UK Government

Evaluation of the Boiler Upgrade Scheme

Technical Methodological Report – 2025 Interim Report

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Any enquiries regarding this publication should be sent to us at:
boilerupgradescheme@energysecurity.gov.uk

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Introduction

In March 2023, the Department for Energy Security and Net Zero ('the Department') commissioned an evaluation of the 2022-2025 Boiler Upgrade Scheme (BUS)[1]. The study is scheduled to finish in March 2026 and is being undertaken by an evaluation team of ICF working with Eunomia, University College London (UCL) and BMG Research.

Evaluation aim

The aim of this study is to evaluate the delivery, impacts, and value-for-money (VfM) of the BUS. The results will provide accountability and identify learning to improve the design and delivery of the Scheme and other carbon reduction initiatives. During the scoping phase of the study, the evaluation team agreed with the Department a total of 16 process, impact, and economic evaluation questions. These questions guide the evaluation, shaping the methodology and the research topics explored during primary research. The evaluation questions are summarised in Table 1. The 2024 Interim Report included preliminary answers to the process evaluation questions[2]. The 2025 Interim Report presents early answers to some of the impact evaluation questions (Table 1 indicates which questions). Note that, even if questions have not been specifically answered, the 2025 Interim Report includes relevant evidence and updates some of the evidence that was used to provide preliminary answers in the 2024 Interim Report. A comprehensive set of responses to the 16 evaluation questions will be included in the final evaluation report.

Table 1: Overview of the evaluation questions and their status to date

Evaluation question	Interim conclusions?
Process evaluation	
1. How effective has Ofgem's delivery of the Scheme been?	2024 Interim Report
2. What has been installers' experiences of the delivery of the BUS? Has participating in the Scheme imposed any undue burdens on them and, if so, what and to what extent?	2024 Interim Report
3. What has been property-owners' experiences of the delivery of the Scheme by Ofgem?	2024 Interim Report

[1] The extension of the BUS from 2025 to 2028 is not the focus of this evaluation.
[2] DESNZ (January 2025) Evaluation of the Boiler Upgrade Scheme: 2024 Interim Report

Evaluation question	Interim conclusions?
4. How easy or difficult did installers find it to participate in the BUS? What were the enablers and barriers to participation?	2024 Interim Report
5. How have property-owners heard of and learned about the BUS? What were their experiences of the marketing of the Scheme by installers and DESNZ?	2024 Interim Report
6. How easy or difficult did property-owners find it to participate in the BUS? What were the enablers and barriers to participation?	2024 Interim Report
7. What lessons can be learnt from the Scheme design and implementation to support future policy design?	2024 Interim Report
Outcome and impact evaluation	
8. Has the BUS achieved its objectives regarding the installation of LCH systems and the abatement of carbon, and why? To what extent are these outcomes additional?	No
9. How has the Scheme design incentivised or disincentivised the uptake of LCH systems, and how has this varied between different groups of property-owners? How has the Scheme interacted with other incentives?	No
10. Why have property-owners chosen to participate or not participate in the BUS, and how has this varied between different groups of property-owners? Why have property-owners exited the Scheme before having had a LCH system installed?	2025 Interim Report
11. Why have installers chosen to participate or not participate in the BUS, and how has this varied between different groups of installers?	2025 Interim Report
12. Has the BUS achieved its objectives to support employment within the LCH sector and expand the LCH market? What impacts has the BUS had on the LCH sector, including on investment, supply chains and costs?	No
13. How satisfied are property-owners with the installation and use of their LCH system, and would they recommend one?	2025 Interim Report
14. To what extent have property-owners changed their energy and heating use as a result of having a LCH system installed? Has BUS caused property-owners to make other energy-related changes?	2025 Interim Report
15. To what extent has the BUS met its requirements under the Public Sector Equality Duty (PSED)?	No

Evaluation question	Interim conclusions?
Value for money assessment	
16. Was the BUS good value for money (VfM)? How could the VfM of the BUS be improved?	No

Evaluation methodology

The evaluation is being delivered through a series of workstreams. These workstreams consist of a mixture of primary research and analysis of data and documentation. To date, the following workstreams have been completed:

- Primary research with property owners with a BUS-funded installation, consisting of three waves of a survey and interviews with property owners, a follow-up survey of property owners after they used their low carbon heating (LCH) system for a heating season, and case studies of property owners.
- Primary research with property owners who did not have a BUS-funded installation, consisting of 30 interviews with individuals who did not apply for a BUS grant and 5 interviews with individuals who applied for a BUS voucher but did not have an installation.
- Primary research with BUS registered LCH system installers, consisting of two waves of a survey and interviews with installer companies.
- Primary research with LCH system installers that were not registered with the BUS, consisting of 10 interviews.

Future evaluation workstreams will deliver new research, ensuring that each of the evaluation questions set out in Table 1 will be answered. Future workstreams will consist of:

- Further primary research with property owners that had a BUS-funded installation. This will consist of wave 4 of a survey of property owners that recently had an installation, repeating the questionnaire used in waves 1-3 (the methodology for which is described in this report).
- Quasi-Experimental Analysis (QEA) to estimate the additionality of the observed impacts of the BUS (system installations delivered, jobs supported within the LCH sector). This analysis will assess the extent to which impacts can be robustly attributed to the Scheme, rather than other factors shaping LCH deployment. Analysis will be completed in 2025, for inclusion in the final report.
- Statistical modelling to estimate the carbon abatement impacts of BUS installations. This analysis will take place in 2025.

- Analysis of the impacts of the BUS on the LCH market and supply chain, consisting of interviews with market representatives and analysis of secondary data. This analysis will take place in 2025.
- Analysis of the value-for-money of the BUS, consisting of a qualitative '3Es' assessment of the Scheme's economy, efficiency, and effectiveness. Equity will be added as a fourth assessment criterion. The 3Es approach is used by the National Audit Office (NAO) to assess the VfM of government spending. The VfM assessment will take place in 2025.

Reporting

This Technical Methodological Report accompanies a separate 2025 Interim Report which contains findings from the evaluation. This report contains a detailed description of the evaluation methodology, including the data collection and analysis that has been undertaken.

This report and the 2025 Interim Report follow on from a 2024 Interim Report, which was also accompanied by a Technical Methodological Report[3]. A Final Report will be published in 2026.

[3] DESNZ (January 2025) Evaluation of the Boiler Upgrade Scheme: 2024 Technical Methodological Interim Report

Primary Research with Property Owners

The primary research with property owners described in this report consisted of four activities:

- An online survey of property owners that had a LCH system installed under the BUS. Three waves of this survey have been completed, run at approximately six-monthly intervals. A fourth (final) wave is planned for early 2025. Aggregating across the three waves, 3,913 property owners responded to this survey.
- An online 'follow-up' survey of property owners that had a LCH system installed under the BUS. This survey was sent to everyone that responded to waves 1 and 2 of the property owner survey, except for the six individuals who were part of the case study research. A total of 1,642 property owners responded to the survey.
- Six case studies of property owners that had a BUS-funded LCH system installation. Case studies were selected from respondents to the wave 1 property owner survey (see first bullet) and involved in-depth interviews carried out at participants' properties.
- Interviews with 30 property owners that had not applied to the BUS and interviews with 5 property owners that applied to the BUS but did not have a BUS-funded installation.

Survey of property owners with a BUS-funded installation

Questionnaire design

The questionnaire was designed to take 15-20 minutes to complete for most respondents, though the median completion time across all three waves ended up being 13.1 minutes. Routing was used to minimise the number of questions that had to be answered and ensure respondents only answered questions which were applicable to them. In each of the three waves, the questionnaire consisted of three main sections:

- Property owners' experience of the customer journey from joining the BUS, arranging and having a LCH system installed, paying for the installation, and (potentially) complaining if they were not satisfied with their experiences.
- Property owners' overall satisfaction with their BUS experience and with their new LCH system.
- About property owners and their properties.

Questions were primarily closed-ended, with an open-ended wrap-up question at the end to give respondents an opportunity to expand upon and explain their answers.

The questionnaire was kept largely unchanged between survey waves to enable data to be aggregated and analysis of changes in responses between waves. Some minor changes were made due to changes in BUS design (e.g. the uplift of the grant value in October 2023), to accommodate new evidence needs, and where responses to the preceding survey wave

indicated that adjustments were needed (e.g. the addition of new response options based on open-text answers). The wave 3 questionnaire is included in an annex to this report (Section: Property Owner Survey Questionnaire).

Sample design

The population for the survey was all properties that had an installation funded through the BUS. The sampling frame was developed by applying the following sampling criteria:

- Inclusion of all properties where a LCH system was installed under the BUS in the reference period[4] (see Table 2 for a summary of the reference period for each wave).
- Exclusion of all installations that were under investigation for suspected compliance or fraud related reasons when the samples were finalised.

Individual property owners can receive multiple BUS grants, provided the properties they wish to upgrade are eligible for support. Since it was not considered desirable for an individual to be asked to complete a survey multiple times, property owners who were named as the contact for multiple BUS installations could only be sampled once. For waves 2 and 3 this meant excluding anyone who was included in a preceding survey sample. The property that they were asked to consider when completing the survey was randomly selected from across their multiple properties. At each wave a total of 4,000 properties were randomly sampled[5]. Stratification of the sample was considered, but not used[6].

Table 2: Overview of the sub-population, sampling frame and sample at each survey wave (number of property owners)

Survey wave	Reference period (installations between these dates)	Sub-population	Sampling frame	Sample
Wave 1	1 October 2022 to 30 April 2023	7,961	6,816	4,000
Wave 2	1 May 2023 to 31 October 2023	5,254	5,015	4,000
Wave 3	1 November 2023 to 30 April 2024	9,043	8,850	4,000

[4] The reference period for each survey wave consisted of all installations completed in the previous 6 months (the previous 7 months for the wave 1 survey), up until when the latest data were available. The date of a completed installation was taken as the date that the BUS voucher was paid to the installer company (RDT_paid_date). There is a time lag of approximately 2 months between the last BUS installations taking place in a reference period and data being made available to the evaluation team (e.g. for the wave 1 survey the last installation within the population took place at the end of April 2023 but these data were not available for sampling until July 2023).
[5] The target at each wave was 1,250 completed surveys, and a response rate of 31.25% was assumed.
[6] Two of the strata of potential interest – domestic or non-domestic properties, different types of LCH system installed – were not considered to be appropriate for sampling purposes. This was because the population sizes were too small and sub-group analysis was not assessed to be an evaluation priority. On-/off-gas grid properties were roughly evenly represented in the sampling frames, and so it was not deemed necessary to stratify samples on this basis either.

Survey delivery

The survey was administered online, using the Qualtrics survey platform. At the wave 1 survey 100 property owners were contacted by email for the purposes of a soft launch, which took place between 27 July and 2 August 2023. A total of 19 completed survey responses were received. Question completion and survey duration were reviewed, and various minor changes were made to the questionnaire (primarily adding new answer codes based on open text responses provided by respondents). The soft launch was not repeated at waves 2 or 3.

Surveying took place between the following dates:

- Wave 1: 7 August to 1 September 2023.
- Wave 2: 23 February to 20 March 2024.
- Wave 3: 29 July to 4 September 2024.

At each wave, property owners in the sample were sent an introductory email inviting them to participate, addressed to the individual who they had nominated as the lead for their involvement with the BUS. Two follow-up email reminders were sent, followed by a final postcard reminder. The postcard asked property owners to check their email inbox and complete the online survey, or to follow a link to an alternate version of the survey which they could access directly by scanning a QR code or by typing a URL into their web browser[7]. All property owners were told they could request a postal copy of the survey, though only a handful took up this option at each wave. As an incentive to increase participation, all sampled property owners were included in a prize draw, with the winner getting an online shopping voucher worth £200 (three prize draws were undertaken, one at each wave).

Table 3 provides a detailed breakdown of the survey delivery outcomes. At each wave the response rate was 33% and the target of 1,250 completed surveys was exceeded.

Table 3: Property owner survey response rates

	Wave 1: Number	Wave 1: % of sample	Wave 2: Number	Wave 2: % of sample	Wave 3: Number	Wave 3: % of sample
Number of property owners in sample	**4,000**	**-**	**4,000**	**-**	**4,000**	**-**
Invalid or undeliverable email	19	0.5%	22	0.6%	20	0.5%
Total usable sample	**3,981**	**-**	**3,978**	**-**	**3,980**	**-**

[7] Households were given a unique PIN which they had to type into the alternate survey, to ensure that they could be identified.

	Wave 1: Number	Wave 1: % of sample	Wave 2: Number	Wave 2: % of sample	Wave 3: Number	Wave 3: % of sample
Did not start or complete survey*	2,667	66.7%	2,676	66.9%	2,673	66.8%
Completed the survey anonymously^	4	0.1%	4	0.1%	2	0.1%
Completed (% of total sample)	**1,310**	**32.8%**	**1,298**	**32.5%**	**1,305**	**32.6%**
Completed (% of usable sample)	**1,310**	**32.9%**	**1,298**	**32.7%**	**1,305**	**32.8%**

Notes: * At wave 1 this excludes 2 individuals who did not submit their survey responses but completed enough questions that they were classified as completed surveys; ^ these individuals could not be matched back to the BUS database and so their survey responses were not used because it was not possible to add in critical data on the type of LCH system they had installed etc.

Data processing and weighting

The following data processing activities were undertaken:

- For some questions, respondents were asked to specify details whenever they gave ‘other’ as an answer (i.e. a response that was not already covered by the list of answer codes shown). Their answers were analysed and, where possible, back-coded to existing codes, to slightly amended codes, or to newly created codes. The exception were those answers that were unclear or too general or where answers were ‘unique’ because they were given by just one survey respondent; such responses were left as an ‘other’ code. Newly created codes were used for subsequent survey waves.
- Fully open-text responses to the final ‘wrap-up’ question were analysed qualitatively, using an analysis framework structured around key evaluation themes.
- Response data from all three survey waves were linked to data from the BUS database to create a consolidated dataset.

The characteristics of the achieved property owner samples at each wave were compared to the profile of the sub-populations from which they were drawn (i.e. BUS-funded installations during their respective reference periods), to assess their representativeness. The results are summarised in Table 4.

Table 4: Profile of the achieved samples of property owners and of the sub-populations from which they were drawn

Variable	Categories	Wave 1 % of achieved sample	Wave 1 % of sub-population #	Wave 2 % of achieved sample	Wave 2 % of sub-population #	Wave 3 % of achieved sample	Wave 3 % of sub-population #
Type of LCH installed	Air Source Heat Pump (ASHP)	96.3%	95.9%	95.9%	95.5%	97.5%	96.7%
	Ground Source Heat Pump (GSHP)	2.1%	2.8%	3.2%	3.6%	2.0%	2.7%
	Shared ground loop GSHP	0.0%	0.1%	0.1%	0.0%	0.0%	0.1%
	Biomass boiler	1.6%	1.2%	0.8%	0.9%	0.5%	0.5%
Gas grid status	On-grid	59.9%	52.0%	61.2%	52.7%	69.6%	57.3%
	Off-grid	39.6%	48.0%	38.8%	47.3%	30.4%	42.7%
	Unknown	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%
Property type	Domestic	99.8%	99.5%	99.8%	99.5%	99.7%	99.4%
	Non-domestic	0.2%	0.5%	0.2%	0.5%	0.3%	0.6%
Fuel type replaced	Gas	54.9%	45.2%	55.7%	45.9%	64.2%	49.5%
	Oil	23.3%	21.3%	19.6%	18.5%	18.1%	17.9%
	LPG	2.8%	3.4%	2.8%	2.9%	2.2%	2.8%

Variable	Categories	Wave 1 % of achieved sample	Wave 1 % of sub-population #	Wave 2 % of achieved sample	Wave 2 % of sub-population #	Wave 3 % of achieved sample	Wave 3 % of sub-population #
	Direct Electric	7.1%	9.5%	7.0%	9.6%	6.7%	10.7%
	Coal	0.0%	1.4%	0.0%	1.2%	0.0%	1.2%
	Other	2.2%	0.8%	2.4%	1.0%	1.5%	0.8%
	None	9.3%	18.2%	12.6%	21.0%	7.3%	17.2%
	Unknown	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%

Note: # Reference periods for the sub-populations are as follows: Wave 1 – 1 October 2022 to 30 April 2022; Wave 2 – 1 May 2023 to 31 October 2023; Wave 3 – 1 November 2023 to 30 April 2024.

Whilst the achieved samples from the property owner survey were broadly representative of the sub-populations from which they were drawn (i.e. BUS-funded installations during their respective reference periods), data were weighted using the two variables where the samples differed most from the populations:

- Whether property owners' property was on or off the gas grid; and
- The fuel type of the heating system that the LCH system replaced.

Weights were calculated for each survey wave, according to the characteristics of BUS-funded installations during the reference periods from which they were sampled[8]. Table 5 summarises the ranges of the weights that were applied at each wave. There were a few instances where data were not available about the grid status or prior fuel type of properties where LCH systems were installed (indicated as 'no data' in the table).

Table 5: Summary of the weights applied (waves 1-3 property owner survey)

Fuel type replaced	Grid status		
Fuel type replaced	**Off grid**	**On grid**	**No data**
Gas	n/a	0.771-0.841	n/a
Oil	0.959-0.990	0.817-1.078	1.939
LPG	1.075-1.238	0.741-1.410	n/a
Direct electric	1.203-1.826	1.128-1.477	n/a
Other	0.418-0.996	0.969-1.234	n/a
No previous fuel	1.672-2.232	1.532-3.637	1.146
No data	1.690	1.205	0.755

Notes: n/a is used where there were no cases to weight.

Survey data analysis and reporting

Survey data analysis consisted of descriptive statistics. A mix of univariate and bivariate analysis was carried out, using cross-tabulations to investigate the relationship between variables (e.g. whether question responses varied depending on the characteristics of property owners). Various cross-tabulations were carried out, and the most important have been

[8] The evaluation team also considered whether to weight the combined property owner survey dataset according to the relative size of the sub-populations from which each of the waves was sampled (e.g. as Table 2 shows, there were far more installations during the period from which the waves 1 and 3 surveys were sampled compared to the wave 2 survey). However, analysis showed that the sub-populations from which waves 1-3 were sampled were sufficiently similar that the costs of adding another weighting variable (i.e. reduced accuracy due to increased sampling variance etc.) outweighed the benefits.

included within data tables that have been published in support of this Technical Methodological Report. Differences between sub-groups were tested for statistical significance[9], and only those differences that were statistically significant were presented in the report. The results of the analysis of the property owner survey are presented in the 2025 Interim Report of evaluation results, which is published separately[10].

Follow-up survey of property owners with a BUS-funded installation

Questionnaire design

The questionnaire was designed to take 15-20 minutes to complete for most respondents, though the median completion time ended up being 10.6 minutes. Routing was used to minimise the number of questions that had to be answered and ensure respondents only answered questions which were applicable to them. The questionnaire consisted of four main sections:

- Property owners' experience of the customer journey after completion of their BUS-funded installation, including any faults experienced, complaints made, experiences of having their new system serviced, and whether they had tried to disconnect from the gas grid.
- Property owners' experiences of using their new LCH system, including their satisfaction with space and water heating, whether they used supplementary heating, and their confidence using their system.
- Energy bills and tariffs, including how energy bills had changed since their LCH system was installed, and what energy tariff they were on (and whether and why they had changed their tariff since having their LCH system installed).
- Property owners' perceptions of their LCH system, including satisfaction with its noisiness, whether they would recommend one to friends, and whether they had shown their system to anyone (and if so, what their reaction was).

Questions were primarily closed-ended, with two open-ended questions at the end where respondents were asked to expand upon the reactions of people that they had shown their LCH system to, and to discuss anything they had wished they had known before having their new system installed. The questionnaire is included in an annex to this report (Section: Follow-Up Property Owner Survey Questionnaire).

[9] Significance testing was carried out using a Chi-squared test, using a 95% confidence level, since most of the survey responses were categorical data.
[10] Evaluation of the Boiler Upgrade Scheme: 2025 Interim Report

Sample design

The population for the survey consisted of property owners with a BUS-funded installation that was completed between October 2022 and October 2023[11]. The sub-population from which the sampling frame was developed consisted of individuals that had already completed either wave 1 or wave 2 of the survey of property owners with a BUS installation (see Section: Survey of property owners with a BUS-funded installation). The follow-up survey was almost a census of this sub-population, since almost all property owners that completed the wave 1 or 2 survey were included (2,602 individuals in total[12]).

Survey delivery

The survey was administered online, using the Qualtrics survey platform. A total of 200 property owners were contacted by email for the purposes of a soft launch, which took place between 8 and 15 July 2024. A total of 80 completed survey responses were received. Question completion and survey duration were reviewed, and various minor changes were made to the questionnaire (primarily adding new answer codes based on open text responses provided by respondents). The mainstage survey ran from to 17 July to 11 August 2024.

Property owners were sent an introductory email inviting them to participate, addressed to the individual who they had nominated as the lead for their involvement with the BUS. Two follow-up email reminders were sent, followed by a final postcard reminder. The postcard asked property owners to check their email inbox and complete the online survey, or to follow a link to an alternate version of the survey which they could access directly by scanning a QR code or by typing a URL into their web browser[13]. All property owners were told they could request a postal copy of the survey, though none took up this option. As an incentive to increase participation, all sampled property owners were included in a prize draw, with the winner getting an online shopping voucher worth £200.

Table 6 provides a detailed breakdown of the survey delivery outcomes. A total of 1,642 responses were received (a response rate of 63%).

Table 6: Follow-up property owner survey response rate

	Number	% of sample
Number of property owners in sample	**2,602**	**-**
Invalid or undeliverable email	12	0.5%
Total usable sample	**2,590**	**-**

[11] Based on the date that the BUS voucher was paid to the installer (the variable RDT_paid_date in the BUS administrative database).
[12] Excluded were 6 individuals who had participated in in-depth case studies, since these case studies explored similar topics to the follow-up survey (see Section: Case studies of property owners with a BUS-funded installation).
[13] Households were given a unique PIN which they had to type into the alternate survey, to ensure that they could be identified.

	Number	% of sample
Did not start or complete survey	957	36.8%
Screened out^	3	0.1%
Completed (% of total sample)	**1,642**	**63.1%**
Completed (% of usable sample)	**1,642**	**63.4%**

Notes: ^ these individuals no longer lived in their property with the LCH-funded installation and so were screened out of the survey as they could not answer questions about using it[14]

Data processing and weighting

The following data processing activities were undertaken:

- For some questions, respondents were asked to specify details whenever they gave 'other' as an answer (i.e. a response that was not already covered by the list of answer codes shown). Their answers were analysed and, where possible, back-coded to existing codes, to slightly amended codes, or to newly created codes. The exception were those answers that were unclear or too general or where answers were 'unique' because they were given by just one survey respondent; such responses were left as an 'other' code.
- Responses to the two open-text questions were analysed qualitatively, using an analysis framework structured around key evaluation themes (perceptions of LCH systems, reactions of people when shown LCH systems).
- Response data from the follow-up survey were linked to data from waves 1 and 2 of the property owner survey and to the BUS database to create a consolidated dataset.

The characteristics of the achieved sample of property owners was compared to the population of BUS-funded installations that took place between 1 October 2022 and 31 October 2023 (the reference period for waves 1 and 2 of the property owner survey). The results are summarised in Table 7.

[14] Note that this is an underestimate of the extent to which BUS participants move out of their properties, since these are just the individuals who took the time to access the survey. The three people who were screened out were asked whether they had or planned to have a LCH system installed in their new property – one said they already did, and the other two said they probably would (QR02a. Will you have a/an LCH system, or another type of low carbon heating system, installed at the property you currently live in?)

Table 7: Profile of the achieved follow-up sample of property owners and of the population from which it was drawn

Variable	Categories	% of achieved sample	% of population #
Type of LCH installed	Air Source Heat Pump (ASHP)	96.4%	95.7%
	Ground Source Heat Pump (GSHP)	2.7%	3.1%
	Shared ground loop GSHP	0.1%	0.1%
	Biomass boiler	0.9%	1.1%
Gas grid status	On-grid	63.3%	52.3%
	Off-grid	36.7%	47.7%
Property type	Domestic	99.8%	99.5%
	Non-domestic	0.2%	0.5%
Fuel type replaced	Gas	58.6%	45.5%
	Oil	21.0%	20.2%
	LPG	2.7%	3.2%
	Direct Electric	6.4%	9.5%
	Other	2.0%	2.2%
	None	9.1%	19.3%
	Unknown	0.2%	0.1%

Note: # The reference period for the population was all BUS-funded installations between 1 October 2022 to 31 October 2023

As with the property owner survey (Section: Data processing and weighting), it was decided to weight the data using the two variables where the sample differed most from the population (where the population was all BUS funded installations in the reference period)[15]:

[15] The evaluation team also considered whether to weight the follow-up property owner dataset according to the relative size of the wave 1 and 2 sub-populations from which follow-up property owners were sampled (e.g. there were far more installations during the period from which the wave 1 property owner survey was sampled compared to the wave 2 survey). However, since the wave 1 and 2 sub-populations were sufficiently similar, it

- Whether property owners' property was on or off the gas grid; and
- The fuel type of the heating system that the LCH system replaced.

Table 8 summarises the weights that were applied. There were a few instances where data were not available about the prior fuel type of properties where LCH systems were installed (indicated as 'no data' in the table).

Table 8: Summary of the weights applied (follow-up survey)

Fuel type replaced	Off grid	On grid
Gas	n/a	0.776
Oil	0.967	0.882
LPG	1.226	0.809
Direct electric	1.356	2.701
Other	1.073	1.525
No previous fuel	2.154	2.009
No data	0.498	0.311

Notes: n/a is used where there were no cases to weight.

Survey data analysis and reporting

Survey data analysis consisted of descriptive statistics. A mix of univariate and bivariate analysis was carried out, using cross-tabulations to investigate the relationship between variables (e.g. whether question responses varied depending on the characteristics of property owners). Various cross-tabulations were carried out, and the most important have been included within data tables that have been published in support of this Technical Methodological Report[16]. Differences between sub-groups were tested for statistical significance[17], and only those differences that were statistically significant were presented in the report. The results of the analysis of the follow-up property owner survey are presented in the 2025 Interim Report of evaluation results, which is published separately[18].

was decided that the costs of adding another weighting variable (i.e. reduced accuracy due to increased sampling variance etc.) outweighed the benefits.

[16] Evaluation of the Boiler Upgrade Scheme: 2025 Interim Report

[17] Significance testing was carried out using a Chi-squared test, using a 95% confidence level, since most of the survey responses were categorical data.

[18] Evaluation of the Boiler Upgrade Scheme: 2025 Interim Report

Case studies of property owners with a BUS-funded installation

Case study selection

Case study property owners were selected from a sampling frame consisting of respondents to wave 1 of the survey of property owners (see Section: Survey of property owners with a BUS-funded installation). To recap, that survey was involved property owners that had a LCH system installed between October 2022 and April 2023 (i.e. prior to the uplift in the grant value, and before the removal of the requirement to have loft and/or cavity wall insulation installed). The sampling frame for the case studies was developed by applying the following sampling criteria:

- Only property owners that had an ASHP installed under the BUS were included in the sampling frame, as per the DESNZ specification (ASHPs are by far the most common type of LCH system installed under the BUS).
- Property owners whose LCH system was installed before 1 December 2022 were excluded, because it was assumed that individuals with an installation before that date might struggle to recall some of their experiences.
- Anyone who had previously participated in qualitative interviews with property owners with a BUS installation (see the 2024 Interim Report for details[19]) was also excluded, so as not to overburden them.
- Property owners who had indicated in their response to the property owner survey that they did not reside in their property (e.g. because they rented it out) were also excluded, because it was assumed that they would not be able to discuss the lived experience of using a LCH system.

The resulting case study sampling frame consisted of 677 property owners. Purposive sampling was used, and the only sampling criterion was that there should be five case studies of property owners with a broadly positive experience of the BUS, and one case study of a property owner with a broadly negative experience of the BUS. These proportions approximated the overall distribution of property owners' experiences of the BUS, based on responses to the property owner survey. Satisfaction with their experience was based on a composite of property owners' survey answers when asked about: i) their level of satisfaction with their overall experience of the BUS, and ii) their level of satisfaction with their ASHP. No other sampling criteria were formally used, though informally the team sought to achieve a rough balance between urban or rural properties, properties that had previously had a gas fuelled heating system or another type of system, and properties that were self-build or retrofit projects. Fieldwork was undertaken by researchers based in three ICF offices: London, Manchester, and Plymouth. The team thus prioritised the selection of properties that were within or easily reachable from these locations. Case study properties were selected in batches so as not to recruit more participants than was needed, whilst monitoring delivery against formal and informal targets (see below for a profile of the six case studies).

[19] DESNZ (January 2025) Evaluation of the Boiler Upgrade Scheme: 2024 Interim Report

Topic guide design

Case study evidence primarily came from interviews that were carried out with householders. A semi-structured topic guide for these interviews was developed, with a duration of around 60 minutes. Questions covered participants' experiences of the BUS and their experiences of using their ASHP; questions were tailored depending on participants' answers to the property owner survey. A copy of the case study interview topic guide is included in an annex to this report (Section: Case Study Property Owner Topic Guide).

Case study delivery

Case study interviews were carried out in-person at the property where LCH systems were installed. This enabled the research team to see the ASHPs and other equipment installed and to gather contextual information – e.g. the layout of property interiors, the location of installed equipment, the temperature of properties – that would not have been possible if interviews had been carried out remotely. Case study visits took place in January and February 2024. Property owners were sent an introductory email inviting them to participate, addressed to the individual who they had nominated as the lead for their involvement with the BUS (in some of the interviews other household members also participated in the interviews). Reminder emails were sent to increase participation. Case study property owners were given a £50 online shopping voucher as an incentive to participate. Visits lasted for 60-90 minutes, to allow for time to carry out the interview and examine/photograph the heat pump and any other equipment that property owners had installed (e.g. a water tank). Table 9 summarises the profile of the planned and achieved profile of case studies.

Table 9: Profile of the case studies (planned and achieved)

Category	Characteristic	Planned (out of 6)	Achieved (out of 6)
Composite measure of satisfaction with the BUS	Broadly satisfied with their experience of the BUS	5	5
	Broadly dissatisfied with their experience of the BUS	1	1
Rural / urban location	Urban	n/a	4
	Rural	n/a	2
Previous heating system	Gas boiler	n/a	5
	Oil boiler	n/a	1
Wider changes to property	Self-build/extensive renovation	n/a	4
	No wider changes	n/a	2

Category	Characteristic	Planned (out of 6)	Achieved (out of 6)
All		**6**	**6**

Notes: n/a signals that there were no quotas set, though an informal balance was sought

Survey data analysis and reporting

Interview data was synthesised with property owners' survey responses and the results were written up as standalone case studies of each LCH system installation. Analysis was structured around the themes explored in the interviews, focussing on property owners' experiences of the BUS and their experiences of using an ASHP. All case study write-ups were pseudo-anonymised, using pseudonyms for property-owners' names and locations. Drafts of the case study write-ups were sent to participants for a factual review before they were finalised. The results of the case studies have been synthesised and integrated into the 2025 Interim Report.

Interviews with non-participating property owners

Topic guide design

Property owners that had not applied to the BUS

The topic guide was designed to take between 15-20 minutes for most interviewees, and consisted of the two main sections:

- Property owners' understanding of LCH systems, including whether they had ever considered having one installed.
- Property owners' awareness and experiences of the BUS, including whether they had ever considered applying for a BUS grant and if not, why not.

Questions were accompanied by probes to follow-up on lines of enquiry, responding to interviewees' answers.

Property owners that had applied for a BUS voucher

The property owner topic guide was designed to take between 10-15 minutes for most interviewees. The topic guide consisted of the following sections:

- Property owners' motivations for applying for a voucher under the BUS and their reasons for not having had a LCH system installed previously.
- Property owners' experiences of the BUS customer journey, including system design and experience through to voucher application. For those that had an installation, the topic guide also explored their experiences of this process, and their impressions of their new system.

- Why property owners had not had an installation under the BUS and what – if anything – they planned to do next.

Questions were accompanied by probes to follow-up on lines of enquiry, responding to interviewees' answers.

Sample design

Property owners that had not applied to the BUS

The sampling frame consisted of respondents from a previous survey that was carried out in May and June 2023 as part of separate research study into heat pumps, led by ICF. These individuals were assessed to provide a good sample for research into why property owners had not applied to the BUS because they could potentially have been eligible for a BUS grant and were at least aware of ASHPs. Therefore, they had made a choice not to have a heat pump installed through the BUS – rather than simply being unaware that this option existed – and would be able to answer questions about their thought processes. Participants in the previous survey were asked if they consented to participate in BUS-related research, and a total of 3,634 homeowners confirmed that they were willing. To create the sampling frame for property owners that had not applied to the BUS, the following individuals were removed:

- Individuals who did not provide the required contact information (name, email address and telephone number).
- Individuals who lived in Scotland (out of scope of the BUS).
- Individuals who had gone on to submit a BUS application since that survey was completed (8 property owners).

This left a total of 2,870 individuals in the sampling frame. Purposive sampling was used to create a sample for the non-participant interviews. Six sampling criteria with quotas were applied to ensure that the sample consisted of individuals from a range of backgrounds and with a range of viewpoints. Sampling criteria and the target number of interviews are shown below in Table 10.

Property owners who had applied for a BUS voucher (but not had a BUS installation)

The interviews were sampled in two phases: firstly in September 2023 and secondly in May 2024. This was because it was initially planned to complete all interviews in September 2023 but there were significant difficulties with recruitment, and after a research hiatus, interviewing resumed in May 2024. Interviewees were purposively sampled from a subset of the database of BUS applications[20], limited to individuals who had either: i) applied for but not been issued with a voucher; or ii) been issued with a voucher that expired (in both cases excluding anyone who subsequently successfully reapplied). Sampling criteria and the target number of interviews are shown below in Table 11.

[20] The September 2023 interviews were sampled from applications that were made between May 2022 and April 2023, and the May 2024 interviews were sampled from applications that were made between March 2023 and October 2023.

Interview delivery

Property owners that had not applied to the BUS

Interviewees were given a £20 online shopping voucher as an incentive to participate. Interviews took place in March and April 2024 and took between 15-20 minutes to complete, using a semi-structured topic guide. All interviews were carried out by telephone/MS Teams and, subject to interviewees' consent, recorded and transcribed for analysis. Of the 30 interviews, 13 took place before the changes to loft and cavity wall insulation requirements under the BUS that were announced on 14 March 2024.

Table 10 summarises the profile of the planned and achieved sample of interviews. Thirty interviews were completed, as planned. It proved slightly challenging to recruit individuals from the highest income band, where three interviews were completed rather than the planned five. Other than this, the profile of the achieved sample of interviews was approximately as intended, ensuring that the evidence base included perspectives from individuals from a range of backgrounds.

Table 10: Profile of the non-participant property owner sample (planned and achieved)

Sampling criteria	Variable	Target interviews (out of 30)	Achieved interviews (out of 30)
Knowledge of heat pumps	Aware but don't really know what they are	>=7	11
	Know a little about them	>=7	8
	Know a lot about them	>=7	11
Likelihood they would install a heat pump in the next few years	Extremely / somewhat unlikely	>=7	11
	Neither likely nor unlikely	>=7	8
	Extremely / somewhat likely	>=7	11
Primary heating system	Gas boiler	>=10	17
	Oil boiler	>=10	13
Total household income in 2022	£19,999 or less	>=10	12
	£20,000 to £49,999	>=10	15
	£50,000 or more	>=5	3
Concern about climate change	Not at all concerned / slightly concerned	>=10	14
	Moderately concerned / very concerned	>=10	16

Sampling criteria	Variable	Target interviews (out of 30)	Achieved interviews (out of 30)
Whether their property had insulation	No loft insulation	>=5	7
	Loft insulation	-	23
	No cavity wall insulation	>=5	16
	Cavity wall insulation	-	14
All		**30**	**30**

Property owners who had applied for a BUS voucher (but not had a BUS installation)

Interviewees were initially offered a £20 online shopping voucher as an incentive to participate, which was increased to £30 to try to increase uptake (this change did not have a notable effect on recruitment). Interviews took between 10-15 minutes to complete, using a semi-structured topic guide. All interviews were carried out by telephone/MS Teams and, subject to interviewees' consent, recorded and transcribed for analysis.

As noted above, these interviews took place in two phases. Three of the five interviews were carried out in September 2023 (the results have already been included in the 2024 Interim Report). In May 2024 a further two interviews were carried out, and the consolidated results of these five interviews have been included in the 2025 Interim Report. Table 11 summarises the profile of the planned and achieved sample of interviews. The target was ten interviews but difficulties with recruitment meant that only five interviews could be completed across the two research phases. It is likely that recruitment problems were experienced because these individuals had not benefited from the BUS. In a few cases, sampled individuals who were contacted responded to say that they had actually had a BUS installation[21].

Table 11: Profile of property owner interviews (property owners who had applied for a BUS voucher but not had a BUS-funded installation)

Sampling criteria	Variable	Target interviews	Achieved interviews
BUS application status	Applied but not issued	4	1
	Issued but expired	6	4
Property use type	Domestic	>=5	5

[21] This is because there is a lag in the availability of BUS data.

Sampling criteria	Variable	Target interviews	Achieved interviews
	Non-domestic	>=2	0
Urban or rural property location	Rural	>=4	2
	Urban	>=4	3
LCH system named on application	Air source heat pump	>=2	4
	Ground source heat pump	>=2	0
	Biomass boiler	>=2	1
Fuel type that would have been replaced by LCH system	Gas	>=1	3
	Oil	>=1	2
	Direct electric	>=1	0
	None (i.e. self-build)	>=1	0
	Other (LPG, coal, other types)	>=1	0
All		**10**	**5**

Interview data analysis and reporting

Transcripts from the property owner interviews were created and coded into analytical frameworks designed around the main evaluation questions, with space for identification of unexpected evidence or themes. Coding and analysis were subject to quality assurance and consistency checks. Between-case (thematic) and within-case analysis was carried out. Analytical themes were identified based on evaluation needs (primarily the evidence needed to answer the evaluation questions) and from the interview data itself, in case any unexpected topics or lines of enquiry emerged. The results of the analysis of the property owner interviews are presented in the 2025 Interim Report of evaluation results, which is published separately[22].

The strengths and limitations of the property owner research

The strengths of the research

Research with property owners encompassed quantitative data from the surveys and in-depth qualitative research. It provides a rich and varied evidence base about the experiences of

[22] Evaluation of the Boiler Upgrade Scheme: 2025 Interim Report

property owners that have had a BUS-funded installation, and property owners that have not participated.

Survey data provides evidence from a randomly selected and representative sample of 3,913 property owners that had a BUS installation. This sample is large enough to enable analysis of various sub-groups of interest, to explore if and how different property owners' experiences of the BUS varied. Data have also been collected from property owners at three points in time (i.e. waves 1-3), enabling analysis of if and how different types of property owner have accessed the BUS at different times, and whether their experiences have changed as the Scheme has evolved (including whether the changes to the BUS – such as the uplift in the grant value – have affected participants' experiences). Data from the follow-up property owner survey also provides evidence from a large sample of 1,642 individuals which was weighted to be representative of the population (i.e. BUS-funded installations). These data are partially longitudinal, since some questions were repeated between the property owner survey (waves 1-3) and the follow-up survey, enabling analysis of change over time (e.g. if and how satisfaction with LCH systems has changed). Respondents to the follow-up survey had lived with their LCH system for at least one heating season, so were able to provide first-hand information about their experiences of using their system.

The case studies provide a rich source of evidence about property owners' experiences of the BUS and of using an ASHP. Interviews were relatively long, allowing in-depth discussion of property owners' experiences and opinions, including the reasoning behind their answers. Since interviews were undertaken within participants' homes, this allowed researchers to see the ASHPs and other equipment installed and to gather contextual information – e.g. the layout of property interiors, the location of installed equipment, the temperature of properties – that would not have been possible if interviews had been carried out remotely. Interviews took place in January and February when interviewees were still using their ASHPs to heat their properties, so their answers to questions about the ease of using their new heating system and their satisfaction with the temperature of their home and hot water were contemporaneous.

One of the acknowledged limitations of the research presented in the 2024 Interim Report was that it lacked evidence from property owners who had chosen not to participate in the BUS. This gap was addressed through qualitative research with non-participants. Thirty-five property owners were interviewed, which proved to be a sufficiently sized sample to provide confidence that research captured a wide range of viewpoints. Purposive sampling of ensured that individuals from a diverse set of backgrounds were involved. Several non-participant property owners had experience of trying to have a LCH system installed, including through the BUS, and an interview was the most appropriate way to unpick and understand what had happened. The results of non-participant interviews were compared to the results of research with BUS participants, providing an opportunity to identify areas of divergence.

The limitations of the research

The follow-up property owner survey and the case studies both involved research into property owners' lived experience of a LCH system. This included questions on how energy bills had changed since LCH systems were installed. The research design was reliant on self-reported

information about change in energy bills, however, and the research team did not collect exact energy bill data from before and after property owners had their LCH system installed or validate case study or survey question responses. The picture is complicated by the fact that property owners often also made other changes that would affect their energy bills, including installing solar PV and a battery and/or purchasing an electric vehicle.

Primary Research with Installers

The primary research with property owners described in this report consisted of two activities:

- An online survey of installer companies that had registered to deliver installations under the BUS (regardless of whether they had actually done so). Two waves of this survey have been completed, run approximately one year apart. Aggregating across the two waves, 516 installer companies responded to this survey.
- Interviews with 10 installer companies that have not registered with the BUS.

Survey of BUS registered installers

Questionnaire design

The questionnaire was designed to take 10-15 minutes to complete for most respondents, though the average completion time across the two waves ended up being around 13 minutes. Routing was used to minimise the number of questions that had to be answered. The questionnaire consisted of the following main sections:

- Installers' experiences of the BUS, including joining the scheme, using Ofgem's systems, and the time spent on administrative tasks under the scheme.
- Installers' views on the factors affecting demand for BUS installations and their ability to deliver installations, and the impacts of BUS participation on their market offers.
- About the business, including employment before and after their registration with the BUS.

Questions were primarily closed-ended, with an open-ended wrap-up question at the end of the questionnaire to provide respondents with an opportunity to expand upon and explain their answers.

The questionnaire was kept largely unchanged between the two survey waves to enable data to be aggregated and analysis of changes in responses between waves. Some minor changes were made to the wave 2 questionnaire to accommodate new evidence needs (e.g. exploring the impacts of the Welcome Home to Energy Efficiency campaign), where questions had not worked as well as anticipated at wave 1[23], or where new response options were needed. The wave 2 questionnaire is included in an annex to this report: Section: Installer Survey Questionnaire (Wave 2).

[23] For example, in the wave 1 survey, installer companies were asked to quantify full-time equivalent (FTE) jobs involved in the installation of LCH systems prior to the BUS and after the scheme launched (split between roles working on BUS-funded installations and roles working on off-scheme installations). They were also asked to quantify employment in any subcontractor companies they worked with. Survey respondents found these questions time-consuming and difficult to answer so they were simplified at wave 2. Respondents were no longer asked to quantify subcontractor employment.

Sample design

The population for the survey was all installer companies registered to deliver installations under the BUS. To develop the sampling frame, we excluded all installer companies that were suspended and companies that had completed their registration when the sample was created. We also excluded any duplicate installer companies[24] and companies that did not have valid telephone numbers[25]. This means that the survey was not a full census of all installer companies. The survey was delivered in two waves, each of which had its own sampling frame:

- Wave 1 consisted of all installer companies (minus the exclusions outlined above) that were listed as being BUS registered at the end of April 2023.
- Wave 2 consisted of all installer companies that were listed as being BUS registered as at the end of April 2024 (minus the exclusions outlined above), except for companies that were contacted as part of the wave 1 survey and either responded or opted out of all surveys (i.e. hard refusals). The wave 2 sampling frame thus combined companies that had registered with the BUS since wave 1 (395 companies) or that had already registered but had not responded to the wave 1 survey (718 companies).

Table 12 summarises the size of the sub-populations, sampling frame and sample at each wave. As noted above, the sampling frames are smaller than the populations due to the exclusion of suspended companies and duplicates (wave 1) and because wave 1 participants were excluded at wave 2.

Table 12: Overview of the sub-population, sampling frame and sample at each survey wave (number of property owners)

Survey wave	Reference period (sample drawn on this date)	Sub-population	Sampling frame	Sample
Wave 1	April 2023	1,102	1,065	1,057
Wave 2	April 2024	1,511	1,113	1,110

Survey delivery

Surveys were conducted using Computer Assisted Telephone Interviewing (CATI), though installer companies were given the option of an online survey if preferred. For wave 1, a soft launch of the survey was carried out between 26 July 2023 and 1 August 2023, by which time 42 surveys had been completed (these have been included in the analysis). Question completion and survey duration were reviewed, and various minor changes were made (primarily adding new answer codes based on open text responses provided by respondents).

[24] 'Duplicate companies' had different trading names but the same individual contact (name, email address and telephone number), and were excluded to avoid surveying the same individual about two different companies.
[25] i.e. because there were insufficient numbers of digits in their telephone numbers. Further telephone numbers were found to be invalid once recruitment started (see below).

There was no soft launch undertaken at wave 2, though responses to the amended questions on employment were monitored during the early interviews.

Surveying took place between the following dates:

- Wave 1: 7 August to 1 September 2023.
- Wave 2: 12 August to 20 September 2024.

At each wave, installer companies were sent an advance email that explained the purpose of the survey and informed them that a researcher would be in contact to arrange a telephone appointment. Telephone surveys were undertaken at different times in the day (daytime and early evening) and at the weekend. To incentivise participation, a charitable donation worth £10 was made to Heart Research UK on behalf of every respondent. All installer companies were contacted up to seven times during the fieldwork window.

Table 13 provides a detailed breakdown of the survey delivery outcomes. A total of 516 responses were received across the two waves, and response rates were 23% and 24% at waves 1 and 2 respectively.

Table 13 Installer company survey response rate

	Wave 1: number	Wave 1: % of sample	Wave 2: number	Wave 2: % of sample
Number of installer companies in the sampling frame	**1,057**	**-**	**1,110**	**-**
Wrong number or contact/company not known	6	0.6%	4	0.4%
Total usable sample	**1,051**	**-**	**1,106**	**-**
Unreachable within fieldwork window	679	64.2%	677	61.0%
Appointment could not be arranged within fieldwork window	6	0.6%	71	6.4%
Refused	119	11.3%	89	8.0%
Completed (% of sampling frame)	**247**	**23.4%**	**269**	**24.2%**
Completed (% of usable sample)	**247**	**23.5%**	**269**	**25.6%**

Data processing and weighting

The following data processing activities were undertaken:

- For some questions, respondents were asked to specify details whenever they gave 'other' as an answer (i.e. a response that was not already covered by the list of answer codes shown). Their answers were analysed and, where possible, back-coded to existing codes, to slightly amended codes, or to newly created codes. The exception were those answers that were unclear or too general or where answers were 'unique' because they were given by just one survey respondent; such responses were left in an 'other' code.
- Fully open-text responses to the final 'wrap-up' question were analysed qualitatively, using an analysis framework structured around key evaluation themes.
- Response data from the surveys were linked to data from the BUS database (number of completed applications and installations) to create a consolidated dataset.

The characteristics of the achieved sample of installers were compared to the profile of the population of BUS registered installers, to assess its representativeness. There is little scheme data available about registered installers, which limited the number of variables that could be used to compare the sample with the population. Data on completed installations were used (Table 14), and the team also looked completed BUS applications – which followed a similar pattern to installations. Table 14 differentiates between the achieved samples and associated sub-populations at waves 1 and 2 of the survey. At both waves of the survey the achieved sample slightly underrepresented installers that had completed zero or 1-5 installations. Wave 2 also slightly overrepresented installers that had completed 51+ installations. Overall, however, the achieved sample for the installer survey was reasonably representative of the population from which it was drawn.

Table 14: Comparison of the BUS installer sample with the installer population

Number of BUS funded installations#	Wave 1 % of achieved sample	Wave 1 % of sub-population #	Wave 2 % of achieved sample	Wave 2 % of sub-population #
Zero	17.8%	21.6%	16.0%	18.6%
1 to 5	42.5%	44.2%	36.8%	38.1%
6 to 10	15.0%	13.2%	13.8%	13.4%
11 to 50	22.7%	18.0%	23.0%	23.0%
51+	2.0%	2.9%	10.4%	6.8%

Note: # Reference periods for the sub-populations are as follows: Wave 1 – as at the end of April 2023; Wave 2 – as at the end of April 2024 (including installers who were initially sampled at wave 1 but did not respond).

At wave 1 of the survey – as discussed in the 2024 Interim Report – it was decided not to weight the data, as the sample was sufficiently representative and the downsides of weighting with such a small sample size (i.e. reduced accuracy due to increased sampling variance etc.) outweighed the benefits. For the 2025 Interim Report it was decided that weighting should be

used as the sample size was larger. Weights were calculated based on the number of installations completed by installers[26]. Weights were calculated for each survey wave, according to the characteristics of BUS-funded installations during the reference periods from which they were sampled[27]. Table 15 summarises the weights that were applied.

Table 15: Summary of the weights applied (installer survey)

Number of BUS funded installations#	Wave 1	Wave 2
Zero	1.212	1.163
1 to 5	1.040	1.036
6 to 10	0.884	0.977
11 to 50	0.795	0.999
51 or more	1.438	0.655

Note: # For wave 1 this was as at April 2023 and for wave 2 this was as at April 2024

Survey data analysis and reporting

Survey data analysis consisted of descriptive statistics. A mix of univariate and bivariate analysis was carried out, using cross-tabulations to investigate the relationship between variables (e.g. whether question responses varied depending on the characteristics of installers). Various cross-tabulations were carried out, and the most important have been included within data tables that have been published in support of this Technical Methodological Report. The results of the analysis of the installer survey are presented in the 2025 Interim Report of evaluation results, which is published separately[28].

Interviews with non-BUS registered installers

Topic guide design

The installer topic guide was designed to take between 30-45 minutes for most interviewees, and consisted of the following sections:

- The characteristics of installer companies, including their size, market offerings, and participation – or not – in consumer codes and competent person schemes.

[26] The evaluation team considered also using the number of BUS applications, but the distribution was very similar to the number of installations.
[27] The evaluation team also considered whether to weight the combined installer survey dataset according to the relative size of the sub-populations from which the two waves were sampled. However, analysis showed that the sub-populations from which waves 1 and 2 were sampled were sufficiently similar that the costs of adding another weighting variable (i.e. reduced accuracy due to increased sampling variance etc.) outweighed the benefits.
[28] Evaluation of the Boiler Upgrade Scheme: 2025 Interim Report

- Their awareness of the BUS, reasons for not participating in the scheme, and any areas for improvement that would encourage them to get registered with the BUS.
- The impacts of not participating in the BUS on their businesses.

Questions were accompanied by probes to follow-up on lines of enquiry, responding to interviewees' answers.

Sample design

The main sampling frame for interviewees was the MCS register, which was analysed to identify installer companies that installed BUS-eligible technologies, were based in England and Wales, and which were not registered with the BUS as of February 2024. Whilst Scotland-based installer companies could have carried out BUS installations in England and Wales, it was felt that this would probably not be their priority market. Of the 4,624 installer companies that were on the MCS database, 245 were eligible for inclusion in the sampling frame. All these companies were eventually contacted, but difficulties with recruitment (see below) meant that it was only possible to complete 8 interviews. To achieve the target 10 interviews, two further (non-MCS) installer companies were identified through i) existing contacts via LinkedIn; and ii) analysis of membership of the Heat Pump Association[29].

Sampling was intended to be purposive, with sampling criteria and quotas to ensure a breadth of views. However, difficulties with recruitment meant that ultimately the research team interviewed any organisation that expressed an interest in participating. Sampling criteria and the target number of interviews are shown below in Table 16 below.

Interview delivery

As an incentive to increase participation, all installers that participated in the research were offered a charitable donation worth £10 that would be made to Heart Research UK. Interviews took place in March and April 2024 25-45 minutes to complete, using a semi-structured topic guide. All interviews were carried out by telephone/MS Teams and, subject to interviewees' consent, recorded and transcribed for analysis. Of the ten interviews, three took place before the changes to loft and cavity wall insulation requirements were announced on 14 March.

Table 16 summarises the profile of the planned and achieved sample of interviews. Ten interviews were completed, as planned, though recruitment was difficult (likely because installer companies had not benefited from the BUS and were less inclined to spend time being interviewed about it). Two of the ten interviewed installers had installed LCH systems as part of the BUS, albeit under an umbrella scheme[30]. Another installer was registered with the BUS but was in the process of leaving the Scheme when interviewed. It proved impossible to recruit any

[29] The Heat Pump Association shared an invite to interview with their members on behalf of the study. One of the members who agreed to participate met the sampling specification (installed BUS-eligible technologies, were based in England and Wales, and which were not registered with the BUS as of February 2024).
[30] Under an umbrella scheme, LCH system commissioning sign-off and associated administration is undertaken by a BUS-registered and MCS accredited individual, rather than the company that actually did the installation.

installer companies that delivered biomass installations and was not BUS registered, largely because the pool of potential interviewees was so small.

Table 16: Profile of the non-participant installer company sample (planned and achieved)

Sampling criteria	Variable	Target interviews (out of 10)	Achieved interviews (out of 10)
Geographic region of location	Wales	1-2	1
	Southern England (East, South East, London, South West)	2-4	3
	The English Midlands	1-2	2
	Northern England (North West, North East, Yorkshire & Humber)	1-2	4
Number of LCH system installations (2023)	0-10	1-2	2
	11-99	1-2	7
	100-1000+	1-2	1
LCH installations undertaken	GSHPs	1-2	5
	ASHPs	1-2	7
	Biomass boilers	1-2	0
Total		**10**	**10**

Interview data analysis and reporting

Transcripts from the installer company interviews were created and coded into analytical frameworks designed around the main evaluation questions, with space for identification of unexpected evidence or themes. Coding and analysis were subject to quality assurance and consistency checks. Between-case (thematic) and within-case analysis was carried out. Analytical themes were identified based on evaluation needs (primarily the evidence needed to answer the evaluation questions) and from the interview data itself, in case any unexpected topics or lines of enquiry emerged. The results of the analysis of the interviews with installers that were not registered with the BUS are presented in the 2025 Interim Report of evaluation results, which is published separately[31].

[31] Evaluation of the Boiler Upgrade Scheme: 2025 Interim Report

The strengths and limitations of the installer research

The strengths of the research

Evidence from the two waves of surveys of installers provides a rich and varied evidence base about the experiences of installers that registered with the BUS. Survey data are based on a census of all installers (excluding any that were suspended) and a good response rate was achieved. Survey data are representative of the views of the BUS installer population and provide important insights into why installer companies chose to participate in the BUS and their experiences of the Scheme. The two waves of the installer surveys took place before and after the changes to the Scheme design – the uplift in the grant value and the changes to insulation requirements – enabling analysis of how these changes affected installers' experiences.

One of the acknowledged limitations of the research presented in the 2024 Interim Report was that it lacked evidence from LCH system installer companies who had chosen not to register with the BUS. The delivery of ten interviews with non-participant installers addressed this gap, providing insights into what deterred them from participating, and what could be changed about the Scheme to change this.

The limitations of the research

The small number of interviews with installer companies that had not registered with the BUS (10) meant that there were groups that it was not possible to engage with. There was low representation amongst Welsh installers (1 interviewee), and no representation from larger businesses or biomass boiler installers. This limits the conclusions that can be drawn about these groups. Non-participating installers sometimes had knowledge gaps about the BUS and were occasionally unable to fully articulate what it was about the BUS that had deterred them from participating, and what they thought could be improved.

Property Owner Survey Questionnaire (Wave 3)

Note: there were some changes to the questionnaire between survey waves, including:

- The addition of new questions, reflecting new research topics of interest (e.g. QD03 was added at wave 3).
- The addition of new response options, reflecting new research topics of interest and where open text responses to the preceding survey wave indicated that new response options were needed.
- Changes to the wording of existing response options, for example to increase clarity.

The questionnaire that follows is the version that was used in the Wave 3 survey.

PART A: About your property and heating system

R01

SHOW IF [UNIQUE] PROPERTY-OWNER.

Our records indicate that you had a [BUS MEASURE INSTALLED] under the Boiler Upgrade Scheme at [INSTALLATION ADDRESS, INSTALLATION POSTCODE]. For the following questions, please answer with this installation in mind.

SHOW IF [DUPLICATE] PROPERTY-OWNER

Our records indicate that you own more than one property that has had an installation under the Boiler Upgrade Scheme. For the following questions, please answer with the following installation in mind…

A [BUS MEASURE INSTALLED] that was installed at [INSTALLATION ADDRESS, INSTALLATION POSTCODE].

R02

ASK IF [DOMESTIC/NON-DOMESTIC] IN DATABASE IS UNKNOWN.

Is this property used for domestic (i.e. residential) or non-domestic (i.e. a business) purposes?

CODE ONE.

Domestic
Non-domestic
Don’t know [EXITS SURVEY]

R03

ASK ALL.

Is this property newly built? By this we mean that the current property is built on a site where there was either no property previously, or the previous property was wholly or largely demolished. We also mean that this property was built around the same time that [THE LCH SYSTEM INSTALLED] was installed.

CODE ONE.

Yes
No
Don't know

QA01

ASK ALL.

Which of these best describes how you use, or plan to use, the property?

CODE ONE.

[IF DOMESTIC] Main home
[IF DOMESTIC] Second home primarily used by you
[IF DOMESTIC] Residential let (i.e. rented to someone to live in)
[IF NON-DOMESTIC] Main place of work
[IF NON-DOMESTIC] Commercial let (i.e. rented to another business)
[IF DOMESTIC] Holiday let
Another use [WRITE IN]
Mixture of uses
Don't know
Prefer not to say

QA02a

ASK ALL DOMESTIC.

Which of the following best describes the property?

CODE ONE.

Detached house
Semi-detached house/Mid-terrace house
End-terrace house
Flat
Bungalow
Don't know

QA02b

ASK ALL NON-DOMESTIC.

Which of the following best describes how the property is used?

CODE ONE.

Arts, community and leisure
Education
Emergency services
Factory
Health
Hospitality (e.g. restaurant or café)
Office
Shop
Warehouse
Other [WRITE IN]
Don't know

QA03a

ASK ALL DOMESTIC.

How many bedrooms does the property have? Please include all rooms built or converted for use as bedrooms.

CODE ONE.

1
2
3
4
5 or more
Don't know

QA03b

ASK ALL NON-DOMESTIC.

What is the approximate floorspace of the property?

CODE ONE.

Under 100 m2
101-250 m2
251-500 m2
501-1000 m2
Over 1000 m2
Don't know

QA04

ASK ALL EXCEPT NEWLY BUILT PROPERTIES AT R03.

Roughly, when was the property built?

CODE ONE.

Pre 1900
1900-1929
1930-1982
1983-2011
2012 onwards
Don't know

QA05

ASK ALL EXCEPT NEWLY BUILT PROPERTIES AT R03.

Roughly, how old was the heating system you replaced with the [BUS MEASURE INSTALLED]?

CODE ONE.

There was no heating system
4 years old or less
5-9 years old
10-14 years old
15+ years old
Don't know

Part B: Joining the Boiler Upgrade Scheme

QB01

ASK ALL.

How did you first hear about the Boiler Upgrade Scheme?

SINGLE CODE. RANDOMISE ORDER.

Social media notification or advert
A letter or leaflet
An email
A telephone call
Own research/internet search
TV/radio
Energy supplier
Online news article
Printed newspaper/magazine
Billboard/outdoor advertising
An installer of renewable heating systems
Other tradesperson or professional (e.g. plumber, builder, architect)
Word of mouth
Charity or community group or other advice service
Other [WRITE IN]
Don't know

QB01a

ASK ALL THAT SELECTED SOCIAL MEDIA NOTIFICATION OR ADVERT

Which social media site did you hear about the Boiler Upgrade Scheme on?

SINGLE CODE. RANDOMISE ORDER.

Facebook
Instagram
LinkedIn
Twitter
Nextdoor
YouTube
Another social media site [WRITE IN]
Don't know

QB01b

ASK ALL THAT SELECTED SOCIAL MEDIA NOTIFICATION OR ADVERT AT QB01a

Did you hear about the Boiler Upgrade Scheme through official government advertising, such as the examples below?

[SHOW 'WELCOME HOME' CAMPAIGN MEDIA]

SINGLE CODE. RANDOMISE ORDER.

Yes
No
Don't know

QB02

ASK ALL.

Why did you decide to install a [BUS MEASURE INSTALLED], rather than a fossil fuel heating system? Please select any that apply.

MULTICODE. RANDOMISE ORDER.

Attitudinal reasons

I like the technology
It complements lifestyle and beliefs
Recommended by a friend/family member/neighbour
Recommended by a professional (e.g. plumber, architect or engineer)
I've seen a [BUS MEASURE INSTALLED] in operation and know that it works
Friends/family/neighbours have renewable heating technology installed

Technical reasons

Complements another renewable heating technology at my property
Complements an existing conventional heating technology installed in my property
Provides a more constant temperature
Easier to use/control
Easier access to fuel

Self-sufficiency reasons

Be more self-sufficient
Reduce my dependence on fossil fuels
As a more reliable energy source

Environmental reasons

It helps reduce air pollution
Reduce my carbon emissions

Financial reasons

Expected to save money on energy bills
Rising prices of fossil fuels (e.g. gas/oil)
Availability of the Boiler Upgrade Scheme grant

Other

Another reason [WRITE IN]
Don't know [EXCLUSIVE]

QB03

ASK ALL.

Did any of the following prompt your decision to have a [BUS MEASURE INSTALLED] installed now, as opposed to waiting? Please select any that apply.

MULTICODE. RANDOMISE ORDER.

[IF NEWLY BUILT PROPERTY AT R03] Building the property
Moving into the property
Intending to let the property
Upgrading or refurbishing the property
The availability of the Boiler Upgrade Scheme grant
An approach or offer from [A/AN LCH SYSTEM INSTALLED] salesperson or installer
Needed to replace the existing heating system because it was broken
Thought the existing heating system would need to be replaced soon
Wanted to switch to a fuel source with a lower/more stable price
Urgent desire to reduce carbon emissions
Finance became available
Something else [WRITE IN]
Don't know [EXCLUSIVE]

QB04

ASK ALL.

Why did you not previously have a [BUS MEASURE INSTALLED] installed in the property? Please select any that apply.

MULTICODE. RANDOMISE ORDER.

Unaware of them
Didn't know enough to consider installing one
Negative opinions about them
Didn't know enough about their benefits
No intention of replacing my heating system
Didn't know how to find a trusted installer
Tried but could not find an installer
Couldn't afford the upfront cost of [A/AN LCH SYSTEM INSTALLED]
[IF GRANT SIZE IS UPLIFTED] The BUS grant value was too low (in October 2023 the grant increased for air source and ground source heat pumps)
Couldn't afford the upfront cost of other works (e.g. improvements to the energy efficiency of my property)
Couldn't afford the running costs
[IF NEWLY BUILT PROPERTY AT R03] The property has only recently been built
Only recently moved into the property
Waiting for other supporting works (e.g. insulation) to be completed before installing [A/AN LCH SYSTEM INSTALLED]
Perception the technology needed to mature/improve
Another reason [WRITE IN]
Don't know [EXCLUSIVE]

QB04a

ASK IF SELECTED NEGATIVE OPINIONS ABOUT THEM.

What was the nature of your negative opinions about [BUS MEASURE INSTALLED]? Please select any that apply.

MULTICODE. RANDOMISE ORDER.

Too difficult to use
Too noisy
Unattractive
Take up too much space outside the property
Take up too much space inside the property
Too disruptive to install
Wouldn't make the property warm enough
Wouldn't warm the property quickly enough
Wouldn't provide enough hot water
Will devalue the property
Unreliable
Too expensive to install/run
Something else [WRITE IN]

Don’t know [EXCLUSIVE]

QB05

ASK ALL.

If the Boiler Upgrade Scheme grant had not been available, how likely would you have been to have had a [BUS MEASURE INSTALLED] installed anyway?

SINGLE CODE.

Very likely
Likely
Unlikely
Very unlikely
Don’t know

QB05a

ASK ALL IF LIKELY OR VERY LIKELY.

Without the Boiler Upgrade Scheme grant, would the installation of a [BUS MEASURE INSTALLED] have been done as quickly? This question refers to how quickly you would have made your decision to install a [BUS MEASURE INSTALLED] and begin that process.

SINGLE CODE.

Yes – as quickly
No – slower without the Boiler Upgrade Scheme
No – quicker without the Boiler Upgrade Scheme
Don’t know

QB06

ASK ALL.

When you accessed a Boiler Upgrade Scheme grant your property needed to have a valid Energy Performance Certificate (EPC) with no outstanding recommendations for loft or cavity wall insulation. Did you need to do any of the following to access the Boiler Upgrade Scheme grant? Please select any that apply.

MULTICODE.

Install loft insulation
Install cavity wall insulation
Get a valid Energy Performance Certificate (EPC)
None of the above [EXCLUSIVE]
Don’t know [EXCLUSIVE]

QB06a

ASK ALL THAT SELECTED LOFT INSULATION AND/OR CAVITY WALL INSULATION.

Was this insulation done by the same installer that did the [BUS MEASURE INSTALLED], or a different installer?

SINGLE CODE.

Done by the same installer
Done by a different installer
Don't know

QB06b

ASK ALL.

Did you have any of the following installed around the same time as [THE LCH SYSTEM INSTALLED]?

MULTICODE. RANDOMISE ORDER.

Solid wall insulation (internal or external)
Floor insulation
Double/triple glazing
Solar photovoltaic (solar panels that generate electricity)
Battery storage system
Solar thermal (solar panels for hot water, not which generate electricity)
Draught-proofing (e.g. draught-proofing existing doors or windows)
Mechanical Ventilation with Heat Recovery system
Something else [WRITE IN]
None of the above [EXCLUSIVE]
Don't know [EXCLUSIVE]

QB07

ASK ALL.

How easy or difficult did you find the following steps in participating in the Boiler Upgrade Scheme?

	Very difficult	Fairly difficult	Fairly easy	Very easy	Don' t know	Not applicable
Finding an installer to provide you with a quote						
Finding an installer able to do the installation when you wanted it done						
Finding out information about the Boiler Upgrade Scheme						

Finding out information about a [BUS MEASURE INSTALLED]						
Paying for the costs of the installation that were not covered by the Boiler Upgrade Scheme grant						
[IF SELECTED AT QB06] Paying for loft insulation to be installed						
[IF SELECTED AT QB06] Paying for cavity wall insulation to be installed						
[IF SELECTED AT QB06a] Finding an installer willing to provide you with a quote for the insulation						
[IF SELECTED AT QB06a] Finding an installer able to install the insulation when you wanted it done						
Confirming with Ofgem that you consent to the installation						

QB09

ASK ALL.

How many installers did you get a quote from?

CODE ONE.

1
2
3 or more
Don't know

QB09a

ASK IF SELECTED 2 OR MORE.

Were any of these installers not registered under the Boiler Upgrade Scheme (i.e. they could not do the installation under the Boiler Upgrade Scheme)?

CODE ONE.

Yes, one or more was not registered under the Boiler Upgrade Scheme
No, they were all registered under the Boiler Upgrade Scheme
Don't know

QB09b

ASK IF SELECTED ONE OR MORE NOT REGISTERED UNDER THE BUS.

How did the quote(s) from the non-Boiler Upgrade Scheme registered installer(s) compare to the quote from the Boiler Upgrade Scheme registered installer? When answering, please

compare the full quote values, i.e. the cost before the installer subtracted the value of the Boiler Upgrade Scheme grant. The Boiler Upgrade Scheme grant value is £5,000 for an air source heat pump and biomass boiler and £6,000 for a ground source heat pump.

The non-Boiler Upgrade Scheme registered installer(s) was…

SINGLE CODE.

Over £500 more expensive
Up to £500 more expensive
The same
Up to £500 cheaper
Over £500 cheaper
Don't know

Part C: Paying for the installation

QC01

ASK ALL.

How did you pay for the costs of the installation that were not covered by the Boiler Upgrade Scheme grant? This includes all costs associated with the installation of the [BUS MEASURE INSTALLED], including the [BUS MEASURE INSTALLED] itself, labour costs, VAT, and (where applicable) water cylinders and upgraded radiators. It does not include the cost of any separate measures, such as installing insulation or decommissioning an old fuel tank. Please select any that apply.

MULTICODE. RANDOMISE ORDER.

Savings/investments or regular income from current account
Personal loan from bank, building society or other provider
Mortgage/Mortgage extension
Loan or finance scheme through installer or manufacturer
Other loan or finance (e.g. credit card)
Gift or loan from friends or family
Income from the sale of another property
Another large one-off sale
Another grant or subsidy [WRITE IN]
Inheritance
Pension drawdown/lump sum
Something else [WRITE IN]
Did not have to pay any additional installation costs [EXCLUSIVE]
Prefer not to say [EXCLUSIVE]
Don't know [EXCLUSIVE]

QC01a

ASK IF SELECTED PERSONAL LOAN FROM BANK, BUILDING SOCIETY OR OTHER PROVIDER AT QC01.

What type of organisation provided you with the loan for the costs of the installation that were not covered by the Boiler Upgrade Scheme grant? Please select any that apply.

MULTICODE. RANDOMISE ORDER.

Bank
Building Society
Credit union or other community bank
Specialist lender
Other [WRITE IN]
Don't know [EXCLUSIVE]

QC02

ASK ALL.

How did your installer bill you for the [BUS MEASURE INSTALLED]?

CODE ONE.

You paid for the system in full, and later the installer refunded you the Boiler Upgrade Scheme grant value
The installer reduced the cost of the system by the value of the Boiler Upgrade Scheme grant
Did not pay anything
Something else [WRITE IN]
Don't know [EXCLUSIVE]

QC02a

ASK ALL.

How did you pay the bill for [THE LCH SYSTEM INSTALLED]?

CODE ONE.

A single upfront payment before the work begun
In instalments (e.g. a deposit then one or more payments)
A single payment once the work was completed
Paid as part of wider construction project (i.e. [THE LCH SYSTEM INSTALLED] bill was bundled together with other works)
Something else [WRITE IN]
Don't know [EXCLUSIVE]

QC02b

ASK ALL THAT SELECTED THE YOU PAID FOR THE SYSTEM IN FULL, AND LATER THE INSTALLER REFUNDED YOU THE BOILER UPGRADE SCHEME GRANT VALUE AT QC02.

How long after the installation was completed were you refunded the value of the Boiler Upgrade Scheme grant?

CODE ONE.

Within 1 month
Between 1 and 2 months
Between 2 and 3 months
Between 3 and 6 months
More than 6 months
Have not received the refund

Don't know

Part D: The installation experience

QD01

ASK ALL.

How satisfied or dissatisfied were you with the following?

	Very satisfied	Fairly satisfied	Neither satisfied nor dissatisfied	Fairly dissatisfied	Very dissatisfied	Don' t know
Scheduling the installer to do the works						
Any disruption caused by the installation						
How many days the installation took to complete						
The handover of the system to you once the installation was complete (e.g. providing system documentation)						

QD02

ASK ALL.

Was [THE LCH SYSTEM INSTALLED] installation completed over one continuous period (excluding weekends and bank holidays)? By installation, we mean removing your existing system and installing the new system. Please exclude any return visits to fix faults.

CODE ONE.

Yes – over one continuous period
No – broken up into multiple visits, including some days where the installer was not working at your property
Don't know

QD02a

ASK ALL.

How many days did the [BUS MEASURE INSTALLED] installation take?

IF SELECTED YES – OVER ONE CONTINUOUS PERIOD OR DON'T KNOW AT QD02: Again, please count the time that passed between the start and finish of the installation works, but exclude any return visits to fix faults. Again, by installation works we mean removing your existing system and installing the new system.

IF SELECTED NO AT QD02: Again, please count the time that passed between the start and finish of the installation works, regardless of whether or not the installer was working at your property. Please exclude any return visits to fix faults. Again, by installation works we mean removing your existing system and installing the new system.

[WRITE IN NUMBER]
Don't know

QD03

ASK ALL.

Did you do any of the following in addition to having [THE LCH SYSTEM INSTALLED] installed?

	Did this before starting [[THE LCH SYSTEM INSTALLED] installation	Did this around the same time as [[THE LCH SYSTEM INSTALLED]	Did not need to have this done	Don' t know
Replaced internal pipework				
Replaced radiators with larger radiators				
Installed a new or larger hot water tank				

Installed a smart thermostat				

Part E: After the installation was completed

QE02

ASK ALL.

Have you made any formal complaints about the [BUS MEASURE INSTALLED] installation to any of the following organisations?

MULTICODE. RANDOMISE ORDER.

Your installer
The Microgeneration Certification Scheme (MCS)
The Renewable Energy Consumer Code (RECC)
The Home Insulation & Energy Systems Quality Assured Contractors Scheme (HIES)
Ofgem
The Department for Energy Security & Net Zero
The manufacturer
The National Association of Professional Inspectors and Testers (NAPIT)
Another organisation [WRITE IN]
None of the above [EXCLUSIVE]
Don't know [EXCLUSIVE]
Prefer not to say [EXCLUSIVE]

QE02b

ASK FOR EACH ORGANISATION THAT THEY HAD COMPLAINED TO.

How satisfied are you with the outcome of this complaint?

	Very satisfied	Fairly satisfied	Neither satisfied nor	Fairly dissatisfied	Very dissatisfied	Too early to say	Don' t know	Prefer not to say
Your installer								
The Microgeneration Certification Scheme (MCS)								
The Renewable Energy Consumer Code (RECC)								

The Home Insulation & Energy Systems Quality Assured Contractors Scheme (HIES)								
Ofgem								
The Department for Energy Security & Net Zero								
The manufacturer								
The National Association of Professional Inspectors and Testers (NAPIT)								
Another organisation								

QE03

ASK ALL.

Taking everything into account, how satisfied or dissatisfied are you with your [BUS MEASURE INSTALLED] overall?

CODE ONE.

Very satisfied
Fairly satisfied
Neither satisfied nor dissatisfied
Fairly dissatisfied
Very dissatisfied
Too early to say
Don't know

QE04

ASK ALL.

Based on your experience to date would you recommend a [BUS MEASURE INSTALLED] to friends?

CODE ONE.

Definitely would
Probably would
Probably would not
Definitely would not
Already recommended
Too early to say
Don’t know

QE05

ASK ALL.

Taking everything into account, how satisfied or dissatisfied are you with your experience of the Boiler Upgrade Scheme overall?

CODE ONE.

Very satisfied
Fairly satisfied
Neither satisfied nor dissatisfied
Fairly dissatisfied
Very dissatisfied
Too early to say
Don't know

Part F: About you

QF02

ASK ALL DOMESTIC.

Including yourself, how many people live in the household and what age brackets are they in from the following: [enter the number of people in each age band]

MULTICODE.

Age 0-15 [OPEN TEXT BOX]
Age 16-34 [OPEN TEXT BOX]
Age 35-54 [OPEN TEXT BOX]
Age 55-74 [OPEN TEXT BOX]
Age 75 and over [OPEN TEXT BOX]
Don’t know [OPEN TEXT BOX]

QF03

ASK ALL DOMESTIC.

What is the household's approximate total income before tax and any other deductions? This includes earnings from employment or self-employment, income from benefits and pensions, as well as income from other sources such as interest from savings.

CODE ONE.

£0 to £10,399
£10,400 to £20,799
£20,800 to £31,199
£31,200 to £41,599
£41,600 to £51,999
£52,000 to £103,999
£104,000 to £129,999
£130,000 or over
Prefer not to say

QF04

ASK ALL

How concerned, if at all, are you about climate change, sometimes referred to as 'global warming'?

CODE ONE.

Not all concerned
Not very concerned
Fairly concerned
Very concerned
Don't know

QF05a

ASK ALL DOMESTIC.

How easy or difficult is it to afford your energy payments?

CODE ONE.

Very easy
Somewhat easy
Somewhat difficult
Very difficult
Don't know
Prefer not to say

QF05b

ASK ALL NON-DOMESTIC.

How easy or difficult is it to afford your energy payments at the property where you installed the [BUS MEASURE INSTALLED]?

CODE ONE.

Very easy
Somewhat easy
Somewhat difficult
Very difficult
Don't know
Prefer not to say

QF06

ASK ALL.

When you first heard about the Boiler Upgrade Scheme, how much would you say you knew about a [BUS MEASURE INSTALLED]?

CODE ONE.

Never heard of them
Hardly anything but had heard about them
A little
A fair amount
A lot
Don't know

QF07

ASK ALL.

The next two questions are about disability and ethnicity, which are considered sensitive data. They will be used by ICF for data classification purposes only. Your responses will be treated in strictest confidence by the ICF study team and will not be shared or published in a way that would enable anybody to identify you from your answers. Do you agree to answer these questions on this basis? Please feel free to say "no, I do not agree".

CODE ONE.

Yes, I agree
No, I do not agree [SKIP TO PART G]

QF07a

ASK ALL THAT AGREED IN THE PREVIOUS QUESTION.

Do you have any physical or mental health conditions or illnesses lasting or expected to last 12 months or more?

CODE ONE.

Yes
No
Prefer not to say

QF07b

ASK ALL THAT ANSWERED YES TO THE PREVIOUS QUESTION

Do any of your conditions or illnesses reduce your ability to carry out day-to-day activities?

Yes, a lot
Yes, a little
Not at all
Prefer not to say

QF07c

ASK ALL THAT AGREED IN THE PREVIOUS QUESTION.

What is your ethnic group? Choose one option that best describes your ethnic group or background.

CODE ONE.

White

- English/Welsh/Scottish/Northern Irish/British
- Irish
- Gypsy or Irish Traveller
- Any other White background, please describe

Mixed/Multiple ethnic groups

- White and Black Caribbean
- White and Black African
- White and Asian
- Any other Mixed/Multiple ethnic background, please describe

Asian/Asian British

- Indian
- Pakistani
- Bangladeshi
- Chinese
- Any other Asian background, please describe

Black/African/Caribbean/Black British

- African
- Caribbean
- Any other Black/African/Caribbean background, please describe

Other ethnic group

- Arab
- Any other ethnic group, please describe

Part G: Anything else

QG01

ASK ALL.

Is there anything else you would like to say about your experience of the Boiler Upgrade Scheme?

OPEN TEXT CODE. UNPROMPTED.

No

Case Study Property Owner Topic Guide

Part A: Introduction

NOTE: ASSUMED DURATION 2-3 MINUTES

Thank them again for having completed the online survey about their experiences. Explain that the purpose of this interview is to discuss their experiences of the BUS in more detail.

Reiterate that the results of this interview will be confidential and will not be made available to the Department for Energy Security and Net Zero or Ofgem, or anyone else in a way that would identify them personally. The results of the interview will be written up within the case study, which will not identify them or their property. Explain that they can stop the interview and withdraw from the research at any time up until 29 February 2024, either by telling the interviewer or by replying to the email they received from us.

Ask permission to record the interview and explain that this is just for the purpose of keeping accurate notes. The audio file will be deleted after the interview transcript has been finalised. IF NO CONSENT: explain that you will instead be keeping notes from the interview.

Part B: Joining the BUS and learning about ASHPs

NOTE: ASSUMED DURATION 10 MINUTES.

QB01

ASK ALL.

Note to interviewer: review their answers to QF06 which explores how much they knew about ASHPs before they first heard about the BUS, and QB04 which explores barriers previously encountered and views on ASHPs.

Looking back to before you decided to participate in the BUS, had you heard of an ASHP and if so, how well did you understand them? Probe:

> When did you first hear about ASHPs, and from what source?
> Had you ever previously used one or seen one in operation?
> What were your impressions of ASHPs, if any, before you joined the BUS? What were your views on what it was like to have one installed in your home, and to use one?
> What, if any, did you think were the positive and negative features of an ASHP? Where had you got this information from?
> Had you previously looked into getting an ASHP installed? If so, what had stopped you?

QB02

ASK ALL.

Note to interviewer: review their answers to QB05 which explores how likely it is that they would have had an ASHP installed anyway, if the BUS was not available.

Probe:

> IF LIKELY THEY WOULD HAVE HAD ONE INSTALLED ANYWAY: Why do you say that you would have been likely to have one installed? When do you think this would have happened? NOTE TO INTERVIEWER: recall/recap their answers to QB01 Given that you had not previously had one installed, why do you think you would have been likely to do so now? How confident are you that this would have happened, and what might have stopped it?
> IF NOT LIKELY THEY WOULD HAVE HAD ONE INSTALLED ANYWAY: Why do you say that you would have been unlikely to have one installed? NOTE TO INTERVIEWER: recall/recap their answers to QB01 What would have stopped you, and how confident are you that you would not have found a way to overcome this?

QB03

ASK ALL.

Note to interviewer: review their answers to QB01 which explores how they first heard about the BUS, and QB02/03 which explores their motivations to act. Also review their answers to QB07(3&4) and whether they found it easy or difficult to find out information about ASHPs.

How did you hear and learn about the BUS and what made you want to participate? Probe:

> What motivated you to want to get an ASHP installed, rather than a fossil fuel heating system?
> What was it about the BUS that addressed any concerns you might previously have had about getting an ASHP?
> Were you aware that BUS installers had to be registered with the Microgeneration Certification Scheme (MCS) – a quality assurance Scheme – and a member of a consumer code? IF NECESSARY: the codes are the Renewable Energy Consumer Code (RECC) or the HIES Consumer Code.
> IF THEY WERE AWARE: Did this play a part in your decision to choose to use the BUS? Did you consider getting an ASHP installed outside of the BUS, and if so why?
> Why did you decide to have an ASHP installed when you did? What were the triggers for taking action now, rather than keeping your existing heating system? NOTE TO INTERVIEWER: THEIRS MAY BE A SELF-BUILD PROPERTY, WITH NO EXISTING HEATING SYSTEM.
> What information did you access about the BUS and about an ASHP more generally? NOTE TO INTERVIEWER: PROBE ABOUT THE SOURCE(S) USED, SUCH AS INTERNET, FRIENDS/FAMILY. Were you satisfied or dissatisfied with the information you accessed, and did you feel able to make an informed decision about whether or not to proceed?
> What, if anything, did you learn that was new to you? Did anything you learned challenge or confirm any pre-existing perceptions – positive or negative – that you had about an ASHP?

Part C: System design and experience through to voucher application

NOTE: ASSUMED DURATION 15 MINUTES.

QC01

ASK ALL.

Note to interviewer: review their answers to QB07 which explored ease of accessing BUS and QB08 which explored how many quotes they had obtained.

How did you find an installer to submit a BUS application for you? Probe:

> Did you contact an installer or did an installer contact you?
> IF THEY CONTACTED THE INSTALLER: How many installers did you contact, and how did you identify them? How easy was it to contact/speak to them? How confident were you that they were trustworthy, and what did you do to check this? If there was anything about them that you thought did not seem trustworthy, what was this and why did you think it? IF NOT MENTIONED: Did you check the list of accredited installers on the Microgeneration Certification Scheme (MCS) before contacting an installer? Did you check that installers were registered to install measures under the BUS before contacting them?
> IF THEY WERE CONTACTED BY THE INSTALLER: How confident were you that they were trustworthy, and what did you do to check this? If there was anything about them that you thought did not seem trustworthy, what was this and why did you think it? Did you contact any other installers in addition to the one that contacted you, and if not why not?
> Were these installers available to do the installation work when you wanted it done? If not, how long did they say the delay would be, in weeks?
> How helpful were the installers, in terms of providing clear and useful information about ASHPs and about the BUS?
> How did you decide which installer to use for the BUS application?

QC02

ASK ALL.

Note to interviewer: review their answer to QC02 on how the installer billed them for the works, albeit here this question is presented as how they presented this in the quote.

Can you talk me through the process you saw the installer go through to design and quote for the ASHP? IF NECESSARY: If they had multiple quotes then ask them to summarise across all of them. CLARIFICATION IF NEEDED: What were the steps you saw the installer take? Probe:

> Did the installer visit your property to carry out a survey? IF NECESSARY: This would have been to measure the property and do the calculations needed to input into the design of the proposed system. Were you satisfied with your experience of this visit? Did the installer charge you for this survey, or did they offer it for free (and if so under what conditions?). Did this affect your decision about which installer to use and whether to proceed with the ASHP? NOTE TO INTERVIEWER: INSTALLERS MAY BE OFFERING FREE SURVEYS/QUOTES TO PERSUADE PEOPLE TO CHOOSE THEM, AND THIS QUESTION EXPLORES IF/HOW THIS AFFECTS PROPERTY OWNERS' DECISION-MAKING.
> How did the installer communicate and discuss the design of the ASHP with you? Were there any areas where you disagreed about the design, and if so, what was the outcome of this? Probe: Whether the outcome was satisfactory.
> How did the installer communicate the quote to you? Was there any negotiation about the price, and if so, what was the outcome of this? Probe: Whether the outcome was satisfactory.
> In their quote, how did the installer propose to bill you for the ASHP? Was it clear to you how they had treated the BUS grant in their calculations? Had they reduced the quote by the value of the BUS grant? IF NECESSARY: at the time this was £5,000 for ASHPs. Or did they propose to charge you the full amount

then give you a refund equal to the value of the BUS grant? Were you happy with their proposed approach? Were there subsequently any changes to the overall costs you were charged?
Once you agreed to proceed, what involvement, if any, did you have in the process through which the installer submitted a BUS voucher application on your behalf?
How was the experience of giving customer consent for you? IF NECESSARY: This is where Ofgem checked with you that you were happy that a BUS application had been submitted and for works to proceed on your behalf.
Overall, how satisfied or dissatisfied were you with the process through which the installer submitted a BUS voucher for you? Did you get any information about how the process was going?

QC03

ASK ALL.

Note to interviewer: check their answer to QB06 to see whether they needed to have loft and/or cavity wall insulation installed to access BUS.

Your survey response indicated that you did / did not need to get loft insulation or cavity wall insulation in order to access the BUS.

IF YES, FOR 1) LOFT INSULATION AND/OR 2) CAVITY WALL INSULATION: Did you get a quote from the same installer that designed the ASHP? If not, why not? Did your ASHP installer recommend anyone? Did you consider the quote(s) you received to be reasonable and/or affordable? How did the cost compare to that of the ASHP quote?
IF YES, FOR 1) LOFT INSULATION AND/OR 2) CAVITY WALL INSULATION: Were you able to find someone who was available to undertake these works when you wanted then done? If not, what impact did this have on your plans? Did your ASHP installer keep in touch with you whilst this was going on and how did it affect the timing and/or costs of these works?
ALL: Did you also get a quote for any other 'green' home improvement works, at the same time as the ASHP was designed? By green we mean solar panels/batteries, insulation works (other than loft or cavity wall insulation). If so, why did you want to have this work done at the same time?

QC04

ASK ALL.

Note to interviewer: review their answers to QC01 which explored how they paid for the installation costs not covered by the BUS grant.

NOTE TO INTERVIEWER: check records on whether the installation happened and tailor accordingly. How were you planning to pay / how did you pay for the costs of the installation that were not covered by the BUS grant? NOTE TO INTERVIEWER: IF QC03 INDICATES THEY HAD LOFT AND/OR CAVITY WALL INSULATION INSTALLED In your answer please separate out how you planned to pay/paid for 1) the costs of the installation of the ASHP and 2) the costs of the loft and/or cavity wall insulation you had installed around the same time. Probe:

What source(s) of funding were you planning to use/did you use?
How easy or difficult was it to access enough funds, and were you ultimately successful?

Did this amount and timing of the funds have any impact on your plans? (e.g. the timing of the installation, what was going to be installed / what was installed - such as the size of the ASHP unit or any insulation works undertaken in parallel).

Part D: Installation and handover

NOTE: ASSUMED DURATION 15 MINUTES

QD01

ASK ALL THAT HAD AN EXPIRED VOUCHER AT SOME POINT PRIOR TO HAVING AN INSTALLATION.

Note to interviewer: check the BUS database which will show: 1) how many vouchers they had that expired; and 2) when this happened, relative to the installation they did have.

Our records indicate that your property was named on at least on BUS voucher that expired before you went on to have an ASHP. Why was this, and what happened? Probe:

What stopped the installation happening within the voucher validity period? For reference, the voucher validity period is 3 months if you are installing an ASHP. INTERVIEWER TO PROBE AND DIFFERENTIATE BETWEEN:
Reasons related to the BUS design, e.g. a requirement to have loft or cavity wall insulation installed
Reasons unrelated to BUS but about other challenges related to getting an ASHP installed, e.g. finding an installer available to do the works
Reasons unrelated to any of the above, e.g. a change in personal circumstances, including no longer having the finance available to pay for the system
What actions, if any, did you and your installer take to try to get an installation completed before the voucher expired? Why did this not work?

QD02

ASK ALL.

Note to interviewer: review their answers to QD01 and QD02 / QD02a which explored experiences of the installation.

How satisfied were you with your experience of having an ASHP installed? Probe:

Did your experience of installation match what you had expected? Was there anything that was different from what you had understood would be the case? In particular, what was your experience of the following:
How long the installation took, and whether it felt concentrated or drawn out.
How disruptive the installation was, including how long you were without hot water/heat, and whether you moved out temporarily.
How clean and tidy the property was left, whether there was any damage to the property.
How, if at all, has your experience of the installation – good or bad – affected your perceptions of the new system?
Did the on-the-day handover leave you adequately prepared to use your new system? What were the strengths and weaknesses of the handover?

Have you contacted your installer since the installation was completed, for example to fix any faults and/or ask any questions?
IF YES: Were you satisfied or dissatisfied with your installer's response? Did it adequately resolve the issue?

QD03

ASK ALL.

Note to interviewer: review their answers to QE02/QE02b, which explored whether they had submitted any formal complaints and what the outcome of these was.

Have you made any formal complaints about the installation of the ASHP to any organisation? IF NECESSARY: examples would include your installer, consumer protection schemes such as the Microgeneration Certification Scheme, Renewable Energy Consumer Code or Home Insulation & Energy Systems Quality Assured Contractors Scheme. Or Ofgem or the Government.

What was the reason for these complaints? Why had this not been satisfactorily resolved by your installer?
How did you choose which organisation(s) to complain to? How easy or difficult did you find the process of submitting a complaint?
What was the outcome of these complaints? Were you satisfied or dissatisfied with this, and why?

QD04

ASK ALL.

Note to interviewer: check the BUS dataset which shows the key BUS dates, including: i) the date the voucher application was submitted; ii) the date it was issued; iii) the date it was redeemed; iv) the date it was paid; and v) the date the system was commissioned. If necessary, repeat this information to jog the interviewee's memory.

Thinking back to when you first decided you wanted to have an ASHP installed under the BUS, how much time elapsed between then and the completion of the installation? NOTE TO INTERVIEWER: calibrate this against the date you know the application was submitted, noting that they would have started their journey before this. Ask them to be as precise as feasible – start and end month. Probe:

Were you satisfied or dissatisfied with the amount of time it took from start to finish? How did this compare to your expectations about how long it would take?
Did you experience any notable delays during this time? If so, what were they? If they involved an installer, did the installer adequately explain why there was a delay and keep you updated on progress?

Part E: Using your ASHP

NOTE: ASSUMED DURATION 15 MINUTES

QE01

ASK ALL.

Note to interviewer: check the BUS dataset to see what fuel system they had before they had their ASHP installed, and when the ASHP was installed (i.e. whether they are likely to have used it to heat their home).

How satisfied are you with: i) the temperature of your home when heated using the ASHP, and ii) the temperature of your hot water? Probe:

> Are you too warm or too cold in your home? Does this vary between rooms? Does this vary depending on the time of day? Does this vary depending on the outside temperature?
> Does your ASHP heat up the home quickly enough for you? Does it respond quickly and evenly across the property?
> How satisfied are you with using the ASHP to get hot water? Does it provide enough hot water? Does it heat water quickly enough for you?
> Do all members of your household think the same about your ASHP?
> How does your ASHP compare with the system that you used before? What, if anything, do you think is better and/or worse about the heat pump? What evidence is this based on?

QE02

ASK ALL.

Have you and other members of your household changed anything about how you use your heating and hot water since you got your heat pump installed? Probe:

> Have you changed how and when you use different rooms in your home?
> Have you changed your use of other heating sources?
> Have you changed how and when you use hot water, for instance the timing or frequency of showers or baths?
> Are there any other changes that you have made, e.g. using radiators to dry clothes or anything unexpected that you have changed?

QE03

ASK ALL.

How easy or difficult have you found it to programme and control your heat pump? How confident are you that you know how to use the system efficiently and effectively? Probe:

> Who first set the heat pump controls and what time of year was this? Have they been adjusted since then? If not, why not, and what do you think the impact has been of leaving them unadjusted?
> If you have adjusted your heat pump controls, what did you change and why? How easy or difficult did you find it? How did it differ to what you had before?
> What information, if any, did you access to help you programme and control your heat pump? How useful was any information provided by your installer and/or any user guides or manuals that you were left with?
> Have you changed the way that you control heating and/or hot water in your home now that you have a heat pump (e.g. when heating comes on, how long for)?

QE04

ASK ALL.

Note to interviewer: this question concerns energy use and energy bills. Ask to see a copy of an energy bill – electricity and gas – for the period before the ASHP was installed and afterwards. Ideally during/after the 2023 heating season (i.e. spring 2023) and the same time period from 2022. Read out and confirm the bill and the amount of energy used.

Do you think that the running costs of your ASHP were adequately discussed and explained to you by your installer? Probe:

> When the system was designed were you told about an assumed electricity unit price (£ per kWh), and if so, do you recall what this was? How does this compare to your current electricity unit price?
> Thinking back to before you started using your new ASHP, how did you think your overall energy bills would change? Why did you think this, and what information did your installer give you that influenced your opinion? How certain were you that you knew what your future energy bills would be?
> Did the installer discuss with you how you can minimise your energy bills, e.g. by adjusting how you use your heat pump/heating, getting additional works done to your house, changing tariffs? Or referred to you to another source of information? If so, have you acted upon this advice and what has been the impact?

QE05

ASK ALL.

Overall, what is your opinion about the running costs of your heat pump? Probe:

> What happened to: i) your electricity use; and ii) your gas use over the last winter? How much of any difference in energy use do you attribute to the heat pump versus any other changes in your household energy use?
> Do you think that heat pump running costs have had any impact on your ability to pay your energy bills and/or wider household spending?
> IF PARTICIPANT WAS MOTIVATED BY ENVRIONMENTAL REASONS To what extent do you perceive the running costs to be acceptable given the environmental benefits that motivated you to have a heat pump installed in the first place?

Part F: Perceptions of your ASHP, and other impacts

NOTE: ASSUMED DURATION 10 MINUTES

QF01

ASK ALL.

Note to interviewer: review their answers to QE03 and QE04 which explored their satisfaction with their new system and propensity to recommend it.

What are your impressions, positive and negative, about your ASHP? Probe:

> What do you like or dislike about the new system, in terms of its appearance, location, noisiness, size, its impact on the environment – anything? Do all members of your household think the same?

What heating system did you use before your heat pump was installed? NOTE TO INTERVIEWER: IF THEY HAVE MOVED INTO THE PROPERTY, INCL. IF IT'S A SELF BUILD, DISCUSS WHAT SYSTEM THEY HAD PREVIOUSLY USED ELSEWHERE FOR COMPARISON How does the ASHP compare, based on its appearance, location, noisiness, size, its impact on the environment etc.?
Has anything about the ASHP – its appearance, location, noisiness, size, its impact on the environment etc. – changed anything about how you use heating or hot water, or how you use the space in your home or garden? If anything has changed, what are your views on the merits, or not, of having an ASHP? Would you recommend an ASHP to anyone, and why?
Have you shown anyone the system, and what were their impressions? Have your neighbours shown an interest in the system, and if so, has anything happened as a result (e.g. have they looked into / had one installed themselves)?

QF02

ASK ALL.

Have you installed, or do you plan to have installed, any other 'green' energy products in your property? By green energy products we mean other forms of low carbon heating, renewable generation of electricity, and/or measures to improve the energy efficiency of your home. IF NECESSARY: we are interested in things such as solar panels, batteries, solar thermal systems, any kind of insulation.

What role, if any, did your involvement in the BUS have in this decision? What, if anything, was it about having an ASHP installed that influenced your decision?
IF THEY WILL HAVE SOMETHING INSTALLED IN THE FUTURE: When do you think you might have these alternative green energy products installed? What, if anything, might stop you?

Part G: Closing and exit

NOTE: ASSUMED DURATION 2-3 MINUTES

ANYTHING ELSE

ASK ALL.

Is there anything else you would like to say about your experiences of the BUS?

EXIT

Thank them for their time and reiterate that will email the online voucher to them soon, to say thank you for their time.

Remind them that we will also be emailing them a draft write-up of the case study, to give them an opportunity to read through in case there are any inaccuracies or misrepresentations. They can reply via email if there is anything you wish to amend or correct. If they do not wish to make any changes or if we do not hear from them then the case study will be published.

Follow-Up Property Owner Survey Questionnaire

Part A: About your heating system

R01

SHOW IF [UNIQUE] PROPERTY-OWNER.

Our records indicate that you had [A/AN LCH SYSTEM INSTALLED] installed under the Boiler Upgrade Scheme at [INSTALLATION ADDRESS, INSTALLATION POSTCODE]. For the following questions, please answer with this installation in mind.

SHOW IF [DUPLICATE] PROPERTY-OWNER

Our records indicate that you own or owned more than one property that had an installation under the Boiler Upgrade Scheme. For the following questions, please answer with the following installation in mind…

[A/AN LCH SYSTEM INSTALLED] that was installed at [INSTALLATION ADDRESS, INSTALLATION POSTCODE].

R02

ASK ALL.

Do you still own or reside at this property?

CODE ONE.

Yes
No

R02a

ASK IF SELECTED “NO” AT RO2.

Since the rest of our questions are about this property, you will exit the survey after this question.

Will you have [A/AN LCH SYSTEM INSTALLED], or another type of low carbon heating system, installed at the property you currently live in?

CODE ONE.

Already have one
Definitely will
Probably will

Probably will not
Definitely will not
Don't know

EXITS SURVEY.

QA01

ASK ALL.

Do you still have [THE LCH SYSTEM INSTALLED] at the property?

CODE ONE.

Yes
No, removed it and installed a different heating system
No, removed it and don't currently have any heating system

QA01a

ASK IF SELECTED "NO, REMOVED IT AND INSTALLED A DIFFERENT SYSTEM" AT QA01

What heating system did you replace [THE LCH SYSTEM INSTALLED] with? Please focus on heating and do not include electricity generating systems (e.g. solar photovoltaics).

CODE ONE.

A different low carbon or renewable heating system (e.g. a different type of heat pump, solar thermal panels) (please describe) [WRITE IN]
A fossil fuel heating system (please describe) [WRITE IN]
Something else [WRITE IN]
Don't know

QA01b

ASK IF SELECTED "NO, REMOVED IT AND INSTALLED A DIFFERENT SYSTEM" OR "REMOVED IT AND DON'T CURRENTLY HAVE ANY SYSTEM" AT QA01

Since the rest of our questions are about [THE LCH SYSTEM INSTALLED], you will exit the survey after this question.

Why did you remove [THE LCH SYSTEM INSTALLED]? Select any that apply.

MULTICODE. RANDOMISE ORDER.

Wasn't working at all
Running costs were too high
Temperature of the property was not satisfactory
Responsiveness to heat demand was not satisfactory
Temperature of the hot water was not satisfactory
Quantity of the hot water was not satisfactory
Too noisy

Too complicated to use
Another reason [WRITE IN]
Don’t know [EXCLUSIVE]

EXITS SURVEY.

Part B: After the installation was completed

QB01

SHOW IF [NO COMPLAINTS].

In your response to our previous survey you said that you had not made any formal complaints about [THE LCH SYSTEM INSTALLED] installation. Since then, have you made a formal complaint to any of the following organisations?

MULTICODE. RANDOMISE ORDER.

Your installer
The Microgeneration Certification Scheme (MCS)
The Renewable Energy Consumer Code (RECC)
The Home Insulation & Energy Systems Quality Assured Contractors Scheme (HIES)
Ofgem
The Department for Energy Security & Net Zero
The manufacturer
The National Association of Professional Inspectors and Testers (NAPIT)
Another organisation [WRITE IN]
None of the above [EXCLUSIVE]
Don’t know [EXCLUSIVE]
Prefer not to say [EXCLUSIVE]

SHOW IF [COMPLAINTS].

In your response to our previous survey you said that you had made a formal complaint about [THE LCH SYSTEM INSTALLED] installation to [COMPLAINT ORGANISATIONS]. Have you made any new complaints since then to any of the following organisations? Please do not count any formal complaints you already mentioned in your previous survey response.

MULTICODE. RANDOMISE ORDER.

Your installer
The Microgeneration Certification Scheme (MCS)
The Renewable Energy Consumer Code (RECC)
The Home Insulation & Energy Systems Quality Assured Contractors Scheme (HIES)
Ofgem
The Department for Energy Security & Net Zero
The manufacturer
The National Association of Professional Inspectors and Testers (NAPIT)
Another organisation [WRITE IN]
None of the above [EXCLUSIVE]
Don’t know [EXCLUSIVE]

Prefer not to say [EXCLUSIVE]

QB01a

ASK FOR EACH ORGANISATION THAT THEY HAD COMPLAINED TO.

How satisfied are you with the outcome of this new complaint?

	Very satisfied	Fairly satisfied	Neither satisfied nor	Fairly dissatisfied	Very dissatisfied	Too early to say	Don’ t know	Prefer not to say
Your installer								
The Microgeneration Certification Scheme (MCS)								
The Renewable Energy Consumer Code (RECC)								
The Home Insulation & Energy Systems Quality Assured Contractors Scheme (HIES)								
Ofgem								
The Department for Energy Security & Net Zero								
The manufacturer								
The National Association of Professional Inspectors and Testers (NAPIT)								
Another organisation								

QB02

ASK ALL.

Have you had [THE LCH SYSTEM INSTALLED] serviced?

CODE ONE.

Yes
No, tried but haven't been able to have it serviced
No, haven't tried to have it serviced
Don't know

QB02a

ASK IF "YES" OR "NO, TRIED BUT HAVEN'T BEEN ABLE TO HAVE IT SERVICED" AT QB02.

How satisfied or dissatisfied were you with the following?

	Very satisfied	Fairly satisfied	Neither satisfied nor dissatisfied	Fairly dissatisfied	Very dissatisfied	Don' t know
Finding an engineer to do the servicing						
The cost of the servicing						

QB03

ASK ALL.

Has [THE LCH SYSTEM INSTALLED] system (including equipment installed at the same time such as pipework, a new hot water tank or new radiators) had any faults since it was installed? We ask about running costs, whether the property is warm enough and whether the hot water is warm enough later, so please focus here on faults and operational problems.

CODE ONE.

Yes
No
Don't know

QB03a

ASK IF SELECTED YES AT QB03.

What was the nature of the fault(s)? Select any that apply.

MULTICODE. RANDOMISE ORDER.

No heating
No hot water
[THE LCH SYSTEM INSTALLED] unit cycling on and off
Water leakage inside the property
Water leakage outside the property
Outdoor unit icing up
Excessive noise
Strong/unpleasant smell
Tripping property's electricity
Something else [WRITE IN]
Don't know [EXCLUSIVE]

QB04

ASK ALL ON GAS GRID.

Since you had [THE LCH SYSTEM INSTALLED] installed, have you disconnected the property from the gas grid? By this we mean that you have ended your gas supply contract and had your gas meter removed.

CODE ONE.

Yes
No, tried but have not been able to
No, not tried
The property did not have a gas connection
Don't know

QB04a

ASK ALL THAT SELECTED "NO, NOT TRIED" AT QB04.

Why have you not tried to disconnect the property from the gas grid? Select any that apply.

MULTICODE. RANDOMISE ORDER.

Not aware this was possible
Don't know how to
Want to but not got round to it
Not allowed to disconnect (please explain why) [WRITE IN REASON]
To keep the option to switch back to using a gas boiler
Plan to switch back to using a gas boiler
Use gas for other appliances (e.g. oven, hobs)
Concerned it will devalue the property
Another reason [WRITE IN]
Don't know [EXCLUSIVE]

QB05

ASK ALL.

Do you use any of the following for cooking? Select any that apply.

MULTICODE. RANDOMISE ORDER.

[SHOW IF ON GRID, AND SHOW FOR ALL EXCEPT THOSE THAT SELECTED YES AT QB04] A gas cooker (uses gas for oven and hob)
[SHOW IF ON GRID, AND SHOW FOR ALL EXCEPT THOSE THAT SELECTED YES AT QB04] A dual fuel cooker (e.g. gas oven and electric hob)
An oil-fired cooker
An LPG-fuelled cooker
A cooker that uses another fossil fuel [WRITE IN]
An electric cooker
Something else [WRITE IN]
Don't know

QB06

ASK IF RESPONDED TO THE WAVE 1 SURVEY.

Did you have any of the following installed around the same time as [THE LCH SYSTEM INSTALLED]? Select any that apply.

MULTICODE. RANDOMISE ORDER.

Solid wall insulation (internal or external)
Floor insulation
Double/triple glazing
Solar photovoltaic (solar panels that generate electricity)
Battery storage system
Solar thermal (solar panels for hot water, not which generate electricity)
Something else [WRITE IN]
None of the above [EXCLUSIVE]
Don't know [EXCLUSIVE]

Part C: Satisfaction with using your new heating system

R03

ASK ALL.

The following questions are about your experiences of using [THE LCH SYSTEM INSTALLED] in the property, including your views on the property temperature and hot water.

Do you have enough experience of using the [THE LCH SYSTEM INSTALLED] to be able to answer these questions? For example, you may be renting out the property and don't personally know what it is like to use it.

CODE ONE.

No, I don't have enough experience of [THE LCH SYSTEM INSTALLED] [skips to the next section of the survey]
Yes, I can answer these questions

IF NO, SKIP TO PART D.

QC01

ASK ALL.

Overall, which of the following describes the internal temperature achieved in the property by [THE LCH SYSTEM INSTALLED]?

CODE ONE.

Much too hot
Too hot
About right
Too cold
Much too cold
Haven't experienced it yet
Don't know

ASK ALL EXCEPT THOSE WHOSE PREVIOUS HEATING SYSTEM WAS 'NONE'.

Which of the following describes how the internal temperature achieved in the property by [THE LCH SYSTEM INSTALLED] compares to your previous system?

	Much too hot	Too hot	About right	Too cold	Much too cold	Haven' t experienced it yet	No previous heating system	Don' t know
On the coldest mornings								
On the coldest evenings								

QC02

ASK ALL.

How satisfied are you with the following?

	Very satisfied	Fairly satisfied	Neither satisfied nor dissatisfied	Fairly dissatisfied	Very dissatisfied	Haven’t experienced it yet	Don’t know
How quickly your heat pump heats up the property							
How evenly your heat pump heats up the rooms within the property							

QC03

ASK ALL.

Over the past winter, did you regularly use any of the following to heat some or all of the property in addition to [THE LCH SYSTEM INSTALLED]? Select any that apply.

MULTICODE. RANDOMISE ORDER.

Gas fire (mains or bottled gas)
Electric heater (including electric fire)
Open fire or stove, burning wood or coal
Rayburn or Aga stove
A gas or oil boiler to supplement [THE LCH SYSTEM INSTALLED]
Other [WRITE IN]
None of the above [EXCLUSIVE]
Don’t know [EXCLUSIVE]

QC04

ASK ALL.

Do you regularly use rooms in the property more or less than you did since you had [THE LCH SYSTEM INSTALLED] installed?

CODE ONE.

Much more than before
Slightly more than before

About the same
Slightly less than before
Much less than before
Don't know

QC05

ASK ALL THAT HAD AN ASHP OR GSHP INSTALLED.

Do you keep the heat pump on continuously during the days you are using it to heat the property? By keeping it on continuously we mean the system is programmed to always provide heat, though you may set the thermostat at a lower temperature at some points in the day.

CODE ONE.

Yes
No
Don't know

QC05a

ASK ALL THAT SELECTED NO AT QC05.

Why do you not keep the heat pump on continuously? Select any that apply.

MULTICODE. RANDOMISE ORDER.

Too expensive to do so
Don't want to waste electricity
Don't want to heat the property when it's not occupied
Not aware that keeping it on continuously is recommended
Another reason [WRITE IN]
Don't know [EXCLUSIVE]

QC06

ASK ALL.

Which of the following describes the water temperature achieved in the property by [THE LCH SYSTEM INSTALLED]?

CODE ONE.

Much too hot
Too hot
About right
Too cold
Much too cold
Haven't experienced it yet
Don't know

QC07

ASK ALL.

How satisfied are you with the following?

	Very satisfied	Fairly satisfied	Neither satisfied nor dissatisfied	Fairly dissatisfied	Very dissatisfied	Haven't experienced it yet	Don't know
How quickly [THE LCH SYSTEM INSTALLED] heats up water							
How much hot water [THE LCH SYSTEM INSTALLED] provides							

QC08

ASK ALL.

How confident or unconfident are you that you understand the following?

	Completely confident	Moderately confident	Slightly confident	Not at all confident	Haven't experienced it yet	Don't know
How to use [THE LCH SYSTEM INSTALLED] controls						
How to programme [THE LCH SYSTEM INSTALLED] to minimise its running costs						
What to do if something goes wrong with [THE LCH SYSTEM INSTALLED] controls						

Part D: Energy bills and tariffs

QD01

ASK ALL.

Thinking about the overall bills for energy (total for electricity, gas and/or other fuels) have you noticed a change since [THE LCH SYSTEM INSTALLED] was installed?

CODE ONE.

Total energy bills have increased
Total energy bills have decreased
Total energy bills have stayed the same
Too early to say
There was no energy bill for this property previously
Don't know

QD01a

ASK ALL EXCEPT "THERE WAS NO BILL FOR THIS PROPERTY PREVIOUSLY" AT QD01.

Is this what you had expected before you installed [THE LCH SYSTEM INSTALLED]?

CODE ONE.

I had expected total energy bills to be…

Higher than before
About the same
Lower than before
Didn't have any expectations
Don't know

QD02

ASK ALL.

What electricity tariff are you currently on?

CODE ONE.

Standard variable/fixed (including dual fuel, capped tariff)
Differential tariff where the price varies by time of day – time of use tariff (e.g. Economy 7, Economy 10)
A special heat pump tariff
Prepayment meter tariff
Other [WRITE IN]
Don't know

QD03

ASK ALL.

Have you changed your electricity tariff since [THE LCH SYSTEM INSTALLED] was installed?

CODE ONE.

Yes
No
Don't know

QD03a

ASK IF "YES" AT QD03

What electricity tariff were you on before you switched?

CODE ONE.

Standard variable/fixed (including dual fuel, capped tariff)
Differential tariff where the price varies by time of day (e.g. Economy 7, Economy 10)
Prepayment meter tariff
Other [WRITE IN]
Don't know

QD03B

ASK IF "YES" AT QD03

Why did you change your electricity tariff? Select any that apply.

MULTICODE. RANDOMISE ORDER.

Previous supplier went out of business
Previous fixed price contract ended
To reduce the running costs of [THE LCH SYSTEM INSTALLED]
To reduce the running costs of another electric-powered product or appliance (e.g. electric vehicle)
A general desire to reduce energy costs
Dissatisfied with the service I received from my previous supplier
Other [WRITE IN]
Don't know [EXCLUSIVE]

Part E: Perceptions about the new heating system

QE01

ASK ALL.

How satisfied are you with the noise level of [THE LCH SYSTEM INSTALLED]?

	Very satisfied	Fairly satisfied	Neither satisfied nor dissatisfied	Fairly dissatisfied	Very dissatisfied	Don’ t know
Generally						
On the coldest days						

QE02

ASK ALL EXCEPT SELF BUILD PROPERTIES.

Did you do any of the following when the [THE LCH SYSTEM INSTALLED] was installed?

MULTICODE. RANDOMISE ORDER.

Replaced some or all the radiators with underfloor heating
Replaced some or all the radiators with larger radiators
Installed a hot water tank when previously there wasn’t one [EXCLUSIVE WITH NEXT OPTION]
Replaced an existing hot water tank with a larger one [EXCLUSIVE WITH PREVIOUS OPTION]
None of the above [EXCLUSIVE]
Don’t know [EXCLUSIVE]

QE02a

ASK ALL WHO SELECTED ONE OR MORE OF THE RELEVANT OPTIONS AT QE02.

Overall, how satisfied or dissatisfied are you with your experience of having this new equipment in the property? Please consider aspects such as how well it works and how much space it takes up.

	Very satisfied	Fairly satisfied	Neither satisfied nor dissatisfied	Fairly dissatisfied	Very dissatisfied	Don’ t know
Underfloor heating instead of radiators						
Larger radiators						
A hot water tank when previously there wasn’t one						
A larger hot water tank						

QE03

ASK ALL.

Taking everything into account, how satisfied or dissatisfied are you with [THE LCH SYSTEM INSTALLED] overall?

CODE ONE.

Very satisfied
Fairly satisfied
Neither satisfied nor dissatisfied
Fairly dissatisfied
Very dissatisfied
Too early to say
Don't know

QE04

ASK ALL.

Based on your experience to date would you recommend [A/AN LCH SYSTEM INSTALLED] to friends?

CODE ONE.

Definitely would
Probably would
Probably would not
Definitely would not
Already recommended

Too early to say
Don’t know

QE05

ASK ALL.

Have you shown anyone, such as neighbours, family or friends, [THE LCH SYSTEM INSTALLED]?

CODE ONE.

Yes
No
Don’t know

QE05a

ASK ALL THAT SELECTED “YES” AT QE04.

Amongst the people you showed [THE LCH SYSTEM INSTALLED] to, was their response positive or negative?

Most were positive
Equally positive and negative
Most were negative
Don’t know

QE05b

ASK ALL THAT SELECTED “YES” AT QE04, EXCEPT IF SELECTED DON’T KNOW AT QE05a. NOTE: QUESTION TO BE SKIPPABLE.

In a sentence or two, please describe what they liked and/or disliked about [THE LCH SYSTEM INSTALLED]. This question is skippable.

OPEN TEXT CODE. UNPROMPTED.

Don’t know

Part F: Summing up

QF01

ASK ALL. NOTE: QUESTION TO BE SKIPPABLE.

On reflection, is there anything you wished you'd known about [A/AN LCH SYSTEM INSTALLED] and/or the Boiler Upgrade Scheme before you had one installed in the property? This question is skippable.

OPEN TEXT CODE. UNPROMPTED.

No

Installer Survey Questionnaire (Wave 2)

Note: there were some changes to the questionnaire between survey waves, including:

- The addition of new questions, reflecting new research topics of interest.
- The addition of new response options, reflecting new research topics of interest and where open text responses to the preceding survey wave indicated that new response options were needed.
- Changes to the wording of existing response options, for example to increase clarity.

The questionnaire that follows is the version that was used in the Wave 2 survey.

QA01

ASK ALL

As of right now, what is the number of employees for the business? Please include all part- and full-time workers paid from your payroll, including those temporarily absent but still being paid. This is everybody, not just people who work in the heat pump or biomass boiler sector. Please exclude self-employed workers and subcontractors.

ONLY READ OUT IF PROMPT IS REQUIRED. INTERVIEWER TO CODE TO BELOW BANDINGS.

1 (sole trader)
2-9 people
10-49 people
50-249 people
250+ people
Don’t know [DO NOT READ OUT]
Prefer not to say [DO NOT READ OUT]

QR01a

ASK ALL

Has your business submitted any applications under the Boiler Upgrade Scheme?

Yes
No
Don’t know [DO NOT READ OUT]
Prefer not to say [DO NOT READ OUT]

QR01b

ASK ALL

Has your business completed any installations under the Boiler Upgrade Scheme?

Yes
No
Don't know [DO NOT READ OUT]
Prefer not to say [DO NOT READ OUT]

QA02

ASK ALL

Before your business's involvement with the Boiler Upgrade Scheme, how many full time equivalent staff employed by your business were involved in the delivery of [LCH HEATING SYSTEM(S) INSTALLED]? Please exclude anyone who is a subcontractor, i.e. who isn't directly employed by your business. We're going to break this down by off-site work and on-site work.

READ OUT EMPLOYMENT CATEGORIES.

IF ASKED, GIVE THE FOLLOWING INFORMATION ABOUT WHAT THESE CATEGORIES CONSIST OF:

Off-site work, including marketing, administration and management, includes:

Marketing, promotion and recruitment of customers: Marketing, publicity and promotion of your business and its services, including general and targeted activities. Fielding enquiries and responding to questions about these heating systems, prior to undertaking a home survey.
Administration and management: Administration of the whole process, including booking appointments, completing paperwork and meeting compliance requirements (e.g. MCS). Agreeing contracts. Senior management oversight of the process.

On-site work, including survey, design and installation, includes

Home surveys, system design and quotation: Remote and in-person surveys, including heat loss calculations. Design of heat pump systems including discussions with property-owners. Generation, communication and discussion of quotes.
Installation: Pre-installation briefing. Removal of the existing heating system. Installation of the new heating system, including any supporting works such as replacement of radiators, installation of a water tank, groundworks, and any other works inside the property. Handover of the system including provision of documentation.
Quality control and monitoring: Post-installation visits to check the quality of the installation, including any remediation works. If done, monitoring of system performance based on any monitoring equipment installed. Responding to any complaints.

No of FTE staff

Employed, off-site work including marketing, administration and management	[NUMERIC]	Don't know
Employed, on-site work including survey, design and installation	[NUMERIC]	Don't know

QA03

ASK ALL

And now, how many full-time equivalent staff are currently involved in the delivery of [LCH HEATING SYSTEM(S) INSTALLED]? Again, please exclude anyone who is a subcontractor, i.e. who isn't directly employed by your business. We're going to break this down by off-site work and on-site work.

READ OUT EMPLOYMENT CATEGORIES.

IF ASKED, GIVE THE FOLLOWING INFORMATION ABOUT WHAT THESE CATEGORIES CONSIST OF:

Off-site work, including marketing, administration and management, includes:

> Marketing, promotion and recruitment of customers: Marketing, publicity and promotion of your business and its services, including general and targeted activities. Fielding enquiries and responding to questions about these heating systems, prior to undertaking a home survey.
> Administration and management: Administration of the whole process, including booking appointments, completing paperwork and meeting compliance requirements (e.g. MCS). Agreeing contracts. Senior management oversight of the process.

On-site work, including survey, design and installation , includes

> Home surveys, system design and quotation: Remote and in-person surveys, including heat loss calculations. Design of heat pump systems including discussions with property-owners. Generation, communication and discussion of quotes.
> Installation: Pre-installation briefing. Removal of the existing heating system. Installation of the new heating system, including any supporting works such as replacement of radiators, installation of a water tank, groundworks, and any other works inside the property. Handover of the system including provision of documentation.
> Quality control and monitoring: Post-installation visits to check the quality of the installation, including any remediation works. If done, monitoring of system performance based on any monitoring equipment installed. Responding to any complaints.

No of FTE staff

Employed, off-site work including marketing, administration and management	[NUMERIC]	Don't know
Employed, on-site work including survey, design and installation	[NUMERIC]	Don't know

SCRIPT TO AUTO CHECK THAT TOTAL ANSWER GIVEN AT QA03 DOES NOT EXCEED THAT GIVEN AT QA01.

QA04

ASK ALL.

Does your business currently install [LCH HEATING SYSTEM(S) INSTALLED] outside of the Boiler Upgrade Scheme? IF NECESSARY: By this, we mean does it undertake installations that are not part-funded by a Boiler Upgrade Scheme grant?

DO NOT READ OUT. CODE ONE.

Yes
No
Don't know

QA05a

ASK ALL.

Does your business use subcontractors to deliver [LCH HEATING SYSTEM(S) INSTALLED] installations under the Boiler Upgrade Scheme?

Yes
No [SKIP TO QA06]
Don't know [DO NOT READ OUT SKIP TO QA06]
Prefer not to say [DO NOT READ OUT SKIP TO QA06]

QA05

ASK IF QA05 IS YES.

Thinking about these subcontractors that you have worked with to deliver [LCH HEATING SYSTEM(S) INSTALLED] under the Boiler Upgrade Scheme, do they have MCS accreditation? Please only consider subcontractors who are directly involved in the elements of the installation that would be covered by MCS standards.

READ OUT. CODE ONE ONLY.

All do
Most do
Some do
None do
Don't know [DO NOT READ OUT]
Prefer not to say [DO NOT READ OUT]

QA06

ASK ALL.

In the 12 months before your business registered with the Boiler Upgrade Scheme, approximately how many [LCH HEATING SYSTEM(S) INSTALLED] units did your business install in England and Wales?

ONLY READ OUT IF PROMPT IS REQUIRED. INTERVIEWER TO CODE TO BELOW BANDINGS.

New business [DO NOT READ OUT]
0
1-5
6-10
11-20
21-30
31-50
50+
Don't know [DO NOT READ OUT]
Prefer not to say [DO NOT READ OUT]

QA07

ASK ALL.

Approximately what proportion of your business's revenue is from [LCH HEATING SYSTEM(S) INSTALLED] installations?

READ OUT. CODE ONE OPTION PER LINE. INTERVIEWER TO CODE TO BELOW BANDINGS

	% of revenue	Don't know [DO NOT READ OUT]	Prefer not to say [DO NOT READ OUT]
Before you started working on Boiler Upgrade Scheme installations	0% 1-25% 26-50% 51-75% 75-99% 100%		
Since you started working on Boiler Upgrade Scheme installations	0% 1-25% 26-50% 51-75% 75-99% 100%		

Part B: Joining the Boiler Upgrade Scheme

QB01

ASK ALL.

Did you sign up your business with the Boiler Upgrade Scheme so that you could…?

READ OUT EACH OPTION. ONE CODE ONLY

Do more [LCH HEATING SYSTEM(S) INSTALLED] installations
Sustain your existing level of [LCH HEATING SYSTEM(S) INSTALLED] installations
Start doing [LCH HEATING SYSTEM(S) INSTALLED] installations
Another reason [WRITE IN]
Don't know [EXCLUSIVE] [DO NOT READ OUT]
Prefer not to say [EXCLUSIVE] [DO NOT READ OUT]

Part C: Your Experience of the Boiler Upgrade Scheme

We are going to ask you some questions about your experiences of engaging with consumers as part of the Boiler Upgrade Scheme.

QC02

ASK ALL.

Do you believe there is anything that limits demand for Boiler Upgrade Scheme installations amongst consumers?

DO NOT READ OUT. CODE ONE.

Yes
No
Don't know
Prefer not to say

QC02a

ASK ALL THAT SAID YES TO BARRIERS.

What do you think limits demand amongst consumers?

READ OUT. CODE ALL THAT APPLY. RANDOMISE.

Lack of awareness of [LCH HEATING SYSTEM(S) INSTALLED]
Negative perceptions about [LCH HEATING SYSTEM(S) INSTALLED]
Lack of understanding of the benefits of [LCH HEATING SYSTEM(S) INSTALLED]
Lack of awareness of the Boiler Upgrade Scheme
Negative perceptions about the overall cost of a [LCH HEATING SYSTEM(S) INSTALLED]
Lack of access to funds to top up the Boiler Upgrade Scheme grant (i.e. to afford the rest of the upfront cost)

Concerns about [LCH HEATING SYSTEM(S) INSTALLED] running costs
The requirement to have a valid EPC
Closure of other Government schemes (e.g. the Renewable Heating Incentive, the Green Homes Grant Voucher Scheme)
The value of the Boiler Upgrade Scheme grant
The perceived suitability of properties for [LCH HEATING SYSTEM(S) INSTALLED]
Some LCH systems (e.g. hybrid systems that use a heat pump alongside a fossil fuel system) not eligible under the Boiler Upgrade Scheme
Challenges consumers face finding installers to do the work
Something else [WRITE IN]
Don't know [EXCLUSIVE] [DO NOT READ OUT]
Prefer not to say [EXCLUSIVE] [DO NOT READ OUT]

QC04

ASK ALL.

The government ran a nationwide marketing campaign between October 2023 and March 2024 called Welcome Home to Energy Efficiency which promoted the Boiler Upgrade Scheme. Are you aware of this campaign?

DO NOT READ OUT. CODE ONE.

Yes
No
Don't know [DO NOT READ OUT]
Prefer not to say [DO NOT READ OUT]

QC04a

ASK ALL THAT WERE AWARE OF THE CAMPAIGN.

Do you think that this campaign led to any change in the number of enquiries that you received from customers?

READ OUT. CODE ONE.

More enquiries
No change
Fewer enquiries
Don't know [DO NOT READ OUT]
Prefer not to say [DO NOT READ OUT]

QC04b

ASK IF LED TO MORE ENQUIRIES.

And have these enquiries led to more booked installations?

READ OUT. CODE ALL THAT APPLY.

Yes, through the Boiler Upgrade Scheme
Yes, not through the Boiler Upgrade Scheme
No [EXCLUSIVE]
Too early to say [EXCLUSIVE]
Don't know [EXCLUSIVE] [DO NOT READ OUT]
Prefer not to say [EXCLUSIVE] [DO NOT READ OUT]

QC04c

ASK ALL.

Since the Boiler Upgrade Scheme launched, the Government has increased the value of the grant (for air source and ground source heat pumps) and removed the requirement for properties to have cavity wall and loft insulation installed.

Have these changes led to any change in the number of enquiries that you received from customers?

READ OUT. CODE ONE.

More enquiries
No change
Fewer enquiries
Too early to say
Don't know [DO NOT READ OUT]
Prefer not to say [DO NOT READ OUT]

QC05

ASK ALL.

Is there anything that limits the number of Boiler Upgrade Scheme installations that your business is able to do? When answering please exclude any issues relating to the scale of demand from consumers.

CODE ONE.

Yes
No
Don't know [DO NOT READ OUT]
Prefer not to say [DO NOT READ OUT]

QC05a

ASK ALL THAT INDICATED THERE WAS SOMETHING LIMITING THE NUMBER OF INSTALLS THEY DO.

What limits the number of installations that your business does under the Boiler Upgrade Scheme? Again, when answering please exclude any issues relating to the scale of demand from consumers.

READ OUT. CODE ALL THAT APPLY. RANDOMISE.

The availability of appropriate skilled staff to work on installations under the Boiler Upgrade Scheme
The availability of subcontractors to work on installations under the Boiler Upgrade Scheme
How quickly Ofgem pays vouchers once you've redeemed them
The time limit on a Boiler Upgrade Scheme voucher (e.g. 3 months for an air source heat pump voucher)
Opportunities for [LCH HEATING SYSTEM(S) INSTALLED] installations outside of the Boiler Upgrade Scheme
The availability of materials and equipment (e.g. heat pumps, radiators)
Opportunities for other installation work (e.g. solar thermal installations, gas or oil boiler installations)
Getting approvals from a Distribution Network Operator, or DNO
Planning law restrictions
Time spent carrying out administrative and compliance tasks (e.g. MCS requirements)
Competition from other installers for work
Something else [WRITE IN]
Don't know [EXCLUSIVE] [DO NOT READ OUT]
Prefer not to say [EXCLUSIVE] [DO NOT READ OUT]

QC05b

ASK ALL THAT SELECTED GETTING APPROVALS FROM A DISTRIBUTION NETWORK OPERATOR, OR DNO AT QC05A

What are the issues you have encountered with DNO approvals, including any works that need to be done to get approval?

READ OUT. CODE ALL THAT APPLY. RANDOMISE.

Delays getting approval
Delays unlooping electric connections
Delays with fuse upgrades
DNOs charging for fuse upgrades
DNOs charging for connection unlooping
Poor communication from DNOs
Something else [WRITE IN]
Don't know [EXCLUSIVE] [DO NOT READ OUT]
Prefer not to say [EXCLUSIVE] [DO NOT READ OUT]

QC06

ASK ALL.

Thinking about a usual [LCH HEATING SYSTEM(S) INSTALLED] installation, does your business typically charge customers more, less or the same for an installation under the Boiler Upgrade Scheme, compared with an installation quoted and delivered to the same customer outside of the scheme? I would like to remind you of the confidential nature of the survey. Your answers will not be identifiable to you.

READ OUT. CODE ONE. REVERSE ORDER RANDOMLY.

A lot more

A little more
About the same
A little less
A lot less
Only deliver installations as part of the scheme
Don't know [DO NOT READ OUT]
Prefer not to say [DO NOT READ OUT]

QC07

ASK ALL EXCEPT THOSE THAT CONFIRMED THEY HAVEN'T SUBMITTED ANY APPLICATIONS AT QR01A OR DONE ANY BUS INSTALLATIONS AT QR01B.

Has your business ever experienced cashflow problems caused by lags between doing an installation and getting paid the Boiler Upgrade Scheme voucher?

READ OUT. CODE ONE.

Yes
No
Don't know [DO NOT READ OUT]
Prefer not to say [DO NOT READ OUT]

QC07a

ASK ALL THAT SAID YES AT QC07.

Do you do any of the following to minimise cashflow problems?

READ OUT. CODE ALL THAT APPLY. RANDOMISE.

Charge customers the full cost of the installation and refund them the value of the Boiler Upgrade Scheme grant once you have been paid the grant
Require customers to pay a large upfront deposit
Space out installations
Decline some work
Something else [WRITE IN]
Don't know [DO NOT READ OUT]
Prefer not to say [DO NOT READ OUT]

Part D: Your experience of Ofgem's BUS systems

QD01

ASK ALL.

Overall, how satisfied or dissatisfied are you with Ofgem's administration of the Boiler Upgrade Scheme?

READ OUT. CODE ONE.

Very satisfied

Fairly Satisfied
Neither satisfied nor dissatisfied
Fairly Dissatisfied
Very dissatisfied
Haven't experienced it yet
Don't know [DO NOT READ OUT]
Prefer not to say [DO NOT READ OUT]

QD02

ASK ALL.

Thinking about your experience of the Boiler Upgrade Scheme, how satisfied or dissatisfied are you with the following?

READ OUT. CODE ONE ONLY PER LINE. RANDOMISE.

	Very satisfied	Satisfied	Neither satisfied nor dissatisfied	Dissatisfied	Very dissatisfied	Haven't experienced it yet	Don't know	Prefer not to say
The installer guidance issued by Ofgem								
Registering with Ofgem to be a BUS installer								
The system for applying for BUS vouchers								
The system for applying to redeem BUS vouchers								
How quickly Ofgem pays you after you submit your redemption applications								
The online portal for tracking voucher status								
Ofgem's customer service and support								
Ofgem's communications on any changes or updates to the scheme?								

QD03

ASK ALL THAT HAVE SUBMITTED A VOUCHER APPLICATION.

On average, per voucher, how much time do you estimate your business spends on administration under the Boiler Upgrade Scheme?

Please include all the time spent filling in applications, responding to any queries from Ofgem, and any other administration that is unique to the Boiler Upgrade Scheme - i.e. not what you would normally do as part of the installation of a [LCH HEATING SYSTEM(S) INSTALLED]. Please exclude any administrative tasks associated with the MCS, other competent person schemes, or consumer codes. If your business had to get MCS certification to participate in the Boiler Upgrade Scheme please exclude the time this took from your estimate.

ENTER TEXT. COLLECT IN HOURS

Open text
Don't know [DO NOT READ OUT]
Prefer not to say [DO NOT READ OUT]

QD05

ASK ALL THAT HAVE SUBMITTED A VOUCHER APPLICATION.

Do you pass on any additional costs associated with delivering [LCH HEATING SYSTEM(S) INSTALLED] installations under the Boiler Upgrade Scheme when quoting for an installation?

READ OUT. CODE ONE.

No – we don't experience any additional costs
No – we experience additional costs but don't pass them on
Yes – we pass them on
Don't know [DO NOT READ OUT]
Prefer not to say [DO NOT READ OUT]

Part E: The impacts of participating in the Boiler Upgrade Scheme

QE01

ASK ALL.

Have you made any of the following changes to your market offer because of the Boiler Upgrade Scheme?

READ OUT. CODE ALL THAT APPLY. RANDOMISE.

Serve a larger geographical area
Serve a wider range of property types (e.g. detached, semi-detached properties)
Serve a wider range of property ages (e.g. Victorian properties)
Serve a wider range of tenure types (e.g. homeowners, private landlords)
Added new specialisms (e.g. work in conservation areas, Listed buildings)

Started installing insulation
Started installing other renewable energy products (e.g. solar panels)
Started offering finance to customers (e.g. loans)
Another change [WRITE IN]
No changes [EXCLUSIVE]
Don’t know [EXCLUSIVE] [DO NOT READ OUT]
Prefer not to say [EXCLUSIVE] [DO NOT READ OUT]

Part F: Anything else

QF01

ASK ALL.

Is there anything else you would like to say about your experience of the Boiler Upgrade Scheme?

OPEN TEXT CODE. UNPROMPTED.

No

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