



Department
of Energy &
Climate Change

Evaluation of the Renewable Heat Incentive (RHI)

Technical report of qualitative research with social
housing providers

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Introduction

This technical report sets out the methodology for qualitative research with social housing landlord applicants and potential applicants to the Renewable Heat Incentive (RHI). The findings of this research are available from <https://www.gov.uk/government/collections/renewable-heat-incentive-evaluation>.

Evaluation of the Renewable Heat Incentive (RHI)

An independent evaluation of the RHI was commissioned by the Department of Energy and Climate Change (DECC) and undertaken by NatCen Social Research, Eunomia Research and Consulting, the Centre for Sustainable Energy and Frontier Economics (the evaluation consortium).

The evaluation comprised three key strands of activity, focusing on:

- **Non-domestic** RHI applicants and possible applicants;
- Renewable heat **supply chain**¹; and
- **Domestic** RHI owner-occupier applicants and social housing provider applicants and non-applicants.

The outputs from the evaluation will help DECC to understand and assess how the domestic RHI is delivering relative to its objectives and to support development of the scheme. This evaluation also helps ensure that DECC is conforming to principles of accountability, transparency and openness to scrutiny in policy-making.

To achieve these objectives a series of research projects focused on the domestic RHI were designed and delivered by the evaluation consortium. These were:

- A census of owner-occupier RHI accredited applicants;
- Qualitative research with owner-occupier RHI accredited applicants; and
- Qualitative research with social housing provider RHI applicants and possible applicants.

¹ The renewable heat supply chain incorporates manufacturers, installers and installers of renewable heating technologies and suppliers of biomass fuel.

Qualitative research with social housing provider RHI applicants and possible applicants

Aims of this research

Registered social housing providers are responsible for managing around 3.5 million homes in the UK. Consequently, they are an important customer for renewable heat technologies both at domestic and non-domestic scales².

The purpose of this project was to understand the decision-making process of social housing providers relating to the management of heating systems in general and renewable heating systems in particular. It also explored the influence of the RHI on decision-making. The overarching aim of this research was to assist DECC in understanding the barriers and opportunities for greater deployment of renewable heating in the social housing sector and the role that government policy, including the RHI, can play in increasing take-up of renewable heat technologies. Key interview topics included:

- How do social housing providers make decisions relating to the procurement of heating systems?
- How do social housing providers evaluate innovative heating technologies and in particular renewable heating technologies?
- How can social housing providers be encouraged to install renewable heating
- How can social housing providers be encouraged to apply to the RHI?

A qualitative approach was adopted in order to explore the complexity and nuances of the decision-making process undertaken by social housing providers as well as being appropriate for the relatively small numbers of social housing providers on the domestic scheme at the time of the research. The qualitative study was conducted from January to March 2015, with final reporting in October 2015.

Research methodology

Thirty two interviews were conducted with a diverse sample of social housing providers, which will be covered in more detail below. Interviews were conducted with staff with responsibility for:

- Setting the strategic framework within which asset management decisions are taken e.g. via the creation of policies, procedures and other processes.

² For example, communal heating systems often found in sheltered housing schemes will use non-domestic scale technology

- Making asset management decisions, particularly relating to the specification of heating systems.

The research had the following stages:

- Scoping work - familiarisation with research questions and developing a research plan.
- Development of topic guides and recruitment materials.
- Sampling and recruitment.
- Data collection - conducting the interviews.
- Data management and analysis.
- Interpretation and reporting.

These stages are now described in more detail.

Sampling

Sampling strategy

Participants in qualitative samples are purposively selected to achieve range and diversity with respect to carefully chosen sample criteria. The primary selection criteria for inclusion in this research were: the size of the social housing provider and whether or not social housing providers had made an application to the RHI (see below). The criteria were prioritised from a longer list of variables to keep the sample size manageable for qualitative research and to enable detailed exploration of how social housing providers make decisions relating to the installation of heating systems. Additionally, a number of secondary criteria were monitored by the research team to ensure diversity.

A sample of RHI applicants was drawn from administrative data collected by Ofgem. Additionally, a sample of eligible non-applicants was developed from the following sources:

- Listing of all registered providers in England (Private Registered Provider and Local Authorities): <https://www.gov.uk/government/publications/current-registered-providers-of-social-housing>. Includes contact details and geographical location but no stock size information.
- HCA statistical return for all PRPs: <https://www.gov.uk/government/collections/statistical-data-return-statistical-releases> Includes contact details, geographical location and data on stock size.
- Scottish social housing regulator online database: http://www.esystems.scottishhousingregulator.gov.uk/register/reg_pub_dsp_adv_search. Contains contact details and information on stock size.
- Welsh government statistical return: <https://statswales.wales.gov.uk/Catalogue/Housing/Social-Housing-Stock->

[and-Rents/totalstock-by-year-providertype-accommodationtype](#). Contains data on stock size

- Welsh government database of social housing providers: <http://wales.gov.uk/topics/housing-and-regeneration/publications/registered-social-landlords-in-wales/?lang=en>. Contains contact details but no stock size data.

Other than the Scottish database, these datasets were combined into a single table. To help with recruitment of social housing providers meeting secondary geographical criteria the data were then joined with Government Office Region (GOR - Southwest England, East Midlands, Scotland, Wales etc.) from the Office of National Statistics Postcode look up file. The resulting table shows:

- Name
- Address
- Phone number for registered social housing providers in England
- Stock sizes for all Welsh social housing providers and English PRPs plus some of the LA social housing providers
- GOR

This table was the basis for selection of non -applicant social housing providers in England and Wales. Scottish Registered Social Landlords (RSLs) were contacted following review of their online database.

Sample criteria

Primary Criterion 1 - social housing provider size

The primary purpose of this project was to understand how social housing providers make asset management decisions relating to heating systems and particularly how they view renewable heat technologies and the RHI. The size of a social housing provider influences many aspects of its structure and culture and, consequently, its decision-making style. For this reason, the research team felt it was important for the size of the social housing provider, measured by the number of housing units, to be included as a primary selection criterion. The size differentiation criterion was kept very simple in order to ease sampling complexity (see table 1).

Primary Criterion 2 - applicant or non-applicant status

In order to fully explore the range of factors influencing decision-making, interviews were carried out with social housing providers who had made an application for the RHI. In order to have a large enough sample, interviews were carried out both with social housing providers that commissioned their renewable heat technology on and after 9th April 2014 (new applicants) and those that commissioned their renewable heat technology before 9th April 2013 (legacy applicants).

Social landlords who were potential applicants for the RHI were also selected for interview to explore barriers to installing renewable heating technologies and applying to the RHI. For the purposes of the sample frame potential applicants were defined as social housing providers with some or all of their housing stock unconnected to mains gas. Potential applicants did not have to be aware of the RHI

to take part in an interview as one of the aims of this research was to better understand barriers to applying for the scheme. However, a screening exercise was carried out to ensure potential applicants had some awareness of renewable heat technologies.

Secondary criteria

Additionally, a number of secondary criteria were monitored to ensure further diversity across the sample. The sample was monitored against the following secondary criteria:

- **Geography** (Scotland, Wales and regions of England). This criterion was included to ensure a balanced sample and to enable exploration of any geographical variation in the views and experiences of social housing providers.
- **Governance** (Local Authority social housing provider or private registered social housing provider, also known as PRPs – private registered providers). It was important that social housing providers who operate in different legal contexts were included in the research.
- **Group structure**. Many of the largest housing associations have a group structure with smaller housing associations working together under the umbrella of a single group head. The group head will generally set the strategic direction of the group members.
- **Type of renewable heat technology/ heating system**. It was also important for the sample to be varied with respect to the type of renewable heat technology that had been installed³.
- **Type of building**. The research aimed to carry out interviews with social housing providers who had installed heating systems in new build properties as this may have influenced how social housing providers managed heating systems in their existing stock.

Achieved sample

Primary criteria

The final achieved sample for primary criteria is shown in Table 1.

³ While communal heating systems are not covered by the RHI, interviews with SHPs with experience of communal heating systems were carried out as a point of comparison.

Table 1: Number of achieved interviews by size of social housing provider and application status

Size	Number of achieved interviews with applicants	Target	Number of achieved interviews with non-applicants	Target
Small (<1000)	1	5-7	5	5-7
Medium (> 1000 units, < 10,000 units)	10	8-10	4	8-10
Large (>10000)	5		7	

The achieved sample was sufficiently diverse with respect to the primary sample criteria. While the research team made every effort to achieve sample quotas, only one interview could be carried out with a 'small' social housing provider on the RHI. Possible reasons for this included the relatively small number of small social housing providers that have applied for the RHI and some small social housing providers being unable to participate in the research due to resource constraints. However, two additional interviews were carried out with social housing providers with stock sizes over 1,000 and less than 2,500 units. This gives some confidence to the views of smaller social housing providers have been reflected in the findings of this research.

Secondary criteria

Table 2: Achieved sample for secondary criteria

	Achieved number of interviews with applicants	Achieved number of interviews with non-applicants	Total number of interviews achieved	Target
Geography				
Northern England	4	2	6	min 4
Midlands	1	3	4	min 4
South Western England	5	4	9	min 4
South Eastern England	1	4	5	min 4
Wales	2	1	3	min 4
Scotland	3	2	5	min 5
Total	16	16	32	
Governance				
Local authority	2	4	6	min 5
Very large with group structure	4	4	8	min 3
Private Registered Providers	15	11	26	min 10
Heating system configuration/type				

Ownership of some communally heated units	9	5	14	min 2
Installing some solar thermal	13	7	20	min 3
Installing some GSHP	6	3	9	min 3
Installing some ASHP	15	10	25	min 3
Installing some biomass boilers	9	3	12	min 3

Table 2 indicates that all secondary sample quotas were achieved other than for Welsh social housing providers where 3 were recruited versus a target of 4. Overall it indicates a good distribution of applicants and non-applicants across secondary criteria.

Recruitment

Recruitment and fieldwork took place over a 6 week period from the week commencing 26th January 2015. Participants were recruited by the research team. The recruitment approach was designed to ensure participant consent was informed, voluntary and ongoing. Potential participants were initially selected according to primary criteria (size and applicant status). A screening exercise was conducted with selected social housing providers to ensure the sample was diverse with respect to secondary criteria as well. Social housing providers who met the criteria were invited to take part in an interview.

Data collection

Due to the complexity of the research topic, a number of interviews were conducted face to face. The advantages of face to face had to be balanced against the need to get a good geographical spread of interviews across England, Scotland and Wales (see minimum interview requirements in the secondary criteria table). Consequently, a 1.5 hour travel time limit was used to determine which interviews would be conducted over the phone rather than in person. This resulted in 6 interviews being conducted in person and the remainder over the phone.

Topic guides, reviewed by DECC, were used to conduct all interviews. Researchers started interviews by introducing the project and explaining what was involved in taking part, the voluntary nature of participation, confidentiality and disclosure and how data would be stored and reported. Participants were given an opportunity to ask questions before deciding whether to take part in the research. The main interview used a topic guide covering key themes and containing specific prompts and probes to support the interviewer, rather than providing scripted questions. Two topic guides were produced: one for applicants to the RHI and one for non-applicants. The applicant topic guide was identical to the non-applicant version other than in containing a series of questions around experience of the RHI. Full topic guides are shown in Annexes B and C. The key topics covered in the topic guides were as follows:

- Description of the social housing provider - its size, geography, governance and the policy landscape in which it operates including experience of using other sources of government finance for energy related retrofits.
- Description of existing heating systems – their type, distribution across the stock and how well they were performing.
- Asset management and the process of procurement of heating systems. We probed on how different types of heating system are initially noticed and considered for installation, programming of replacement of heating systems, management tools employed, contractual arrangements, types of staff involved and finance.
- Description of the information environment in which social housing providers operate – where do respondents hear about innovative or new types of heating systems, which sources of information are valued or more credible than others.
- General attitudes to renewable heat technologies and barriers to their installation. We probed on how different types of renewable heat technology are assessed.
- Experience of renewable heat technologies once installed including tenant experience of renewable heat technologies.
- Information used and trusted when first alerted or applying to the RHI.
- Motivations for and facilitators/barriers to applying to the RHI or the Renewable Heat Premium Payment (RHPP)⁴. The RHPP was only discussed to the extent that it was influential in leading to an RHI application.
- Experience of the RHI application process.
- Final thoughts on how decision-making has or may change as a result of the RHI.

Interviews lasted around one hour. After 3 interviews were conducted, the topic guide was reviewed to take account of:

- How well the questions and prompts were working.
- Areas of questioning that need to be prioritised and questions that could be dropped given time constraints.

The topic guide was felt to be working well and no significant changes were required.

⁴ RHPP was a government grant scheme for installing renewable heating systems before the introduction of the domestic RHI.

Data management and analysis

Interviews were audio-recorded and transcribed. Transcripts were analysed using a Framework approach. This entails the use of a matrix to conduct a “thematic” analysis and involved a number of stages:

- First, the key topics and issues which emerged from the data were identified and a thematic framework or coding template developed.
- NVivo – an industry standard software for managing qualitative data -the framework was used to classify and organise the data from each respondent by theme – e.g. attitudes to renewable heat technologies.
- Each part of a respondent’s response allocated to a particular theme or themes was then summarised.
- Once all the data had been categorised a matrix of the summaries of what each respondent had said about a particular theme was created.

These matrices allow a systematic and comprehensive approach to interpretation. They allow the exploration of a particular theme across all or groups of respondents (e.g. those that took up RHI and those that did not) while simultaneously allowing the full pattern of an individual’s attitudes and behaviour to be reviewed. This approach enabled the research team to compare and contrast the accounts of different participants, or groups of participants.

Interpretation and reporting

Outputs from this qualitative project show the range of views and experiences of social housing providers who took part in this research. As this is qualitative research, no conclusions about the prevalence of findings in the wider population can be drawn. Rather, the interpretation tries to explore the links and the logics of the decision-making processes and to suggest where a quantitative approach would usefully describe the strength of the relationships uncovered by the qualitative analysis. Interview quotations have been used in outputs from this strand of the research where appropriate.

Annex A: Example recruitment screener: non-applicants to the RHI (abridged)

Stage 1: Introducing study to gatekeeper

Interviewer speaks to the receptionist/call centre operator and explains briefly the project and asks to speak to an asset manager or somebody who they think might be well placed to answer questions about property maintenance and renewable heating.

If they are not available contact details and a more convenient time to call back are requested.

Stage 2: Introducing study to Asset Manager

Interviewer introduces themselves, CSE and the project again, mentioning they are studying decision making processes around installing heating systems and changes resulting from the RHI. Interviewer explains they were hoping to interview a senior asset manager who makes decisions on specifying heating systems; they go on to mention the interview will take around an hour, will be in phone or in person (depending on the location of the RSL) and responses will be anonymised.

Interviewer checks if the respondent would be willing to be interviewed and if they think they are best placed to answer the questions.

Criteria checking

If the respondent is willing to be interviewed then the interviewer now explains that they need to ask a number of preliminary questions to ensure that the social housing provider meets a range of criteria. Interviewer explains this is to ensure diversity in the sample.

In the instance that the respondent does not know the answer to any of the questions the interviewer proposes emailing the respondent the unanswered questions to allow them a chance to research the answers. A follow up call is made to chase up the answers; if recruitment is completed in the interim then a call is made to inform the respondent that their participation is no longer required.

The following questions are asked:

- Do you have any properties which are not currently connected to the gas main?

If no:

The respondent is thanked for their time but informed that for this study landlords must have at least some off-gas properties.

If yes:

- Just to check, are you a private registered provider or a local authority social housing provider?
- Is your social housing provider part of a group? (i.e. a collection of separate organisations under one umbrella name).
- Roughly how many units does your social housing provider manage? (if a group, ask for group level as well as individual social housing provider level).
- Which part of the country is your stock located in? Which part are they primarily located in: (if a group, ask for any differences in members)
 - Wales
 - Scotland
 - North East
 - North West
 - Yorkshire and The Humber
 - East Midlands
 - West Midlands
 - East of England
 - London
 - South East
 - South West
- Do you have any communally heated units in your stock?
- Do you know whether there have been any new properties built in the last 5 years?
- Are you aware of any plans to build any new properties in the next 2 years?
- As far as you are aware does the asset management part of your social housing provider have an awareness of renewable heat technologies? For instance:
 - Ground source heat pumps?
 - Air Source Heat Pumps?
 - Biomass boilers?
 - Solar thermal Panels?
- Do you know if you have installed any renewable heat technologies in your properties?
- If yes, just to check have you *recently* applied to the RHI for any of these renewable heat technology installations

If the respondent is unable to answer enough questions to determine whether they meet the desired non-applicant criteria for the sample frame the interviewer may have to suggest calling back another time to allow the respondent to find out the answers.

If the respondent does not meet the criteria for either non-applicants or applicants then the interviewer thanks them and explains that we already have enough representation from social housing providers similar to them and requests to put them on a reserve list to get back to in case of drop outs.

If the respondent meets the non-applicant criteria then the interviewer thanks them for their time and explains that based on their answers we would like to include them in our study.

Finding the right person to speak to

Interviewer explains the interview will be in person or over the telephone (depending on the RSL's location) and will take around an hour. They then discuss whether the respondent is the best person to interview or whether there is someone else who would be more suitable.

If the respondent is the right person then the interviewer explains the time period of the interviewers and agrees on a mutually convenient time.

If the respondent is not the right person then the interviewer asks to be put through to the right person. If this is possible they explain the project again and attempt to find a convenient time to do the interview. (If they are not available then an email address or telephone number is requested).

In both cases, the interviewer also requests if before the interview they could see any relevant documentation held by the RSL, in relation to decision making around heating systems and asks for an email address to send a confirmation email to. The interviewer thanks the respondent for their time.

Annex B: Applicant Topic Guide

RHI evaluation Social Housing Landlords RHI applicant topic guide

The following guide lists the discussion phases, key themes, sub-themes and the prompts and probes to be used for each interview. It does not include many follow-up questions like **Why? When? How?** as it is assumed that participants' contributions will be fully explored throughout in order to understand how and why views are held. Researchers are not tied to phrasing the questions as they are presented in this topic guide – these are for guidance only.

Aims of the interview

The overall aim of the Social Housing study is to:

- a) Understand the processes underlying procurement of Renewable Heat Technologies and heating technologies more generally.
- b) Explore applicants experience of the RHI programme.
- c) Explore decision-making of Social Housing Providers that have not applied to the RHI.

The interview will meet its objectives by exploring the applicant's journey to the RHI, their experience of the application process, their decision making around the types of Renewable Heat Technology (renewable heat technology) selected and their experience of managing renewable heat technologies in situ.

Accordingly, this topic guide for RHI applicants explores the following issues:

- Distribution of heating system types across the stock.
- Decision-making and the procurement process in general.
- Decision making around renewable heat technologies.
 - Reason for selecting particular technology(ies) and not others.
 - How they paid for renewable heat technologies and reasons for this.
 - Facilitators and barriers to technology take up.
- Living with renewable heat technologies.
- Hearing about and applying for the RHI.
- Ongoing engagement with the RHI.

Theme		
<p>Introducing NatCen, CSE & the study</p>	<p>Thank them for taking part. Purpose of interview. DECC, the Government department in charge of ensuring the country has secure, clean and affordable energy supplies, is looking at customers' experiences and views on the Renewable Heat Initiative (RHI). Interviewer – if necessary, remind them what RHI is:</p> <ul style="list-style-type: none"> · Financial incentive to encourage switch to renewable heating systems. · Involved you installing renewable heating system (e.g. biomass boiler, air source heat pump, ground source heat pump, solar or a mixture of these) · Receiving quarterly payments (planned for 7 years) based on estimations of annual heat use. 	<p>Who NatCen/CSE is. NatCen is a research organisation that is completely independent of DECC. CSE is an energy charity partnered with NatCen to undertake this work.</p> <p>Why they have been selected.</p> <p>We are contacting you as an organisation that has participated in the RHI.</p> <p>What will we be talking about:</p> <ul style="list-style-type: none"> • The way you make decisions about procurement of heating systems • Your attitudes to Renewable Heating Technologies • Your reasons for taking up the RHI scheme and your experiences and views on it. <p>Reassurances</p> <ul style="list-style-type: none"> • <u>Participation voluntary.</u> We can stop interview at any time and we can move on if they don't want to answer a question. • <u>No wrong or right answers.</u> Just want to hear their experiences and views. We may ask obvious questions, but important to hear what they have to say in their own words. • <u>Participation is anonymous and confidential.</u> We will not name anyone that has taken part to DECC or to anyone else. The report will not name any individuals who participated.

		<p>Taking part</p> <p><u>Duration.</u> The interview will last up to an hour.</p> <p><u>Permission to record.</u> Recording means we have an accurate record of what was said. The recording is kept securely in accordance with the Data Protection Act and only the research team have access to it.</p> <p><u>Any questions.</u> Including any concerns they have.</p>
About the housing association	<p>Overview of the SHP Very important that this section is kept to a maximum time wise – c. 5 minutes</p>	<ul style="list-style-type: none"> • Size (number of units) • Geography • Structure and governance • Policy - probe on what internal policy framework they have • The interviewee’s role in the context of decision-making
	<p>Current status in respect of the RHI.</p> <p>If no payments yet then can spend more time on tech choices etc. and payment section redundant</p>	<ul style="list-style-type: none"> • Have you applied for RHI - was this for systems installed before/after the scheme launch? • Did you apply under RHPP? • Have you received any payments yet?
Policy landscape	<p>Understanding of the RHI.</p> <p>What other EE/renewable policies do they interact with? Other renewables such as PV?</p> <p>We are thinking about schemes such as FiTs and ECO and finance mechanisms available to SHLs such as Green Deal.</p>	<ul style="list-style-type: none"> • What is your understanding of the RHI? • Thinking about your off gas stock, what sustainable energy funding streams or support programmes do you currently engage with if any. • Thinking about your off gas stock do you install energy efficiency measures or other renewable energy technologies? • If so, how are these measures funded?

<p>Existing heating systems</p>	<p>A brief description of their heating systems across the stock prior to applying for the RHI.</p>	<p>General issues affecting distribution of heating system types</p> <p>Probe on:</p> <ul style="list-style-type: none"> • Are they happy with what they have currently? • For off gas stock – what systems go in at the moment? • Are you generally happy with these heating systems for off gas (e.g. Oil/electric). Are alternatives considered?
<p>Asset management and decision-making in general around procurement of heating systems</p>	<p>Asset management for heating systems and the process of procurement of heating systems.</p> <p>In face to face situations this may be facilitated by drawing flow diagrams.</p> <p>Note: new build is not eligible for the RHI but need to explore whether renewable heat technologies installed in any case in new build contexts.</p>	<p>Probe on:</p> <ul style="list-style-type: none"> • The general process for buying new heating systems • Are there stages in the process? If yes what happens at each stage? • How are different options evaluated (what tools are used, what metrics)? • How is the final decision taken? <p>Probe on how this differs between:</p> <ul style="list-style-type: none"> • reactive and planned maintenance • off gas property versus on gas property • new buildings versus retrofit • buildings with shared heating systems versus homes with their own heating systems
	<p>Governance of asset management and procurement.</p>	<ul style="list-style-type: none"> • What is the governance for procurement – wh type of staff is involved • Policies and procedures that they use in guiding governance and procurement activity e.g. whether they have adopted any certificated environmental management systems. • Are external agencies or organisations involved - e.g. consultants to develop tender

		<p>documentation or to produce feasibility work</p> <p>Probe on:</p> <ul style="list-style-type: none"> • whose job it is to make the organisation more sustainable • how influential they are • whether they or other staff would drive installation of renewable heat technologies • Whether tenants have an influence in determining specification of heating systems
	<p>Information that is used in the decision-making process and the stage it is used at.</p>	<p>Probe on the sources of information that are used to inform decisions at each stage.</p> <ul style="list-style-type: none"> • LA, industry or HCA guidance? • Any written policy? • Written procedures? <p>Probe on:</p> <ul style="list-style-type: none"> • How are options for investment initially noticed and brought to the table? • Who produces documentation? • How is it revised and evaluated?
	<p>Finance and the financial tools that are used.</p>	<ul style="list-style-type: none"> • Finance sources used (loans, grants, eco etc.) • Business planning cycle – how far back/forward does it go? • How are different heating systems options evaluated from a financial perspective? • Metrics used to prioritise investment - payback? NPV? ROI ? Something else?
<p>Barriers to, and support for, renewable heat technology installation and deciding which renewable heat technology(S) to install</p>	<p>General attitudes to renewable heat technologies. Barriers and opportunities.</p> <p>Need to be specific about each type: ASHP, GSHP, Solar</p>	<p>What are the motivating factors, and what have been the barriers to you installing RH? Probe on:</p> <ul style="list-style-type: none"> • Barriers to installation of renewable heat technologies • Costs and benefits • Policy alignment

	Thermal and biomass.	<ul style="list-style-type: none"> • Tenant response • Reliability of the technologies • Warranties, after sales support • RHI support • What would further facilitate renewable heat technology installation in the SHP sector. What is the main enabler for you?
	Why they selected the particular RH technologies applied for under the RHI . Why now?	<p>Probe on:</p> <ul style="list-style-type: none"> • Why they replaced some of their systems with renewable heat technologies at this point • Efficiency/effectiveness/cost efficiency? • Knowledge/lack of knowledge of technology (prior experience of technology?) • Characteristics of your organisation and the profile of the housing stock • Needs/preferences of the tenants? • Working relationship with a supplier that can install renewables? • Talking to ‘trusted persons’ <p>Have they retained the old technology - if so why?</p>
	Levels of protection for renewable heat technologies	What were the warranties and guarantees offered for the chosen renewable heat technologies. Was this important in technology selection?
	Explore how the RH technology was paid for.	<p>What are the barriers and facilitators to <i>financing</i> the technology. How was the renewable heat technology paid for? Probe on:</p> <ul style="list-style-type: none"> • Loans • Grants • Eco funding <p>What do you think about the</p>

		<p>respective level of the tariffs</p> <p>Was a third party or ESCo agreement used? If yes The reasons behind this e.g.:</p> <ul style="list-style-type: none"> • Affordability • Weighing up risks • Anticipations about RHI payment returns?
	Additional guidance/support they needed.	Probe on any additional information that would have been helpful (e.g. around who could install technology)
Installing the technology	<p>Overall experience of installing the technology.</p> <p>(keep brief)</p>	<p>Description of the process):</p> <ul style="list-style-type: none"> • How they selected contractor • How long it took • What worked/ what worked less well • What could be improved • Length of time it took • Finding trustworthy person to do it • Whether it went to budget • Able to apply to the RHI within 12 months of the commissioning date of the heating system (shown in the MCS)
Tenant experience	How have tenants reacted to their new RH systems.	<p>Prompt on:</p> <ul style="list-style-type: none"> • Acceptance • Comfort • Cost • Overall assessment of any changes to tenant behaviours • Any unforeseen or unintended behavioural changes
Running costs and maintenance	Explore how the renewable heat technologies are working out in practice.	<ul style="list-style-type: none"> • What is the maintenance like? • Do you use existing maintenance contracts or have new specialised ones had to be procured? • What is the support like? • For biomass users – what is the

		<p>supply chain like for fuel supply?</p> <ul style="list-style-type: none"> • Are the technologies reliable? • Are the running costs as expected? • What were your expectations? • If you anticipated savings are these being delivered?
Decision-making in the context of the RHI	Explore how they heard about the RHI.	<p>Sources of information and why these trusted.</p> <p>Probe on:</p> <ul style="list-style-type: none"> • DECC website • Own staff • Industry fora • Word of mouth
	<p>Their reasons for applying for RHI.</p> <p>Explore what influenced them to take up RHI.</p>	<p>Prompt on various aspects to RHI involvement:</p> <ul style="list-style-type: none"> • Cost / benefit calculations • Tariff rates • Internal policy • Does policy mean you would have done it anyway? • Previous experience with the RHPP • HCA funding requirements
	How decision-making has changed as a result of the RHI .	<p>You have described the process of procurement. Can you describe any changes that have resulted as a result of the introduction of the RHI?</p> <ul style="list-style-type: none"> • How critical was the RHI in determining that renewable heat technologies would be installed and in choosing a particular renewable heat technology? • At what stage was information about the RHI fed into the process? • How important was the RHI in relation to other enablers?

		<ul style="list-style-type: none"> • What assumptions did you use about paybacks or IRR as a result of attracting RHI payments? • Is using the RHI now part of long term planning?
	<p>What would they have done without the RHI (the counterfactual).</p>	<p>Probe on what they would have done in the absence of the RHI:</p> <ul style="list-style-type: none"> • Nothing • Non-renewable • Other renewable • Would have done irrespective of RHI (but did they bring forward?)
<p>Experience of the application process</p>	<p>How they completed the application (keep brief)?</p>	<ul style="list-style-type: none"> • A brief discussion of what they did. • Sources of advice and guidance (e.g. around EPC)
	<p>Their experience of the application process.</p>	<ul style="list-style-type: none"> • What worked well? • What could have been better? • What could be improved?
	<p>If not raised spontaneously, prompt on how on the following:</p>	<ul style="list-style-type: none"> • Understanding of the eligibility criteria. • Understanding the types of technologies they can install and caveats to this (e.g. solar thermal panels only for hot water). • Understanding which make and model of the heating system meets technical requirements. It must be MCS certified. • Any issues with finding an MCS certified installer? • How easy or difficult it was to get an EPC. • How well RHI worked with Green Deal they were receiving • How did they find GDA and finding a GD assessor? • How easy/difficult it was to obtain and provide proof.

	<p>Their experience of receiving RHI payments.</p>	<ul style="list-style-type: none"> • Whether this is what they expected – if not, how do they feel about it?
	<p>Views on how their payments are worked out.</p> <p>Interviewer – payments are worked out on estimation of heating system’s annual heat use. This varies with technologies:</p> <ul style="list-style-type: none"> • Biomass and heat pumps – the heat load figure on the EPC • Solar thermal – figure calculated by MCS installer 	<ul style="list-style-type: none"> • Do they understand the process? • If multiple technologies used, how easy or complicated they feel this is and do they understand the process? • Whether they feel it is accurate.
	<p>Views on how payments are made.</p> <p>Note: Degression is a reduction in tariff rates based on DECC’s review of its own predictions.</p>	<p>Probe on:</p> <ul style="list-style-type: none"> • General feelings about using estimates for payment calculation • Do they receive payment in a timely way • Has the prospect of degression affected their decision-making
Final thoughts	<p>Overall, their reflections on being on the RHI programme.</p>	<p>Probe on:</p> <ul style="list-style-type: none"> • Future plans for renewable heat technologies and the RHI • Probe on overall assessment • Whether they feel it has worked out for them – is so why. If not, why not? • What would help with renewable heat take up • Overall benefits or negatives
Wrapping up		<ul style="list-style-type: none"> • Thank them for their time • Ask them if there is anything else they would like to add • Reassure them about confidentiality

Annex C: Non-applicant Topic Guide

RHI evaluation **Social Housing Landlords NON applicant topic guide**

The following guide lists the discussion phases, key themes, sub-themes and the prompts and probes to be used for the NON applicant interview. It does not include many follow-up questions like Why? When? How? as it is assumed that participants' contributions will be fully explored throughout in order to understand how and why views are held.

Researchers are not tied to phrasing the questions as they are presented in this topic guide – these are for guidance only.

Aims of the interview

The overall aim of the Social Housing study is to:

- d) Understand the processes underlying procurement of Renewable Heat Technologies and heating technologies more generally.
- e) Explore applicants experience of the RHI programme
- f) Explore decision-making of Social Housing Providers that have not applied to the RHI.

For non-applicants we will particularly explore awareness of the RHI and attitudes and experience of renewable heat technologies. Accordingly, this topic guide for NON RHI applicants explores the following issues:

- Distribution of heating system types across the stock
- Decision-making and procurement in general
- Facilitators and barriers to renewable heat technology installation
- Awareness of the RHI and barriers to application to the RHI

Theme	Sub-theme and interviewer guidance	Questions and prompts
<p>Introducing NatCen, CSE & the study</p>	<p>Thank them for taking part. Purpose of interview. DECC, the Government department in charge of ensuring the country has secure, clean and affordable energy supplies, is looking at customers' experiences and views on the Renewable Heat Initiative (RHI) a government scheme to incentive the installation of Renewable Heating Technologies.</p>	<p>Who NatCen/CSE is. NatCen is a research organisation that is completely independent of DECC. CSE is an energy charity partnered with NatCen to undertake this work.</p>
		<p>Why they have been selected.</p> <p>We are contacting you as an organisation could potentially participate in the RHI.</p>
		<p>What we will be talking about:</p> <ul style="list-style-type: none"> • How you make decisions about procurement of heating systems • Your attitudes to and experience of Renewable Heating Technologies and • Barriers and opportunities for installing renewable heat technologies
		<p>Reassurances</p> <p><u>Participation voluntary.</u> We can stop interview at any time and we can move on if they don't want to answer a question.</p> <p><u>No wrong or right answers.</u> Just want to hear their experiences and views. We may ask obvious questions, but important to hear what they have to say in their own words.</p> <p><u>Participation is anonymous and confidential.</u> We will not name anyone that has taken part to DECC or to anyone else. The report will not name any individuals who participated.</p>
<p>Taking part</p> <p><u>Duration.</u> The interview will last up to an hour.</p> <p><u>Permission to record.</u> Recording means we have an accurate record of</p>		

		<p>what was said. The recording is kept securely in accordance with the Data Protection Act and only the research team have access to it.</p> <p><u>Any questions.</u> Including any concerns they have.</p>
About the housing association	<p>Overview of the SHP Very important that this section is kept to a minimum time wise – c. 5 minutes</p>	<ul style="list-style-type: none"> • Size (number of units) • Geography • Structure and governance • Policy - probe on what internal policy framework they have
	<p>Current status in respect of the RHI.</p>	<ul style="list-style-type: none"> • Are you aware of the RHI? • Is the RHI something you are looking into? • Have you already applied to the RHPP but not applied to RHI? • Have you installed renewable heat technologies but not (yet) applied to the RHI (or the RHPP)?
Policy landscape	<p>Understanding of the RHI.</p> <p>What other EE/renewable policies do they interact with? Other renewables such as PV?</p> <p>We are thinking about schemes such as FiTs and ECO and finance mechanisms available to SHLs such as Green Deal.</p> <p>Spend a bit more time on this section than for applicants to understand what it was about these other streams that worked for them so we can hopefully understand why RHI is different.</p>	<ul style="list-style-type: none"> • What is your understanding of the RHI? • What sustainable energy funding streams or support programmes do you currently engage with if any? • Does the SHP install energy efficiency measures or other renewable energy technologies?

<p>Existing heating systems</p>	<p>A brief description of their heating systems across the stock.</p>	<p>General issues affecting distribution of heating system types</p> <p>Probe on:</p> <ul style="list-style-type: none"> • Are they happy with what they have currently? • For off gas stock – what systems go in at the moment? • Are you happy with these heating systems for off gas or are alternatives such as renewable heat technologies ever considered?
<p>Asset management and decision-making in general around procurement of heating systems</p>	<p>Asset management for heating systems and the process of procurement of heating systems</p> <p>In face to face situations this may be facilitated by drawing flow diagrams</p> <p>Note: new build is not eligible for the RHI but need to explore whether renewable heat technologies installed in any case in new build contexts.</p>	<p>Probe on:</p> <ul style="list-style-type: none"> • The general process for buying new heating systems • Are there stages in the process? If yes what happens at each stage • The timetable for reinvestment in the stock • How are different options evaluated (what tools are used, what metrics) • How the final decision taken <p>Probe on how this differs between:</p> <ul style="list-style-type: none"> • Reactive and planned maintenance • Off gas property versus on gas property • New buildings versus retrofit • Buildings with shared heating systems versus homes with their own heating systems
	<p>Governance of asset management and procurement</p>	<p>What is the governance for procurement? Probe on:</p> <ul style="list-style-type: none"> • Policies and procedures that they use in guiding governance and procurement activity e.g. whether they have adopted any certificated environmental management systems. • How does procurement link with asset management more

		<p>generally?</p> <ul style="list-style-type: none"> • What type of staff is involved in heating system procurement? • At what stage are they involved? • Are external agencies or organisations involved - e.g. consultants to develop tender documentation or to produce feasibility work? <p>Probe on:</p> <ul style="list-style-type: none"> • Whose job it is to make the organisation more sustainable if any? • How influential they are • Whether they or other staff would drive installation of renewable heat technologies • Whether tenants have an influence in determining specification of heating systems
	<p>Information that is used in the decision-making process and the stage at which it is used.</p>	<p>Probe on the sources of information that are used to inform decisions at each stage:</p> <ul style="list-style-type: none"> • LA, industry or HCA guidance? • Any written policy? • Written procedures? <p>Probe on:</p> <ul style="list-style-type: none"> • How are options for investment initially noticed and brought to the table? • Who produces documentation? • How is it revised and evaluated?
	<p>Finance and the financial tools that are used for procurement of heating systems.</p>	<ul style="list-style-type: none"> • Finance sources used (loans, grants, eco etc.) • Business planning cycle – how far back does it go? • How are different heating systems options evaluated from a financial perspective • Metrics used to prioritise

		investment - payback? NPV? ROI ? Something else?
<p>Barriers to, and support for, renewable heat technology installation and deciding which renewable heat technology(S) to install</p>	<p>Please describe the extent of experience or knowledge of renewable heat technologies within the SHP.</p>	<p>Where does knowledge of renewable heat technologies reside within the organisation if at all?</p> <p>How would knowledge of renewable heat technologies come into the organisation (e.g. use of consultants? Appointment of staff? New job description?)?</p> <p>Probe on knowledge/experience of different renewable heat technologies within the renewable heat technology:</p> <ul style="list-style-type: none"> • Biomass • Solar thermal • Ground Source heat pumps • Air source heat pumps
	<p>Attitudes to renewable heat technologies. Barriers and opportunities.</p> <p>Specific attitudes to procurement and installation of renewable heat technologies. Need to be specific about each type: ASHP, GSHP, Solar Thermal and biomass.</p>	<p>Can you describe your general attitudes to Renewable Heating Technologies? What do you see as their advantages and disadvantages? Where are they feasible and where unfeasible?</p> <p>Where relevant – “You have not installed renewable heat technologies as yet. Please outline your principle reasons for this”.</p> <p>Probe on possible technical barriers to installation of renewable heat technologies:</p> <ul style="list-style-type: none"> • Suitability to building stock • Perceptions of reliability of the technologies • Perceptions of the effectiveness • Tenant capacity to use the equipment <p>Probe on possible finance barriers to installation of renewable heat technologies:</p> <ul style="list-style-type: none"> • Perceived costs and benefits • Funding for renewable heat technologies

		<p>Probe on possible governance barriers to installation of renewable heat technologies e.g.:</p> <ul style="list-style-type: none"> • Prior negative experiences • Policy alignment • No staff pushing for renewable heat technologies • Tenant preferences and influences on choice of technology • Suitability to tenants/clients <p>Probe on possible market barriers to installation of renewable heat technologies e.g.:</p> <ul style="list-style-type: none"> • Supply chain issues e.g. biomass supply chain • Competent and trusted installers • Reliable information about the technologies • Warranties, after sales support <p>What would be the main facilitators for your SHP to consider renewable heat technologies?</p> <ul style="list-style-type: none"> • What is the main enabler for you? • What would have to change in order for the SHL to apply to the RHI?
	<p>If they were to install renewable heat technologies in their stock which technologies would they replace and in which parts of the stock.</p>	<p>Probe on:</p> <ul style="list-style-type: none"> • Which RH technologies (heating systems)? • Which heating systems replaced by RH? • Which parts of the stock? • Would the old systems be retained?
	<p>If they have installed renewable heat technologies but not yet applied to the RHI why they selected the particular RH technologies.</p>	<p>Probe on:</p> <ul style="list-style-type: none"> • Efficiency/effectiveness/cost efficiency? • Knowledge/lack of knowledge of technology (prior experience of technology?)

		<ul style="list-style-type: none"> • Comparison with replaced technology? • Needs/preferences of the tenants? • Working relationship with a supplier that can install renewables? • Talking to ‘trusted persons’?
	Additional guidance/support they needed.	Probe on any additional information that would have been helpful (e.g. around who could install technology).
Decision-making in the context of the RHI	If they have heard about the RHI / are aware of it explore where they heard about it.	<p>If they have heard about the RHI where they heard about it. Probe on sources of information about the RHI and whether are trusted. E.g.:</p> <ul style="list-style-type: none"> • DECC website • Own staff • Industry fora • Word of mouth
	Their reasons for not (yet) applying to the RHI.	<p>What would have to change in order for the SHL to apply to the RHI? Explore what has influenced them not to take up RHI to date. Probe on:</p> <ul style="list-style-type: none"> • Eligibility • Scheme requirements around EPCs • Other administrative hurdles • Information insufficiently clear or compelling • Lack of awareness • Cost / benefit calculations • Tariff rates • Internal policy • Previous experience with the RHPP

	<p>If decision-making has changed or will change as a result of the RHI.</p>	<p>You have described the process of procurement. Can you describe any changes that have or will result as a result of the introduction of the RHI?</p> <ul style="list-style-type: none"> • At what stage will information about the RHI feed into the process? • How critical will the RHI be in determining whether renewable heat technologies will be installed? • How important is the RHI in relation to other enablers? • What do you think about the respective level of the tariffs? • If you apply to the RHI what assumptions will you use about paybacks or IRR as a result of attracting RHI payments? • Is there a timetable or investment cycle that will influence when an application to the RHI can be considered?
	<p>How would renewable heat technology be paid for?</p>	<p>Probe on:</p> <ul style="list-style-type: none"> • Reserves • Loans • Grants • Loans against RHI income <p>Would a third party or ESCo agreement be used? If yes, the reasons behind this e.g.:</p> <ul style="list-style-type: none"> • Affordability • Weighing up risks • Anticipations about RHI payment returns?
<p>Final thoughts</p>	<p>Overall, their reflections on the possibility of installing renewable heat technologies and potentially joining the RHI programme.</p>	<p>Any future plans for renewable heat technologies and the RHI?</p>

Wrapping up

- Thank them for their time
- Ask them if there is anything else they would like to add
- Reassure them about confidentiality

Annex D: Analytical Framework

1. Background *(Please note anything about the interview situation and the participating SHP that has bearing on the data or the findings.)*

- 1.1 Overview of the housing association's properties: the number and type of units they own and their geographic spread.
- 1.2 Overview of housing association's management: how they are governed, general policies used and whether they are part of a group.
- 1.3 Description of the interviewee: their position within the housing association, what team they are in and how much influence they have on decision making.
- 1.4 Description of current heating systems: the types of heating systems present in situations where gas mains are/are not present, existence of shared heating systems.
- 1.5 Happiness with current heating systems and any considerations for new heating systems.
- 1.6 Any other relevant background information about the social housing provider with potential to have an impact on their views and experience of the RHI/Renewable Heating Technologies.

2. RHI Status

- 2.1 Whether they have applied to the RHI.
- 2.2 Whether their application to the RHI was for installations made before or after the scheme was launched (e.g. whether they were legacy applications).
- 2.3 Whether they are currently in receipt of payments from the RHI.
- 2.4 Whether they applied to the previous strand of funding: the RHPP.
- 2.5 Whether they have applied to any other sustainable energy funding streams and if so, any notable characteristics of these funds.

3. Hearing about RHI

- 3.1 How they heard about the RHI.
- 3.2 (a) If an applicant, then ask about their reasons for applying (e.g. what influenced take-up of RHI). (b) If a non-applicant, then their reasons for not applying.
- 3.3 Understanding of RHI (Note: a) purpose of RHI and b) Understanding of rates of return in particular and impact of this).

4. Asset management and heating system replacement process

- 4.1 The planning and decision making process, including: (a) how new heating technologies come to the management's attention, (b) the criteria and factors that are considered when choosing a heating system for replacement and (b) the process for deciding a programme of work.
- 4.2 The decision making process for heating systems in new builds.
- 4.3 Contractual arrangements for heating system maintenance.
- 4.4 Arrangements for planned and reactive maintenance.
- 4.5 How tenders for heating system replacement works are evaluated.

5. Governance of procurement

- 5.1 Any internal policies which are used for guiding asset management and procurement.
- 5.2 Any external policies which are used for guiding asset management and procurement.
- 5.3 Which staff within the SHP are involved in the procurement process and whether there are any staff responsible for making the SHP more sustainable who have an influence in the process.
- 5.4 Whether any organisations external to the SHP are involved in the procurement process.
- 5.5 Whether the tenants have any influence on the procurement process.
- 5.6 Information sources which are used to inform procurement.
- 5.7 How procurement is financed and how the business plan for this is developed.

6. Attitudes to RHTs

- 6.1 The factors that encourage uptake of renewable heating technologies within the SHP: (a) technical drivers, (b) supply chain motivators or enablers, (c) internal and external policy, (d) environmental reasons, (e) benefits for tenants.
- 6.2 What factors would be likely to encourage greater uptake of renewable heating technologies.
- 6.3 What factors represent a barrier to the uptake of renewable heating technologies: (a) supply chain and market barriers, (b) administrative or policy barriers, (c) prioritisation of other works, (d) acceptance by tenants, (e) technical barriers, (f) financial barriers, (g) capacity barriers.
- 6.4 How the SHP rates renewable heating technologies in comparison to other heating technologies.

7. Experience with RHTs

- 7.1 How decisions are made to choose RHTs to fit with particular situations.
- 7.2 How procurement of RHTs is financed.
- 7.3 Experience of the installation process and how straight forward it was to find an installer.
- 7.4 How good the level of protection is for RHTs and whether this is a deciding factor in the decision making process.
- 7.5 Whether adequate maintenance support is available for RHTs, and whether this knowledge exists within the organisation or if it has to be brought in from outside.
- 7.6 What the experience has been of tenants living with RHTs.

8. Applying for RHI

- 8.1 Overview of application process
- 8.2 Where the SHP would go to get more help with the application process.

9. Living with RHI

- 9.1 How the existence of the RHI now influences decision making processes.
- 9.2 Would the SHP have still installed their RHTs if the RHI had not existed?
- 9.3 RHI payments (Note: a) How much they receive and b) views on how these are worked out – e.g. do they understand the process etc.).
- 9.4 If the SHP know where to go to help with the RHI.
- 9.5 Whether the SHP has any future plans for use of the RHI.

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