Department of Energy & Climate Change

Evaluation of the Domestic Renewable Heat Incentive:

Interim Report from Waves 1–4 of the domestic RHI census of accredited applicants

November 2014

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Any enquiries regarding this publication should be sent to us at [insert contact for department].

Contents

Executive summary

Background and Context

- The Renewable Heat Incentive (RHI) is a long-term financial support programme that provides incentives to install renewable heating in place of fossil fuels. The scheme is designed to bridge the gap between the cost of fossil fuel heat sources and renewable heat alternatives.
- The RHI is available to England, Wales and Scotland[1], and includes separate schemes for non-domestic and domestic customers.
- The domestic RHI opened on 9 April 2014 and is targeted at, but not limited to, homes off the gas grid.
- The scheme is available to homeowners, private and social landlords and people who build their own homes (other new build properties are not eligible).
- It supports air to water heat pumps; biomass only boilers and biomass pellet stoves with back boilers; ground and water source heat pumps; solar water heating for domestic hot water using evacuated tube and flat plate solar thermal.
- The domestic RHI follows an earlier scheme supporting domestic renewable heat, the Renewable Heat Premium Payment (RHPP). The RHPP made one-off payments to householders to help them buy renewable heating technologies – solar thermal panels, heat pumps and biomass boilers. The RHPP scheme ran from August 2011 until 31 March 2014.
- The non-domestic RHI launched in November 2011. Department of Energy and Climate Change (DECC) are carrying out evaluation research into both schemes, and have published interim findings from research into the non-domestic RHI. These are available from: https://www.gov.uk/government/publications/evaluation-of-the-renewable-heat-incentive-interim-report-the-non-domestic-scheme

Research objectives and method

- The purpose of the domestic RHI applicant census was to better understand participants' motivations for, and experiences of, installing a renewable heating technology, and applying to the RHI Scheme.
- The domestic census was part of a wider evaluation DECC are carrying out of the RHI, which includes qualitative and quantitative research with domestic and non-domestic customers, and the renewable heat supply chain.

- [1] A similar scheme is available in Northern Ireland.

- The applicant census was administered as an online questionnaire, sent out on a monthly basis to all owner-occupier first-time applicants who were accredited onto the scheme in the previous month.
- Data presented in this report reflect responses from owner-occupiers accredited onto the scheme between May and August 2014 and are representative of all applications accredited until then (7,051[2]).
- Approximately 50 per cent of RHI participants responded to the census.

Installing renewable heating technologies

- Financial considerations and environmental concerns were the most common drivers for switching to a renewable heat source.
- The most common funding source for renewable heating systems was the use of savings (83 per cent).
- RHI participants identified renewable heating installers through a variety of ways, most commonly by word of mouth or recommendations (36 per cent), through web searches (23 per cent) and via websites with direct installer contact (17 per cent).
- Two thirds of RHI participants (64 per cent) had not experienced any difficulties in installing their technology, with the remaining 36 per cent reporting at least one issue.
- Nine in ten (89 per cent) of RHI participants were very or fairly satisfied with their renewable heating technology.

Participants' experiences of the domestic RHI

- Participants were most likely to find out about the RHI from an installer (61 per cent).
- Three fifths (61 per cent) of RHI participants reported no difficulties in meeting the RHI requirements. For those who did (39 per cent), the most common difficulty experienced was the lack of clarity regarding the RHI application process (16 per cent).
- Three quarters (75 per cent) of RHI participants were satisfied or very satisfied with the application process, 14 per cent were either dissatisfied or very dissatisfied. The majority of respondents (82 per cent) found the application form very or fairly easy.
- 71 per cent of RHI participants reported no problems with their application. Of those who did experience a problem, the most common was having their initial application rejected (11 per cent of participants)

[2] Monthly performance statistics for the Renewable Heat Statistics are published by DECC at: https://www.gov.uk/government/collections/renewable-heat-incentive-renewable-heat-premium-payment-statistics

Glossary

- ASHP – Air Source Heat Pump
- DECC – Department of Energy and Climate Change
- GSHP – Ground Source Heat Pump
- Ofgem – Office of Gas and Electricity Markets
- RHI – Renewable Heat Incentive
- RHPP – Renewable Heat Premium Payment
- RHT – Renewable heating technology
- Accredited applicants – people who successfully applied to the RHI scheme and had their installation accredited
- RHI participants – questionnaire respondents who are accredited applicants and participated in the RHI census

1. Summary of RHI accreditations and research participants

This report provides headline findings from the first four waves of the domestic RHI census. As part of the domestic RHI evaluation, an online questionnaire is sent each month to all new owner-occupier applicants who received accreditation in the previous month. Where applicants were accredited for multiple installations, they are asked to complete a questionnaire for one renewable heating technology selected at random.

This report is based on 3,056 responses, from respondents with applications accredited between May and August 2014. The average response rate across waves is 50 per cent (see table 1.1). Results have been weighted to reflect the accredited applications, accounting for non-response and the sampling of multiple applications from the same applicant. More detail on the methodology and the weighting is provided in the Technical Annex published alongside this report: https://www.gov.uk/government/publications/interim-report-from-waves-1-4-of-the-domestic-rhi-census-of-accredited-applicants

Table 1.1 Response rates for the first four waves of the domestic RHI application census

Wave	Month	Accreditations[3]	Scheme applicants invited to take part in census[4]	Valid responses[5]	Response rate
Pilot	April 2014	432	N/A pilot data		
1	May 2014	731	689	328	48%
2	June 2014	1,042	956	444	46%
3	July 2014	2,508	2,289	1,228	54%
4	August 2014	2,338	2,152	1,056	49%
Total		**7,051[6]**	**6,086**	**3,056**	**50%**

[3] The domestic RHI is open to private and social landlords, and owner-occupiers. This census considers only accreditations to owner-occupiers. Some accreditations will be to the same applicant, for a different installation.

[4] Applicants that did not supply an email address in the application (124) are not invited to complete the questionnaire. Applicants accredited to the scheme in April 2014 (432) were used for a pilot of the survey and are not included in the analysis reported here.

[5] A survey was classified as a valid response if completed up to the question *"Did you face any of the following difficulties in meeting the requirements of the Renewable Heat Incentive (RHI) scheme?" A complete response to this point includes 54 per cent of the questionnaire (this figure may change slightly due to routing).*

[6] This number is higher than the count published by DECC in the Official Statistics releases (7,046) due to 5 accreditations that have been subsequently withdrawn.

In the report we present breakdowns for the four technologies currently eligible for RHI funding:

- Air source heat pumps (ASHPs)
- Biomass boilers
- Ground source heat pumps (GSHPs), including water-source heat pumps, and
- Solar thermal installations

Table 1.2 shows the number of applications for each technology included in the research, along with the response rate. There was little deviation from the overall response rate by technology.

Table 1.2 Response rates for the first four waves of the domestic RHI application census (by technology type)

Technology	Accreditations	Scheme applicants invited to take part in census	Valid responses	Response rate
Air source heat pump	2,422	2,125	1,050	49%
Biomass boiler	1,619	1,423	696	49%
Ground source heat pump	1,070	978	508	52%
Solar thermal	1,940	1,560	802	51%
Total	**7,051**	**6,086**	**3,056**	**50%**

We also make reference to legacy and new applications;

- Participants are able to apply for RHI for systems installed prior to the launch of the scheme. These are called legacy applications and include installations commissioned between 15 July 2009 and 9 April 2014 (the domestic RHI scheme launch date).
- New applications relate to installations commissioned on or after 9 April 2014.

Table 1.3 presents the number of each group included in the study. Legacy applications form the majority of invitations and responses to the census. The overall response rate for new applications (45 per cent) is slightly lower than that for legacy applications (51 per cent).

Table 1.3 Response rates for the first four waves of the domestic RHI application census (by application type)				
Application type	**Accreditations**	**Scheme applicants invited to take part in census**	**Valid responses**	**Response rate**
Legacy applications	6,035	5,148	2,633	51%
New applications	1,016	938	423	45%
Total	**7,051**	**6,086**	**3,056**	**50%**

Reading this report

The census included applicants with single and multiple applications to the scheme (applicants must submit a separate application for each system they install). To manage respondent burden applicants were only surveyed once, with multiple applicants only being invited to complete the survey for one, randomly selected, application.

The report presents findings at two levels; application and applicant, as appropriate to the question. Questions on awareness of the scheme, for example, are presented at the applicant level, while questions on the application process are presented at the application level. Application level data are weighted, to reflect the sampling of multiple applications. Data at the applicant level are presented unweighted, as all applicants are included in the census. Analysis of response rates by different characteristics (application type, technology, property, floor space, self-build, number of occupants, and previous system) shows little non response bias.

We carried out a rolling census (with questionnaires issued monthly), which means we could only sample from multiple applications (from an applicant) if they were made in the same month. As a result we have only captured the first application made for any applicant who submitted applications in different months. While this may be a source of bias in our data, either because these applicants have different views, or because they are more likely to submit applications for particular technologies first, we assessed the impact as minimal, given the number of affected applicants at present is small. If this number rises with subsequent waves the approach may be revised for future reports.

The data included in this report represent an emerging picture of the scheme; we have not included comparisons between waves at present as the field period covered (four months) is too short to allow this analysis. Although significance testing of findings could have been carried out, these data are drawn from a census and we feel that this analysis is not necessary for interim reporting. Overall, given the response rate is relatively high (50 per cent) and there is no evidence of any systematic non-response bias, the authors recommend that these findings (weighted and unweighted) can be interpreted with confidence.

Further detail on the sampling strategy, questionnaire design, data collection and quality assurance, and weighting are included in the technical annex.

2. Installing renewable heating technologies

- **Financial considerations** and **environmental concerns** were the most common drivers for switching to a renewable heat source.
- Over **80 per cent of RHI installations** were funded or part-funded from **savings**.
- **Two thirds of applicants** faced **no difficulties** in installing their technology.

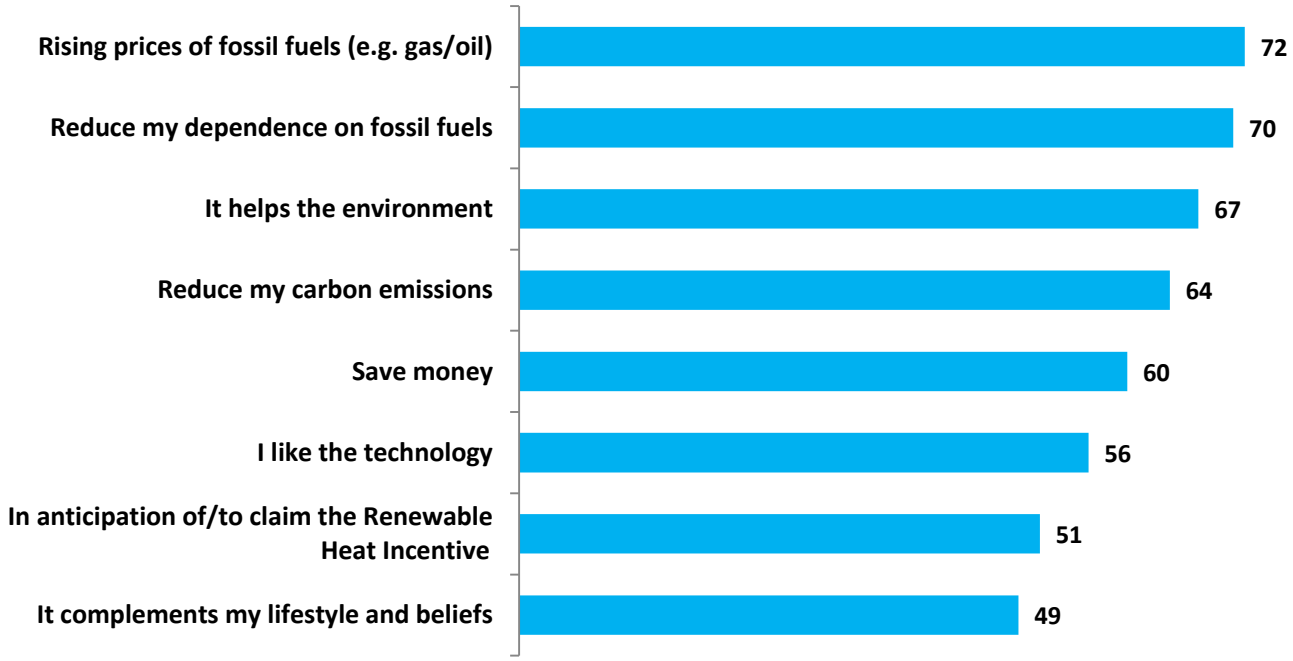
Reasons for installing renewable heating technologies

Financial considerations were the main reasons for choosing a renewable system over a non-renewable one

Financial reasons for choosing a renewable heating system included the rising price of fossil fuels (72 per cent, Figure 2.1) which was the most frequently given response. Other financial reasons included saving money and claiming the RHI, cited by 60 and 51 per cent of participants respectively.

Environmental reasons were also commonly cited, with 70 per cent of participants reporting wanting to reduce their dependence on fossil fuels, 67 per cent installing their chosen system because they believed it helps the environment, and 64 per cent citing the reduction in carbon emissions.

Figure 2.1 Reasons for installing a renewable rather than non-renewable heating system (%)



Base: All responses to the question (n=2,451); Notes: Multi-coded, weighted, categories presented where selected by at least 49 per cent of respondents, full table included in data annex.

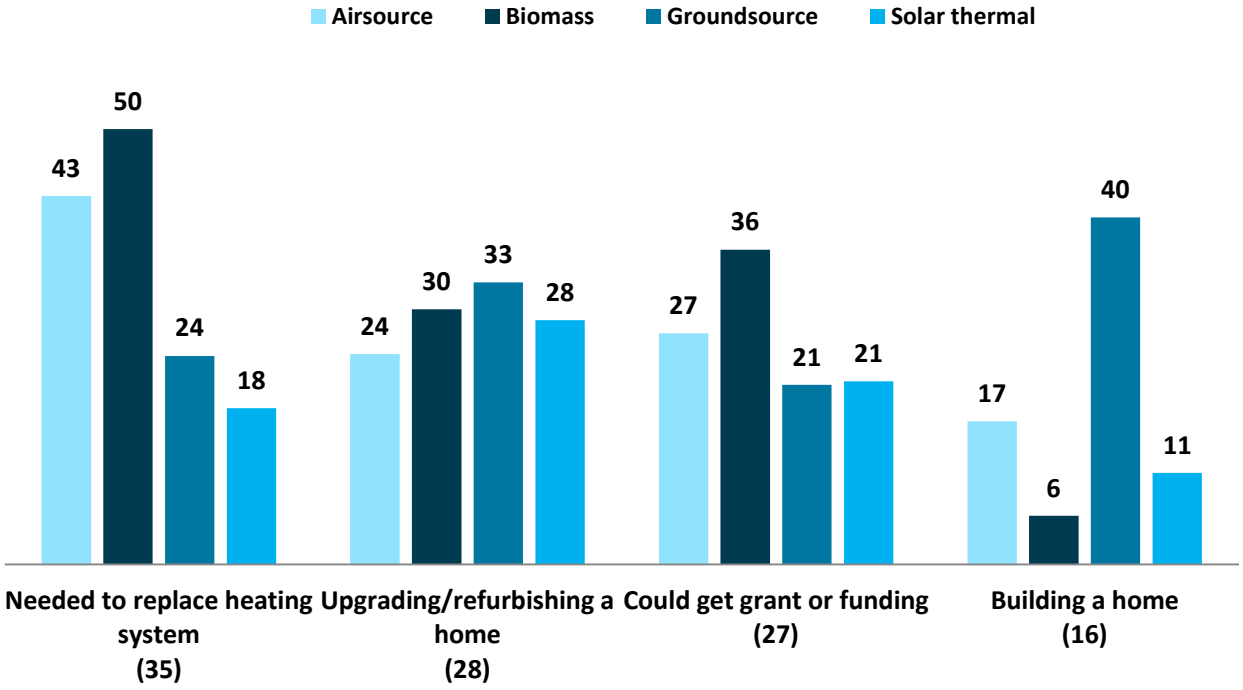
Key triggers included a need to replace a system, wider refurbishment and the availability of financial support

Figure 2.2 shows that key triggers to installing a renewable heating technology included the need to replace a heating system (35 per cent), upgrading/refurbishing a home (28 per cent) and the availability of a grant or funding (27 per cent).

It was notable that RHI participants who installed GSHPs and solar thermal were much less likely to install their technology because they need to replace their heating system. Those with biomass systems were more likely to cite the availability of a grant or funding (36 per cent compared to 27 per cent overall).

Participants with GSHPs were more likely to cite building a home as a motivation (40 per cent) for installing a system compared with the average for all technologies (16 per cent).

Figure 2.2 Motivation for installing renewable heating technologies (% by technology type)

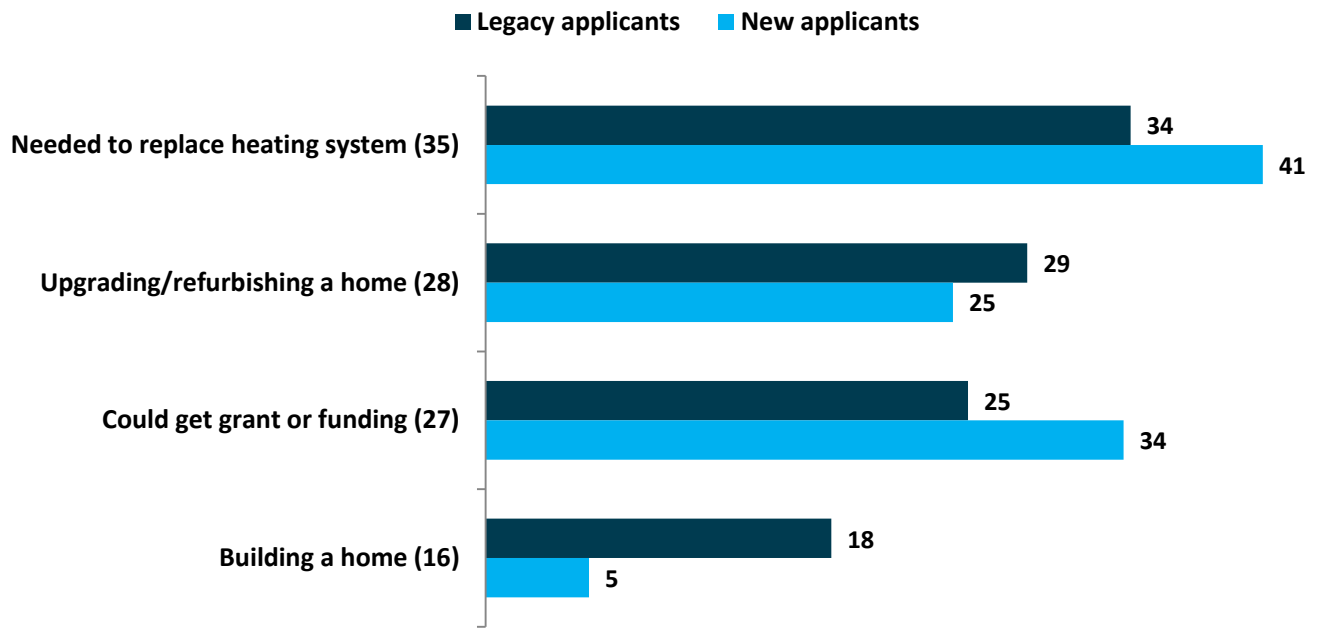


Base: All responses to the question (ASHP = 1,050, Biomass = 694, GSHP = 505, Solar Thermal = 802); Notes: Multi-coded, unweighted, categories presented where selected by at least 16 per cent of respondents (full table included in data annex) [7].

Figure 2.3 shows that new applicants were more likely than legacy applicants to cite the need to replace a heating system (41 per cent vs. 34 per cent) as a trigger for installing renewable heating technologies. More legacy applicants (18 per cent) were motivated to install a renewable heating system as a consequence of building a new home, compared to new applicants (5 per cent).

[7] This chart presents unweighted percentages as the question relates to applicants rather than applications. See Technical Report for further details.

Figure 2.3 Motivation for installing renewable heating technologies (% by application type)



Base: All respondents (Legacy=2,628, New applicants 423); Notes: Multi-coded, unweighted, categories presented selected by at least 16 per cent of respondents (full table included in data annex)[8].

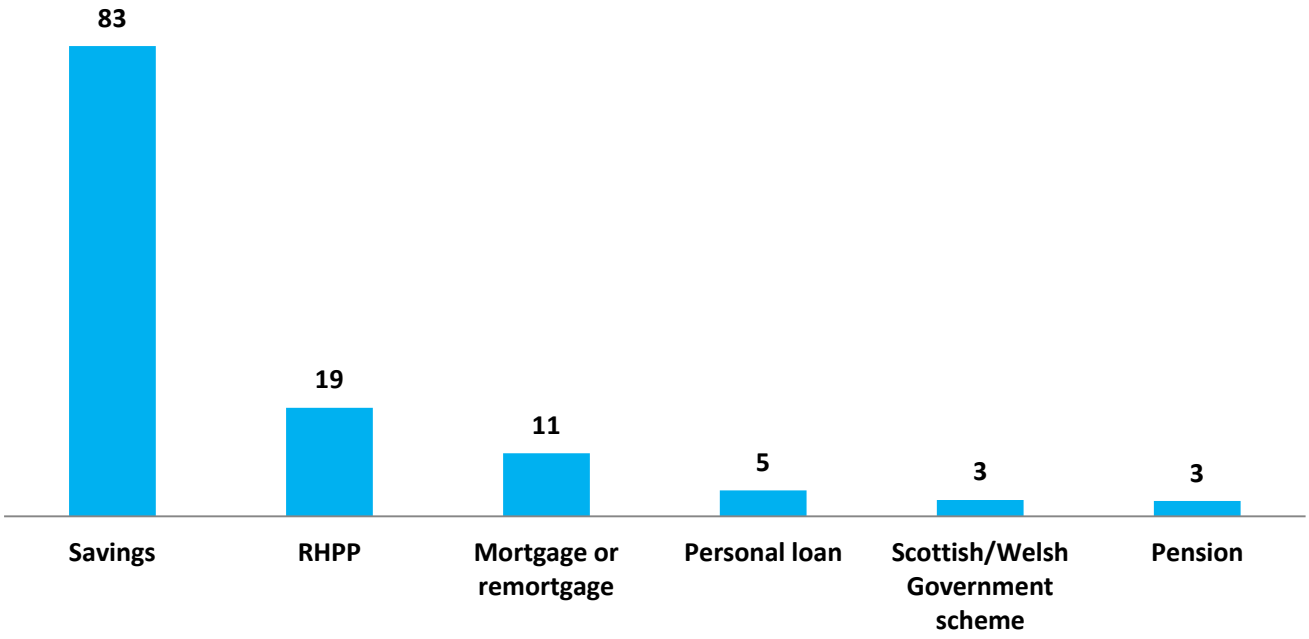
Installations were primarily funded using personal savings

Participants used a range of sources to fund their renewable heating technology installation. The majority funded all or part of their installation through savings (83 per cent, Figure 2.4). 19 per cent of participants reported the Renewable Heat Premium Payment (RHPP) as a source of funding[9], while using a mortgage or re-mortgaging a property was the third most common funding source (11 per cent).

[8] This chart presents unweighted percentages as the question relates to applicants rather than applications. See Technical Report for further details.

[9] The Renewable Heat Premium Payment (RHPP) provided an upfront grant to domestic customers installing renewable heating systems. The scheme ran from August 2011 until March 2014.

Figure 2.4: How the installation was funded (%)

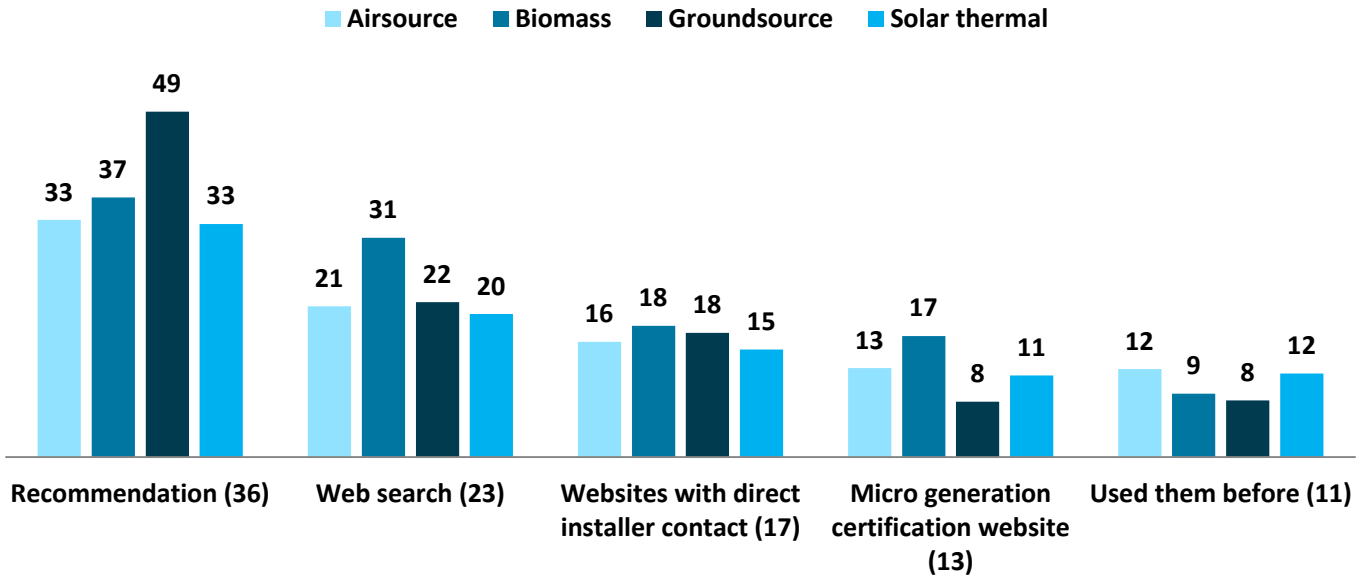


Base: All responses to the question (n=3,050); Notes: Multi-coded, weighted, categories presented selected by at least 3 per cent of respondents (full table included in data annex)

Personal recommendations and online sources were the key ways that participants identified an installer

Figure 2.5 shows a third of participants reported they identified a renewable heat installer by 'word of mouth or recommendation' (36 per cent). This was particularly true for installers of GSHPs (49 per cent). Across all the technologies, 'general web search' was the second most common way to identify an installer of renewable heat technologies (23 per cent). 'Websites that put you in direct contact with installers' were also used by around a fifth of respondents (17 per cent), followed by the Microgeneration Certification website (13 per cent).

Figure 2.5: Most common ways of identifying a renewable heating technology installer (% by technology type)



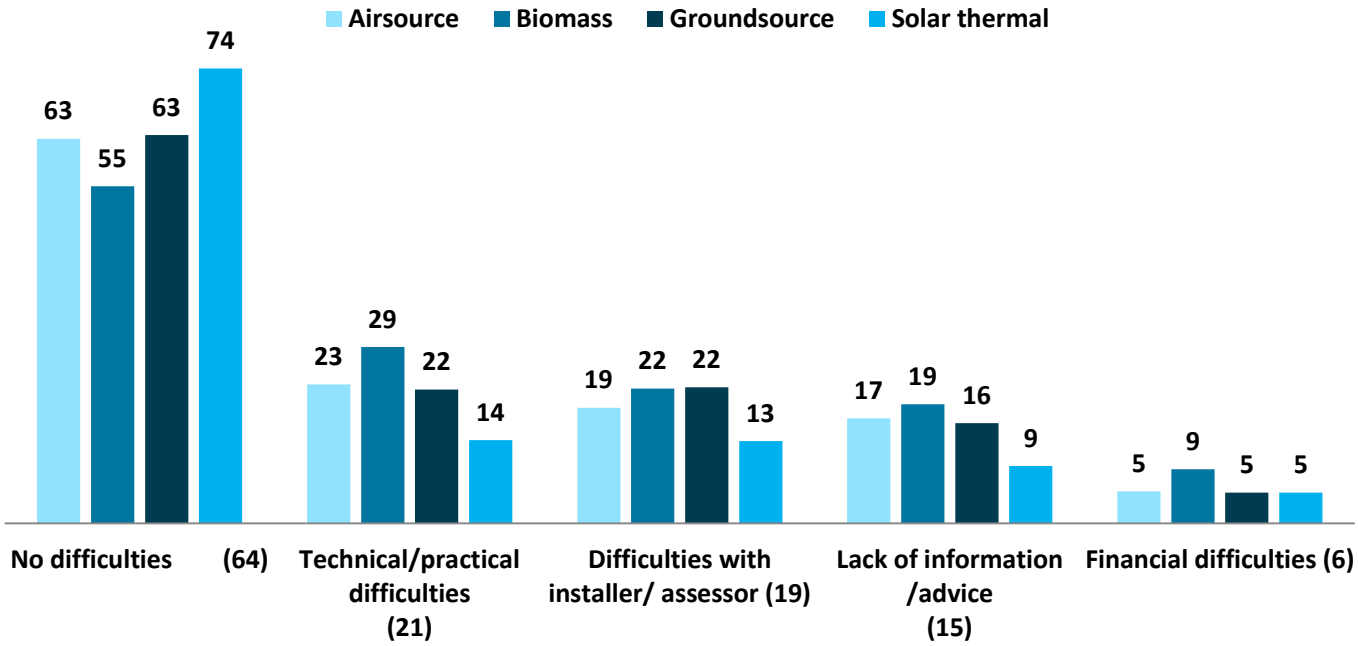
Base: All responses to the question (ASHP = 1,039, Biomass = 680, GSHP = 454, Solar thermal = 790); Notes: Multi-coded, weighted, categories presented selected by at least 11 per cent of respondents (full table included in data annex)

Almost two thirds of participants had no difficulties with the installation of their renewable heating technology

Two thirds of RHI participants (64 per cent) did not face any difficulties when installing their renewable heating technology (Figure 2.6). For the 36 per cent that did have problems, the reasons included technical and practical issues (21 per cent); difficulties with installers or assessors (19 per cent); lack of information or advice (15 per cent); and financial issues (6 per cent).

There are no substantive differences between new and legacy participants.

Figure 2.6: Difficulties faced in the overall process of installing the renewable heating technologies (% by technology type)



Base: All responses to the question (ASHP = 1,039, Biomass = 680, GSHP = 454, Solar thermal = 790); Notes: Multi-coded, weighted, categories aggregated from detailed categories (full breakdown included in data annex)

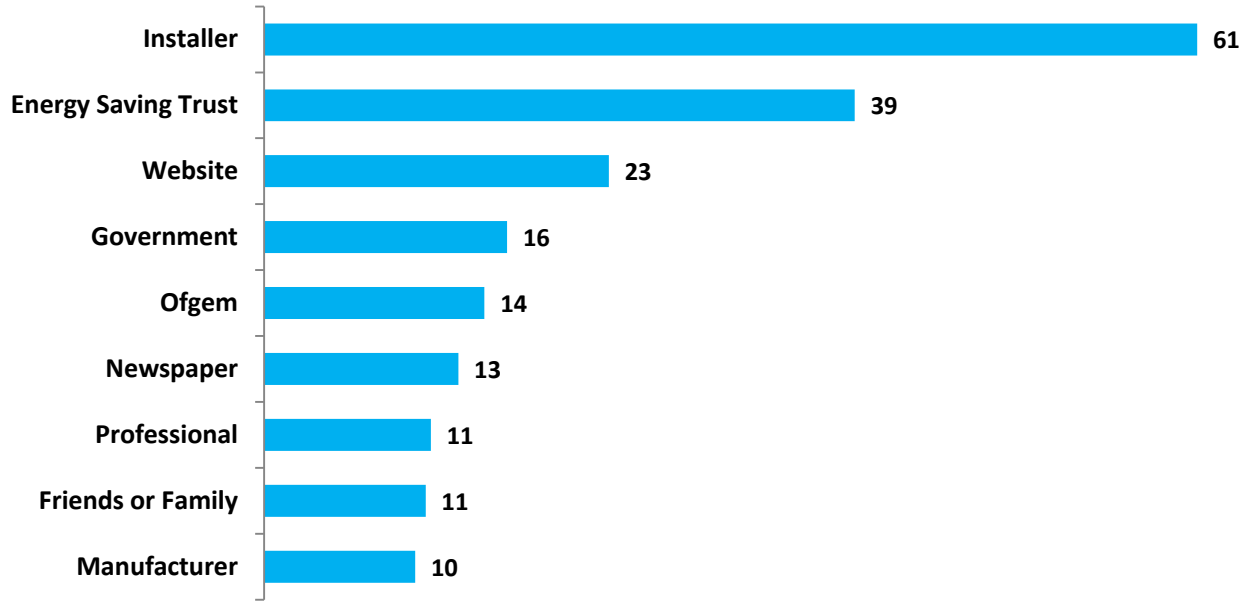
3. Finding out about, and applying to, the RHI Scheme

- **Three fifths of RHI participants** (61%) found out about the RHI Scheme from an **installer** of renewable heating systems
- **Three fifths (61 per cent) of RHI participants** had **no difficulties meeting the RHI requirements**.
- For those that had difficulties a **lack of clarity (16%)** regarding the application process was the most common problem.
- **Three quarters** of RHI participants were very or fairly **satisfied** with the **application process**
- **Nine in ten (89 per cent)** participants were **satisfied with their renewable heating technology.**

Installers are the key information source for the RHI

Most participants (61 per cent) found out about the RHI from an installer of renewable heating systems, followed by the Energy Saving Trust (39 per cent) and the internet (23 per cent). 16 per cent of RHI participants obtained information from national government (including DECC, such as guidance published on government websites, Figure 3.1).

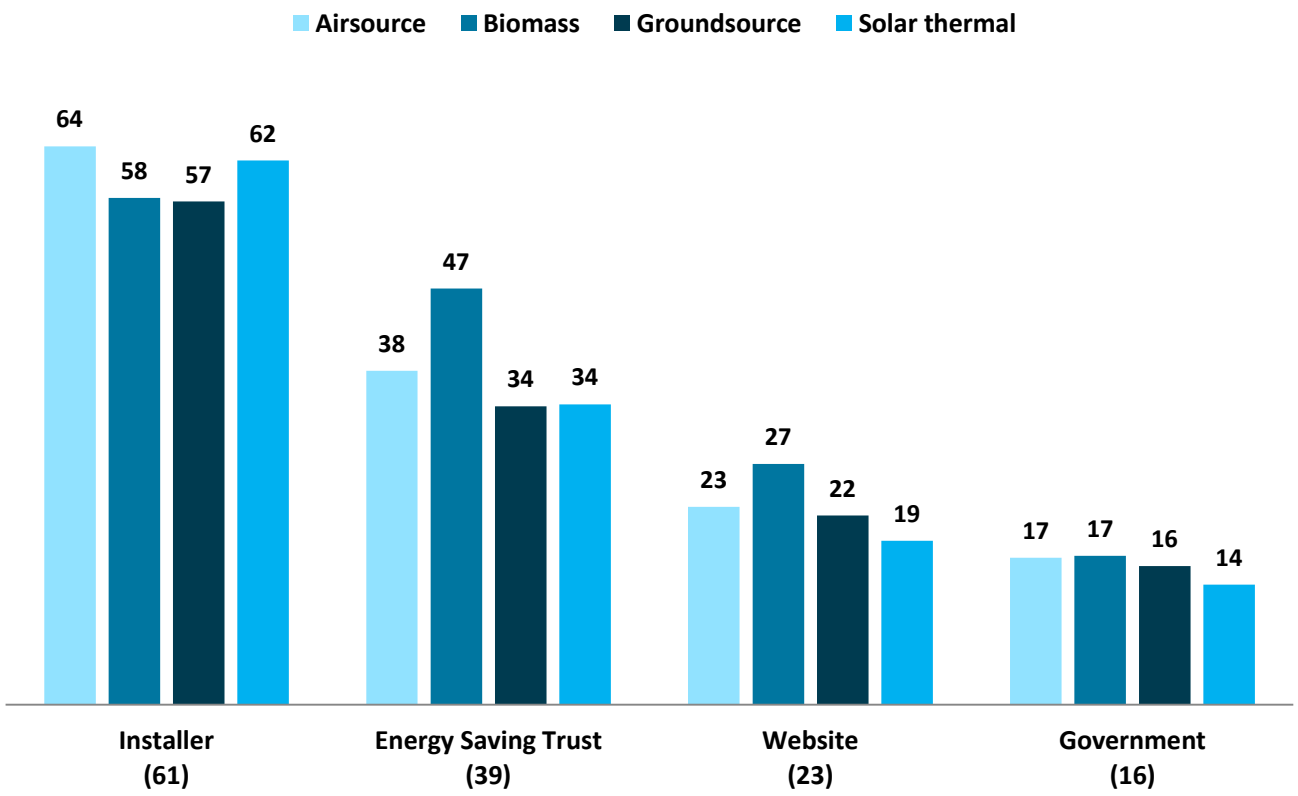
Figure 3.1: Ways in which participants found out about the RHI (%)



Base: All responses to the question (n=3,052); Notes: Multi-coded, unweighted[10], categories presented selected by at least 10 per cent of respondents (full table included in data annex)

Figure 3.2 shows the four most common ways RHI participants out found about the RHI by technology. Those who installed a biomass boiler were more likely than those who installed other renewable heating technologies, such as solar thermal, to find out about the scheme via the Energy Saving Trust (47 per cent versus 39 per cent overall). There was little variation across the other categories (Figure 3.2).

Figure 3.2 The most common ways applicants found out about the RHI (% by technology type)



Base: All responses to the question (ASHP = 1,039, Biomass = 680, GSHP = 454, Solar thermal = 790); Notes: Multi-coded, weighted, top four categories presented

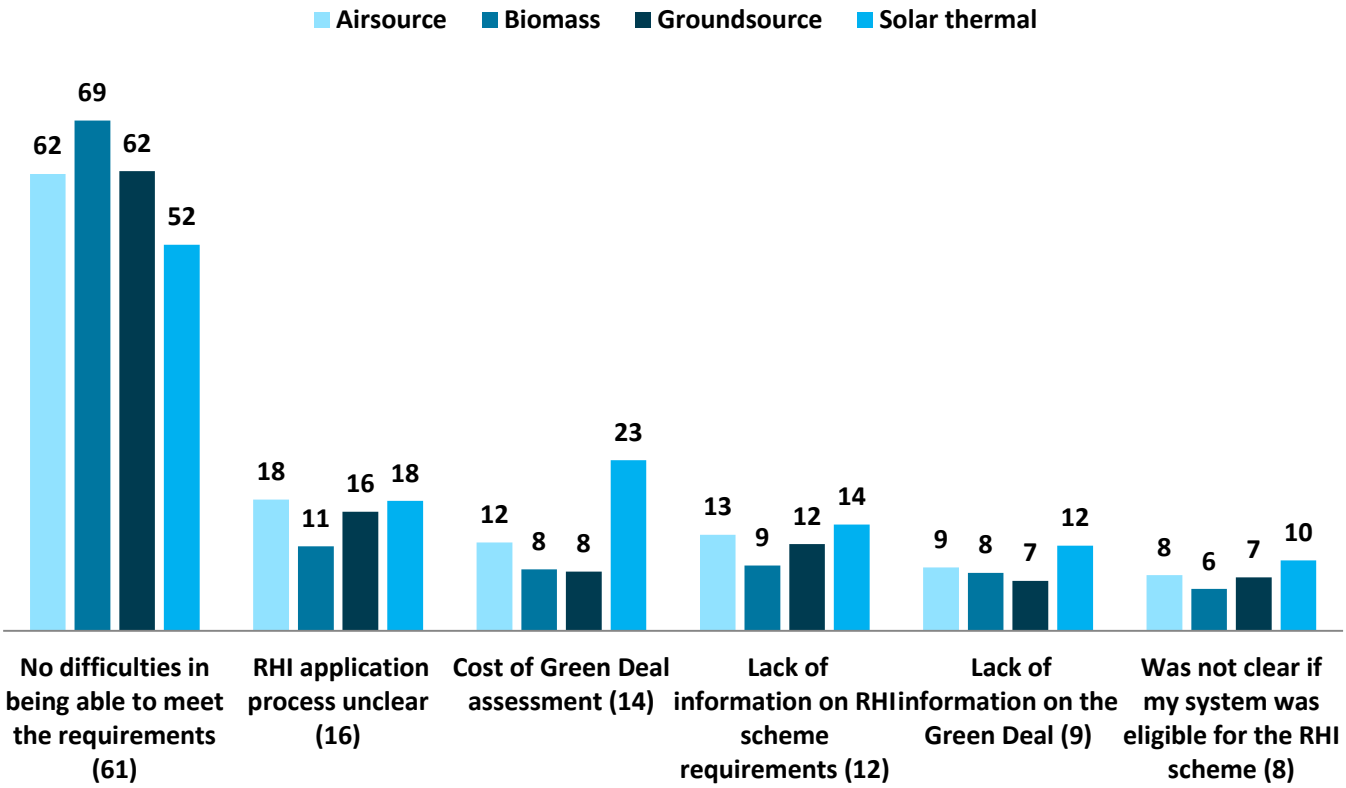
Two fifths (39%) of participants had difficulties meeting RHI requirements

61 per cent of RHI participants did not face any difficulties in meeting the RHI Scheme requirements. For the 39 per cent of participants that did, the most common difficulty was with a lack of clarity regarding the RHI application process (16 per cent of respondents), followed by the cost of the Green Deal assessment (14 per cent) and a lack of information about the RHI scheme requirements (12 per cent).

[10] This chart presents unweighted percentages as the question relates to applicants rather than applications. See Technical Report for further details.

RHI participants who installed solar thermal were more likely to cite the cost of Green Deal assessment as a problem (23 per cent) compared to participants with other technologies (12 per cent of ASHPs, and 8 per cent of both GSHPs and biomass boilers).

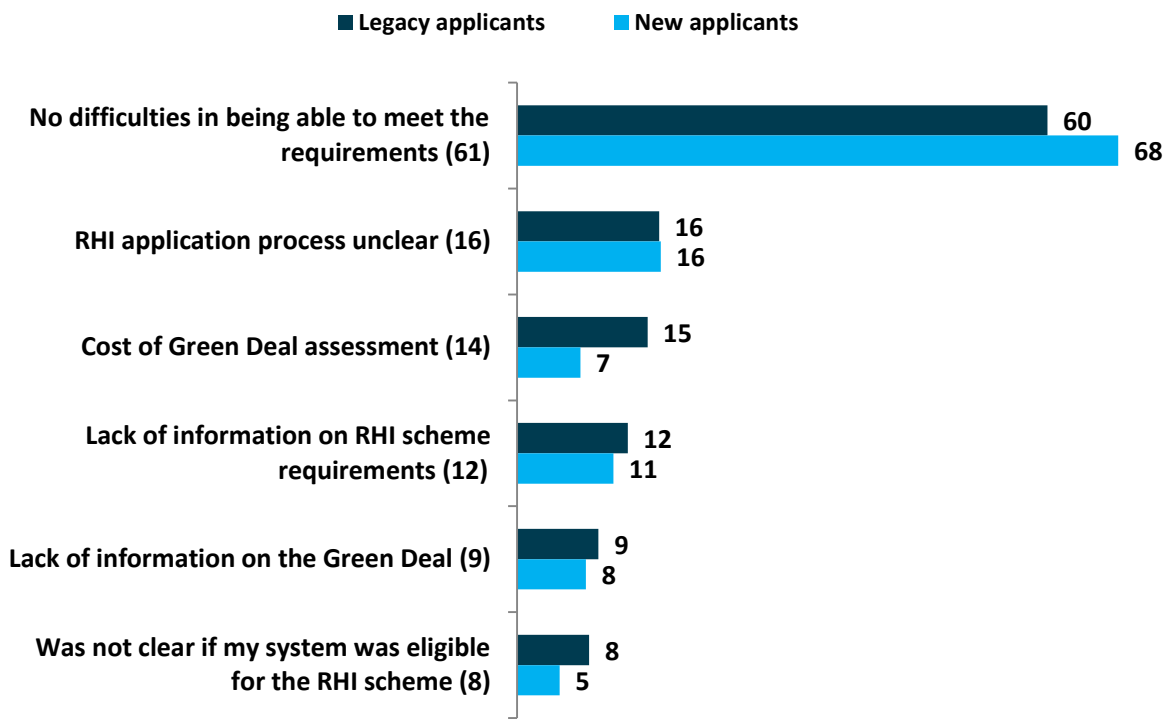
Figure 3.3 Difficulties faced in meeting the requirements of the RHI scheme (% by technology type)



Base: All responses to the question (ASHP = 1,050, Biomass = 695, GSHP = 505, Solar thermal = 802); Notes: Multi-coded, weighted, categories presented selected by at least 8 per cent of respondents (full table included in data annex)

More new applicants (68 per cent) experienced no problems than legacy applicants (60 per cent). The cost of the Green Deal Assessment was cited by 15 per cent of legacy applicants as a difficulty, compared to 7 per cent of new applicants (Figure 3.4).

Figure 3.4: Difficulties faced in meeting the requirements of the RHI scheme (% by application type)



Base: All responses to the question (Legacy = 2,629, New = 423); Notes: Multi-coded, weighted, categories presented selected by at least 8 per cent of respondents (full table included in data annex)

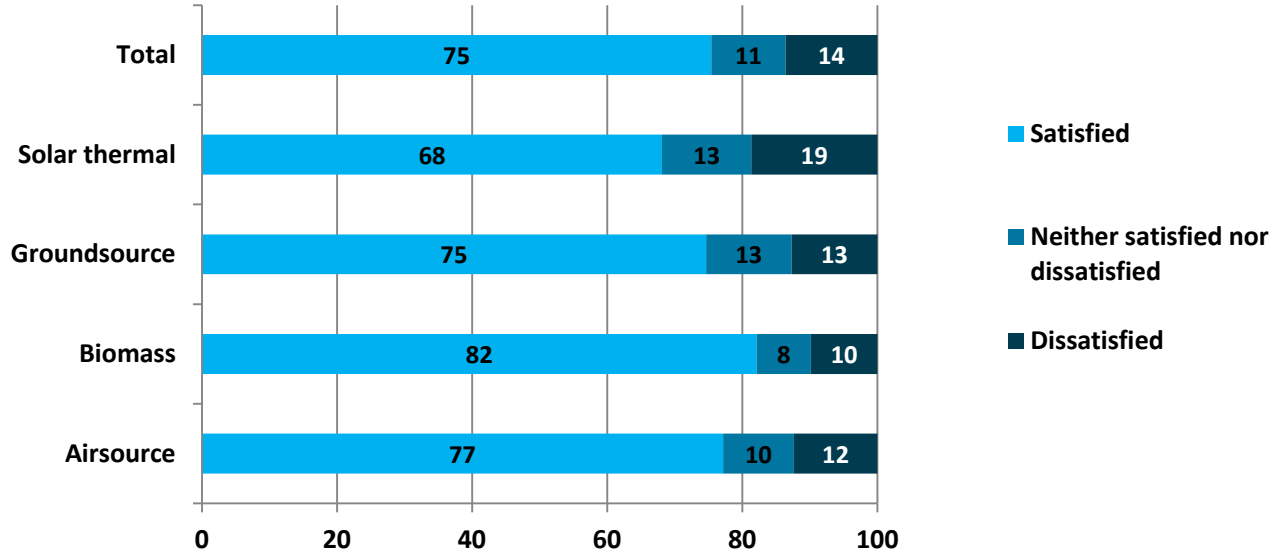
Three quarters of participants were satisfied with the application process

The majority of RHI participants were satisfied with the RHI application process, with 75 per cent being very or fairly satisfied (Figure 3.5). Of the remaining quarter, 14 per cent were dissatisfied and 11 per cent neither satisfied nor dissatisfied.

New applicants were more likely to be satisfied with the ease of applying for the RHI, with 81 per cent being very or fairly satisfied, compared with 74 per cent of legacy applicants.

RHI participants with biomass boilers were the most satisfied, (82 per cent being very or fairly satisfied), compared with 77 per cent of participants with ASHPs, 75 per cent of participants with GSHPs and 68 per cent of participants with solar thermal installations (Figure 3.5).

Figure 3.5: Overall satisfaction with the ease of applying for the RHI (% by technology type)

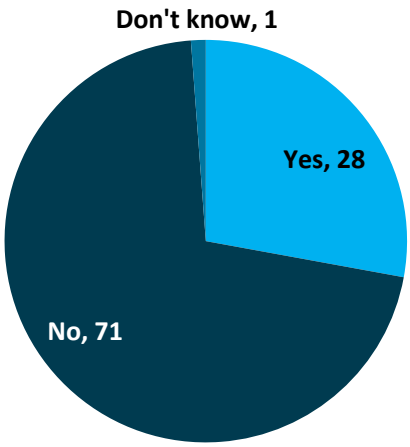


Base: All responses to the question (ASHP = 1,028, Biomass = 673, GSHP = 492, Solar thermal = 787); Notes:, categories combined, weighted

Seven in ten RHI applicants faced no problems

Figure 3.6 shows that seven in ten participants (71 per cent) experienced no problems with the RHI application process. Biomass participants faced fewest problems, with 75 per cent having had no problems, followed by solar thermal and ASHP participants (70 per cent) and ground source heat pump participants (69 per cent).

Figure 3.6: Did respondent face any problems completing the RHI application? (%)

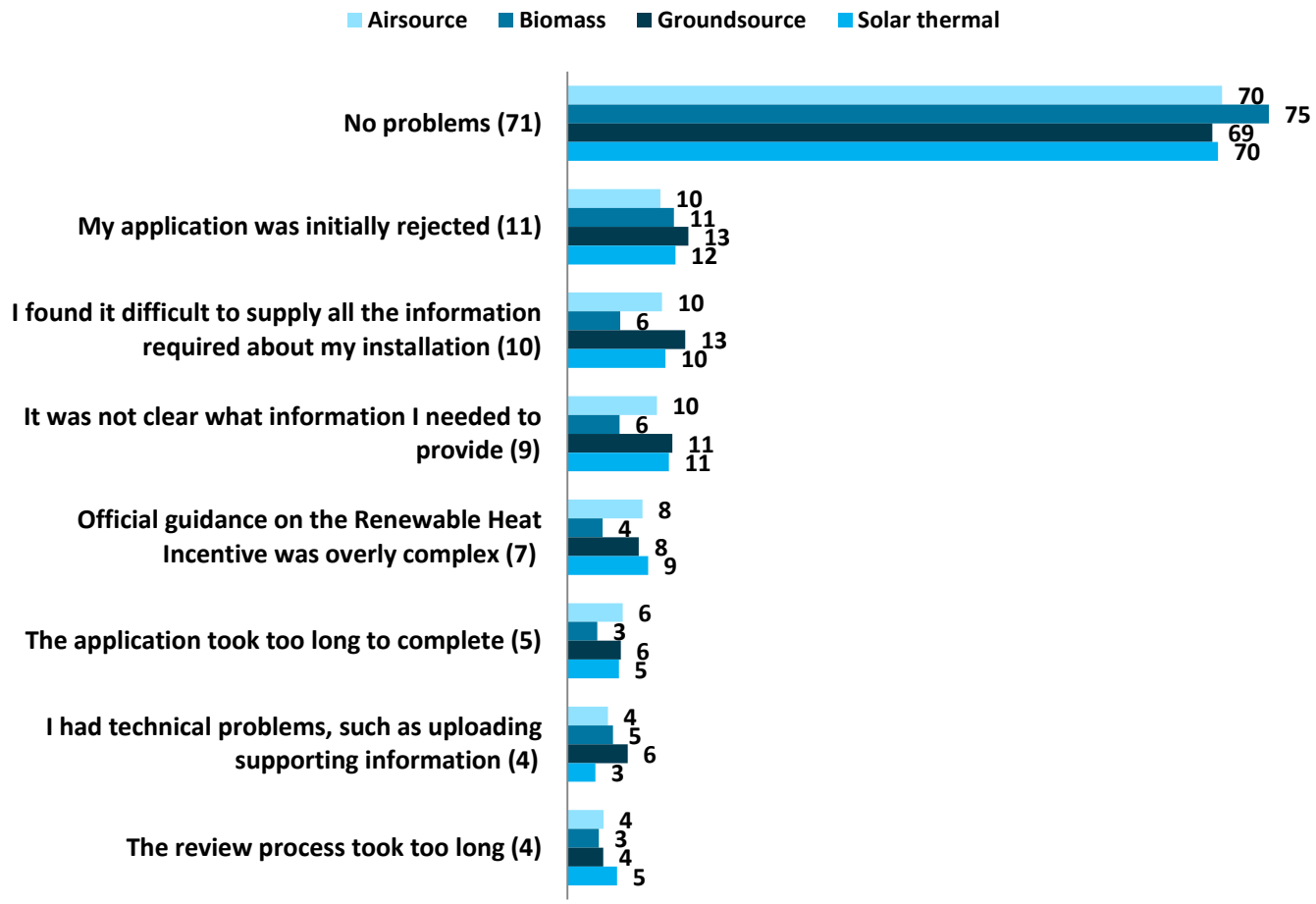


Base: All responses to the question (n=2,978); Notes: Single coded, weighted.

Of the 28 per cent of participants who experienced problems with the RHI application (Figure 3.7), the most common problem was that customer's initial application was rejected on the first attempt (11 per cent of all participants).

The second most common reason was that participants found it 'difficult to supply all the information required' (10 per cent). Further problems were that it was 'not clear what information [participants] needed to provide' (9 per cent) and that 'guidance on the RHI [was] overly complex' (7 per cent).

Figure 3.7: Most common problems faced in completing the RHI application (% by technology type)

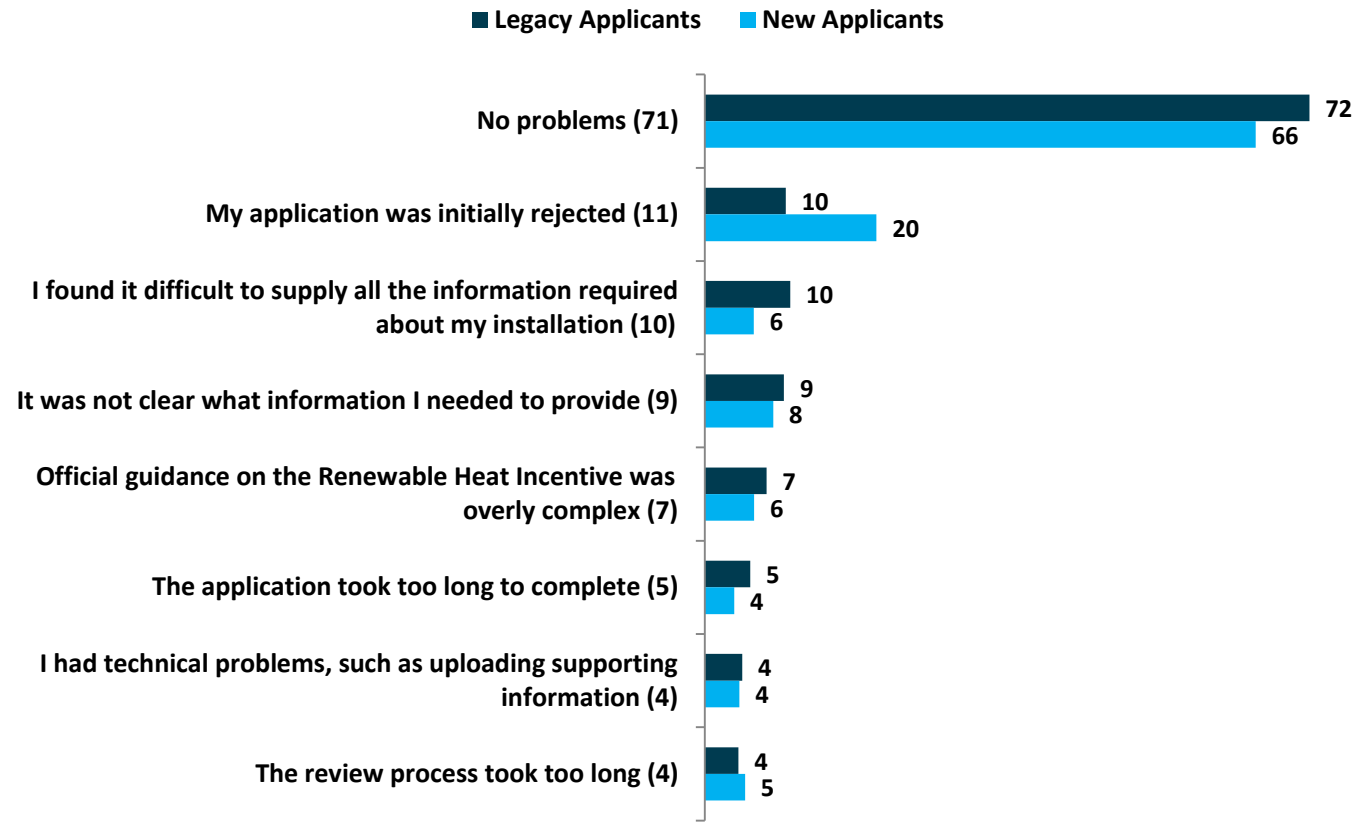


Base: All responses to the question (ASHP = 1,028, Biomass = 672, GSHP = 492, Solar thermal = 786); Notes: Multi-coded, weighted, categories presented selected by at least 4 per cent of respondents (full table included in data annex)

Among participants who faced problems completing the RHI application process, new applicants were more likely to have had their application initially rejected (20 per cent) compared to legacy applicants (10 per cent).

Legacy applicants (Figure 3.8) were more likely than new applicants to report that it was difficult to supply all the information required (10 per cent compared to 6 per cent), it was not clear what information to provide (9 per cent compared to 8 per cent) and that the official guidance was too complex (7 per cent compared to 6 per cent).

Figure 3.8: Most common problems in completing the RHI application (% by applicant type)

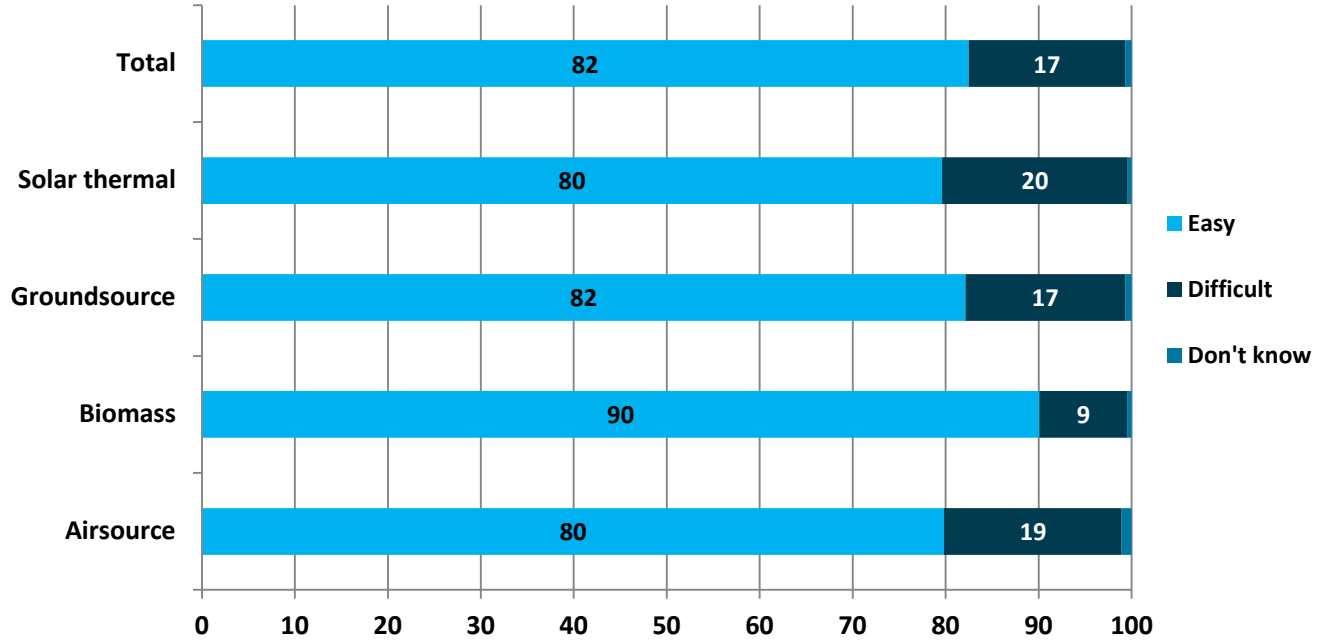


Base: All responses to the question (Legacy = 2,567, New = 411); Notes: Multi-coded, weighted, categories presented selected by at least 4 per cent of respondents (full table included in data annex).

The application form is easy to complete for most participants

RHI participants predominantly found the application process 'very' or 'fairly easy'. At least 80 per cent (solar thermal) of participants across the technologies found it very or fairly easy, rising to 90 per cent in the case of participants with biomass boilers (Figure 3.9).

Figure 3.9: How participants found completing the RHI application form (% by technology type)

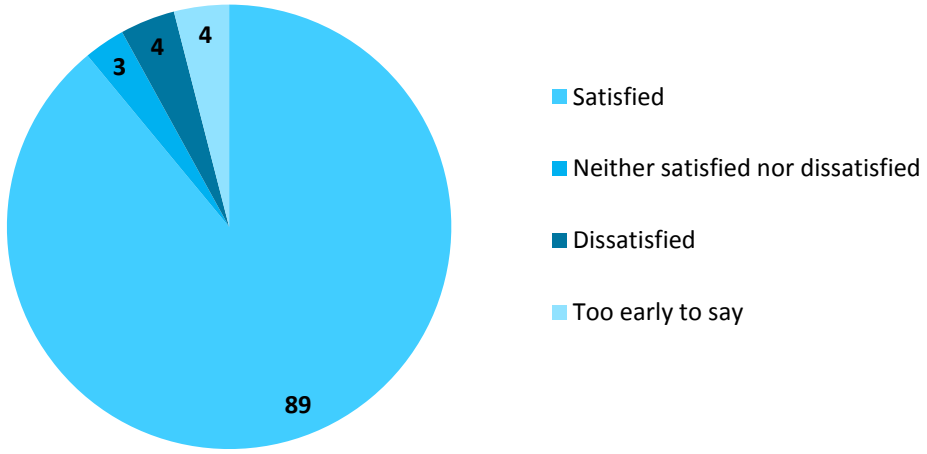


Base: All responses to the question (ASHP = 1,028, Biomass = 673, GSHP = 492, Solar thermal = 787); Notes: Weighted, categories combined, percentages may not equal 100 due to rounding.

Participants were satisfied with their renewable heating technologies

RHI participants reported a high level of overall satisfaction with the technologies they had installed, with 89 per cent very or fairly satisfied (Figure 3.10). RHI participants with GSHP installations reported the highest satisfaction levels (94 per cent very or fairly satisfied), followed by participants with solar thermal (92 per cent), ASHP (87 per cent) and biomass installations (85 per cent).

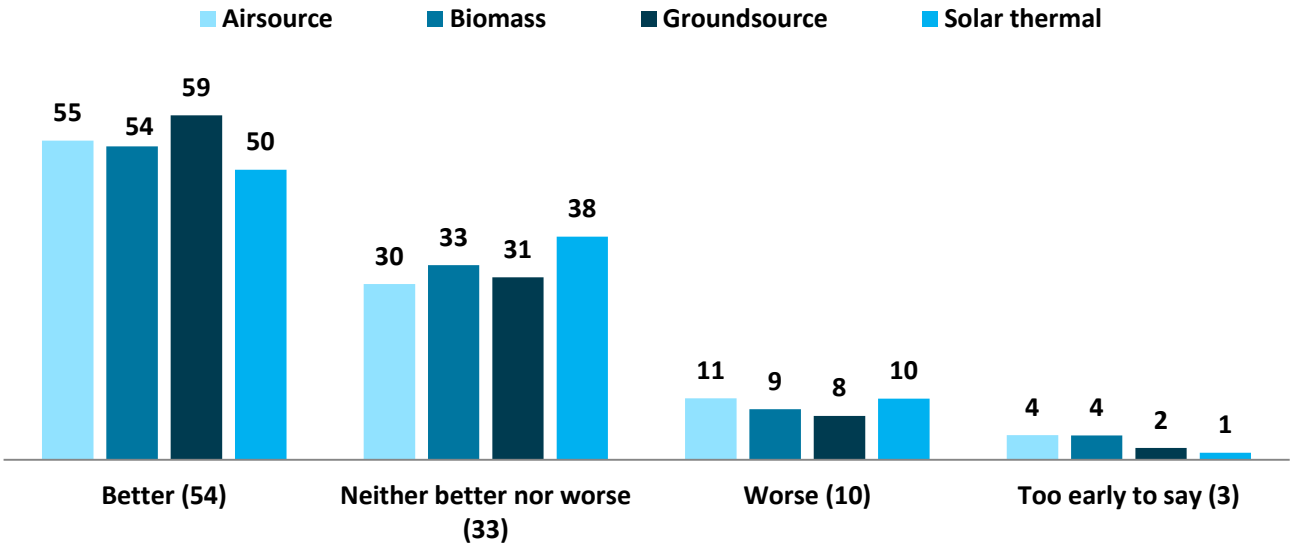
Figure 3.10: Satisfaction with the Renewable Heat Technology (%)



Base: All responses to the question (n=2,972); Notes: Categories combined, weighted

Overall 54 per cent of the RHI participants reported that their renewable heating technology was better than they expected (Figure 3.11). Applicants with GSHPs were most likely to report this (59 per cent), followed by applicants with ASHPs (55 per cent), biomass installations (54 per cent) and solar thermal (50 per cent).

Figure 3.11: Satisfaction with renewable heating technology compared to expectations (% by technology type)



Base: All responses to the question (ASHP = 971, Biomass = 615, GSHP = 480, Solar thermal = 775); Notes: Weighted, categories combined

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