RESPONDENT IS NOT HRP (AS DEFINED IN SECTION 2)

8.25   *And is this the same as or different to the household reference person (**PROBE FOR RESPONSE**)*
READ OUT AND CODE ONE ONLY

1.   No religion
2.   Christian (including Church of England, Catholic, Protestant and all other Christian denominations)
3.   Buddhist
4.   Hindu
5.   Jewish
6.   Muslim
7.   Sikh
8.   Other religion WRITE IN
9.   Refused

ALL

8.26   *Do you or anyone else in your home have any long term illness, health problem or disability which limits your daily activities or the work you can do?* **IF ELDERLY ADD**: *Include any problems due to old age.*
CODE ONE ONLY

1.   Yes
2.   No
3.   Refused

ALL

8.27   *Please would you tell me the total monthly or annual gross (underline before) tax income of this household?*
PROBE AND CODE NEAREST

	Monthly	Annually
1	Under £833	Under £10,000
2	£834 to £1,042	£10,000 to £12,500
3	£1,043 to £1,250	£12,501 to £15,000
4	£1, 251 to £1,458	£15,001 to £17,500
5	£1,459 to £1,667	£17,501 to £20,000
6	£1,668 to £1,875	£20,001 to £22,500
7	£1,876 to £2,083	£22,501 to £25,000
8	£2,084 to £2,292	£25,001 to £27,500
9	£2,293 to £2,500	£27,501 to £30,000
10	£2,501 to £2,917	£30,001 to £35,000
11	£2,918 to £3,333	£35,001 to £40,000
12	£3,334 to £4,167	£40,001 to £50,000
13	£4,168 to £5,000	£50,001 to £60,000
14	£5,001 to £6,667	£60,001 to £80,000
15	£6,668 to £8,333	£80,001 to £100,000
16	Over £8,333	Over £100,000
13	**NOT ON SHOWCARD**: Don't know	
14	**NOT ON SHOWCARD**: Prefer not to say	

ALL

READ OUT:

THANK YOU FOR YOUR TIME IN COMPLETING THE SURVEY, IF YOU HAVE ANY QUERIES ABOUT THE RESEARCH PLEASE CONTACT THE BMG RESEARCH HELPLINE ON 0800 358 0337. OUR OFFICE HOURS ARE 9A.M. TO 5P.M. MONDAY TO FRIDAY.

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