



Department
of Energy &
Climate Change

Green Deal Household Tracker survey

Technical report

25th June 2013

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Background to the research

In 2012, GfK NOP was commissioned by DECC to conduct tracking research to explore attitudes towards the Green Deal and energy efficiency measures more widely. The research programme consists of three 'strands', which are briefly described below:

- Strand One: the main tracking survey consisting of four waves of quantitative research to track key objectives (every six months)
- Strand Two: three separate short 'dips' to be deployed flexibly to test public opinion after any major events or planned communications activity. The 'dips' are a small number of questions (eleven) that can be added to the GfK location omnibus survey.
- Strand Three: three rounds of qualitative research

The first Strand One survey was conducted in November 2012 to provide a baseline measure of awareness and understanding of the Green Deal, with the remainder of the survey work due to be completed by mid-2014.

This technical report supports the published data and research reports from Strands One and Two of the Green Deal Household Tracker research programme.

Survey methodology and sampling

All interviewing is conducted face-to-face in-home with a representative sample of householders/ those responsible for making decisions about their home aged 18+ in Great Britain. Respondents must therefore answer yes to either of the following screener questions:

A1. And can I just check, are you the person in whose name this accommodation is owned or rented, or their partner?

A2. And are you wholly or jointly responsible for making decisions about your home and accommodation and/or able to request changes be made to your home by your landlord? IF NECESSARY: By that I mean decisions related to major purchases for your home, home improvements, moving house, and things like that.

The survey is administered using Computer Assisted Personal Interviewing (CAPI), which means that interviewers carry the survey on a laptop into which they enter the respondent's answers. Complex routing can be employed, with questions skipped or tailored depending on the respondent's previous answers.

Fieldwork for the main tracking survey waves and the separate short dips is conducted on GfK NOP's Random Location Omnibus (RLO)¹, which uses a random location quota sampling method (described in detail in the following section).

The main tracking survey waves also incorporate boost samples (extra interviews conducted separately from the RLO) of low income owner occupiers², and householders in six of eight Core Cities³ which were awarded funding for their proposals to lower their carbon emissions. Although interviewing is conducted separately from the RLO, the boost samples are conducted using random location quota sampling and at the same time as the RLO interviewing.

Because the RLO delivers a representative sample of householders/ those responsible for making decisions about their home aged 18+ in Great Britain, certain sub-groups are not represented in sufficient numbers (due to their incidence in the population) to allow for robust sub-group analysis. Adding the boost interviews to those conducted via the RLO ensures sufficient numbers of low income owner occupiers and respondents from each of the six selected Core Cities to allow for separate and in-depth analysis of these specific groups of interest.

Interviews from the boost samples are therefore combined with the RLO sample at the data processing stage to form a main sample and a Core Cities sample. This is discussed further in the Data Processing section.

The sample structure of the Strand One and Strand Two surveys are shown in the table below.

	Strand One: Main tracking survey	Strand Two: Dip surveys
Random Location Omnibus	Two weeks of interviewing on RLO survey – achieved sample size of c.3,200 interviews	One week of interviewing on RLO survey – achieved sample size of c.1,600 interviews
Boost samples	<ul style="list-style-type: none"> • Boost of 200 low income owner occupiers • Boost of 400 respondents in Core Cities 	N/A
TOTAL sample sizes	<ul style="list-style-type: none"> • Main sample = c.3,400 • Core Cities sample = c.650 	<ul style="list-style-type: none"> • Main sample = c.1,600

¹ GfK NOP's Random Location Omnibus (RLO) is a Census Output Area-based sample design across 175 sampling points in the UK, providing 2,000 interviews with adults aged 16+ per week.

² Owner occupiers with an annual household income of less than £16,000

³ See <https://www.gov.uk/local-authorities-and-the-green-deal>

Fieldwork dates and final sample sizes

Fieldwork dates and final sample sizes for the first two Strand One surveys (Waves 1 and 2) and the first two Strand Two dips (February 2013 and May 2013) are shown in the table below.

	Strand one		Strand two	
	Wave 1 (baseline)	Wave 2	February dip	May dip
Fieldwork dates	8-25 Nov 2012	7-22 Mar 2013	7-12 Feb 2013	9-14 May 2013
Sample size – main sample	3,562	3,409	1,613	1,648
Sample size – core city sample	731	647	N/A	N/A

Random Location Omnibus (RLO) sample design

GfK NOP's RLO uses random location sampling, a method which offers a hybrid between random probability and simple quota sampling: randomly selecting specified areas for interviewers to work in, but allowing a limited degree of flexibility within the specified area. Consequently it delivers scientifically based samples at a cost and speed closer to non-scientific, simple quota samples.

The RLO uses a 3-stage design to select 175 points, as detailed below.

Stage 1: Selecting Parliamentary constituencies

When all 650 Parliamentary constituencies in the UK have been stratified by Government Office Region (GOR) and urbanity, the electorate of each constituency is entered on the list and a cumulative total of electors by constituency (N) is formed. Since a sample of 175 constituencies is required, a random start point between 1 and N/175 is selected, and then from this start point a sampling interval of N/175 is repeatedly applied down a list until 175 constituencies have been identified.

Stage 2. Selecting Output areas (OAs) within the selected constituencies

Within each selected constituency, an OA is selected for each wave of the Omnibus. OAs are selected at random, but with some stratification control so that the sample of areas drawn is representative of the sample of constituencies and therefore of the United Kingdom in demographic terms. The variables used for stratification are age, sex, social class, and geodemographic profile (Mosaic classification). Once the areas have been selected, the profile of the areas is checked against the national profile to ensure that it is representative in terms of demographics.

An OA is a small area containing on average around 150 households. Each OA is homogenous, with the people living within it being fairly similar in social grade terms.

This procedure is repeated for each wave of the Omnibus, producing a different sample of areas for each week of fieldwork.

Stage 3. Selecting respondents within the output areas.

For each selected OA, a list of all residential addresses at which interviewers may conduct an interview is produced. This listing is taken from the Postal Address File, which is a listing of all addresses within the United Kingdom, and is updated monthly.

In addition to the address listing, interviewers are also given a quota sheet, which determines the sort of people they must interview. Each interviewer must interview 12 people within an OA, and the quotas are different for each area in order to reflect the demographic profile of that area. The variables that are controlled for are age and sex within working status. No quota is set for social grade, as the selection of areas ensures that the sample is balanced in this respect.

Boost samples

The main tracking survey (Strand One) incorporates two boost samples (conducted separately from the RLO survey) in order to guarantee minimum sample sizes for, and thus allow for individual analysis of, specific groups of interest.

BOOST SAMPLE 1: Two hundred boost interviews are conducted with **low income owner occupiers** (who are defined as having an annual household income under £16,000) across Great Britain to ensure that, in combination with the interviews conducted via the RLO, at least 400 interviews in total are achieved with this group. In order to improve fieldwork efficiency, interviewing points are selected from the 30% most deprived areas in Great Britain.

BOOST SAMPLE 2: A further four hundred boost interviews are also conducted to ensure that, in combination with the interviews conducted via the RLO, a total of at least 100 respondents are interviewed in each of the following six **Core Cities**⁴:

- Birmingham
- Bristol
- Greater Manchester
- Leeds (including Kirklees and Bradford)
- Newcastle (including South Tyneside and Durham)
- Sheffield

Both boost samples are conducted using random location quota sampling, with quotas set on age and sex within working status, as per the RLO survey. Fieldwork dates run alongside the RLO survey to ensure comparability of data.

⁴ Although there are eight core cities, only six were selected for separate analysis as part of the Household Tracker Survey. In order for statistically significant analysis to take place and comparisons be made, only six of the eight core cities were chosen for the analysis.

Questionnaire development

Main tracker survey questionnaire

The survey questionnaires were designed by DECC and GfK NOP and drew on a number of tried and tested questions from previous surveys, including previous DECC Green Deal surveys and the English Housing Survey (EHS). The questionnaire also included questions from the 2012 Green Deal segmentation research to enable the recreation of the Green Deal segments⁵.

Questions for the main tracking study were refined through piloting prior to conducting Wave 1. Twenty-four cognitive pilot interviews were conducted on the 17th October 2012 across five locations, with members of the GfK NOP and DECC research teams accompanying GfK NOP's face to face interviewers.

The interviewer administered the pilot survey initially, using Computer Assisted Personal Interviewing (CAPI), in order to provide indications of timings, evaluate the questionnaire flow and to allow researchers to observe any difficulties that interviewers or respondents encountered. Researchers then followed up the CAPI interview with a small number of cognitive questions to test new material which was developed for this research, as well as to follow-up any other questions where difficulties were observed during the interview.

Following the cognitive pilot interviews, GfK NOP provided DECC with feedback from the exercise and made recommendations for amendments to the questionnaire. Final questionnaire changes were agreed by DECC ahead of the main stage fieldwork.

Dip questionnaires

The questionnaires used for the dips are different, being shorter in length (consisting of 11 questions), and also including different questions at each dip to test public opinion after any major events or planned communications activity as well as a selection of questions from the main tracking survey. The Strand Two dip questionnaires do not include the questions required to derive the Green Deal segments.

The final survey questionnaires are included alongside the published data and research reports, which are available at <https://www.gov.uk/government/publications/green-deal-household-tracker-survey-waves-1-and-2-report>

Data processing

Datasets

Two datasets are produced for each wave of the main tracking survey (number of respondents shown in brackets):

⁵ Detailed information about the Green Deal segments can be found at <http://www.decc.gov.uk/assets/decc/11/tackling-climate-change/green-deal/7057-research-report-green-deal-segmentation.pdf>

The technical report relating to the development of the Green Deal segments can be found at https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/49751/Green_Deal_segmentation_-_technical_report.pdf

- Main sample : consisting of all interviews from the RLO sample plus all interviews from the low income owner occupier boost sample:
 - Wave 1: 3,562 interviews
 - Wave 2: 3,409 interviews
- Core Cities (minimum of 100 in each of the six selected Core Cities): consisting of all interviews with respondents in the six selected Core Cities from the RLO sample plus all interviews from the Core Cities boost sample:
 - Wave 1: 731 interviews
 - Wave 2: 647 interviews

Derived analysis variables are added to the main sample dataset to allow for sub-group analysis including by standard demographics (e.g. age, gender, ethnicity, social grade), housing type (e.g. age, type, wall construction, tenure), whether installed any energy saving measures, awareness of the Green Deal and Green Deal segments.

Coding

The final main tracking survey (Strand One) questionnaire contained one open-ended question and 10 questions including 'other' answers which required coding. In order to get the most out of these open responses codeframes were developed by executives working on the project with reference to the objectives of the question. GfK NOP's team of experienced in-house coders were fully briefed by project executives in advance of starting work and the briefing included the objectives of each individual question, and other relevant material.

Post survey weighting

The representativeness of the data is controlled through sample design, fieldwork quotas and post-fieldwork weighting. The main sample data are weighted for the following characteristics to be representative of adults aged 18+ in Great Britain: sex, age, social grade, region, number of adults in the household and working status (within sex). The Core Cities data are weighted by sex, age and working status (within sex) profiles within each city.

Reporting conventions

All survey reports use the following conventions:

- All differences commented upon are statistically significant at the 95% confidence level* (unless otherwise stated).
- Significant differences between waves are indicated by arrows (↑↓) within charts and tables
- All base sizes quoted in the report are unweighted
- All reported data are weighted.
- A finding of less than 0.5% but greater than zero is indicated by an asterisk (*).

* In the report, when changes in findings are described as significant it refers to statistical significance, meaning that we can be 95% sure that this change represents the overall population. Put in other words this means that if the survey was to be done another 100 times then we would expect to find the same change in at least 95 of those.

Essentially statistical significance gives confidence that changes in findings are down to actual changes rather than random sampling error associated with surveys.

Confidence intervals

Surveys are conducted because it is much more practical and cost effective than interviewing an entire population. However, we need to know how close our survey estimates are to the 'true' figures if we had interviewed the entire population. Confidence intervals are a statistical device which allow us, using our survey results, to estimate the variation that might be anticipated because a sample, rather than an entire population, was interviewed. In general, the larger the sample, the more sure we can be of the accuracy of our survey estimates. In other words, if we were to conduct the same survey again we would be more likely to get a similar result if we had a large sample than a smaller sample.

The table below indicates the confidence intervals associated with different sample sizes and survey estimates. Note that, strictly speaking, analysis of sampling error in this way should only be applied to random probability surveys. However it is generally accepted that it can be applied to random location sampling as a rough guide to the reliability of the data, rather than being interpreted literally.

When calculating confidence intervals, we typically use a 95% confidence interval. This allows us to be 95% sure that the confidence interval will reflect the true figure for the entire population.

The table shows that for a total sample size of 3,400 respondents (i.e. roughly in line with the sample size for the main tracker survey), the confidence interval for a 50% response would be up to $\pm 1.7\%$ (so if the survey found that 50% of respondents held a certain view, we could be 95% sure that the true proportion of people in that population who hold that view would be between 48.3% and 51.7%).

Proportion of respondents giving a particular response to a question			
Sample/sub-group size	10% or 90%	30% or 70%	50%
100	5.9	9.0	9.8
200	4.2	6.4	6.9
400	2.9	4.5	4.9
800	2.1	3.2	3.5
1,600	1.5	2.2	2.4

Proportion of respondents giving a particular response to a question			
Sample/sub-group size	10% or 90%	30% or 70%	50%
3,400	1.0	1.5	1.7

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