



# EQUINOX: Customer Engagement Method Statement

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# 1 INTRODUCTION

## 1.1 Background

EQUINOX (Equitable Novel Flexibility Exchange) is an innovative four-year project led by National Grid Electricity Distribution (NGED), which aims to unlock the flexibility of residential electric heat pumps through the design and trial of innovative commercial agreements and supporting technologies, while meeting the needs of all consumers, including the fuel poor or vulnerable.

Customer engagement is critical to the success of EQUINOX, which is designed to put customers at its centre. The trial seeks to enrol some 1,000 participant households from within NGED's distribution region across the four years of the project, which runs from 2022 to 2025.

The project's goal is to capture learnings that can be scaled to help decarbonise residential heating in the most cost-efficient way for customers and follows NGED's successful submission to the Network Innovation Competition (NIC) fund. In essence, the trial will reward participating households with heat pumps for temporarily altering their heating without compromising on comfort at home.

## 1.2 Research scope

Primary market research was conducted to inform both the design and roll out of the trial and the strategy that would be used to recruit participants into it. In the wider context, the research sought to understand attitudes towards heat pumps and likelihood of adopting such a low carbon technology for home heating, as well as to uncover ways of shaping customer preference with a view to driving uptake of heat pumps.

The engagement exercise required both quantitative and qualitative approaches to be undertaken. Quantitative research included the design and delivery of online and face-to-face survey research with customers, while the qualitative research involved undertaking focus groups and in-depth interviews with household participants.

## 1.3 Research objectives

The aims of the quantitative and qualitative exercise together were:

- To understand current attitudes towards heat pumps, to include awareness, understanding of the technology, acceptance and likelihood of uptake
- To uncover how current customer attitudes and beliefs about heat pumps might be shaped to promote adoption
- To explore customers' views and perspectives on the proposed EQUINOX trial, including reactions to being asked to modify their home heating habits and behaviours
- To present and capture feedback on the various commercial arrangements being proposed as part of the EQUINOX trial

The 'equitable' nature of EQUINOX meant that it was critical to the success of primary market research that the views of all customers were taken into account, delivering the above objectives by reaching the most diverse audience possible. The research was designed in light of this key consideration.

Accent conforms to the requirements of ISO20252:2012

# 2 METHODOLOGY

## 2.1 Quantitative approach

### Questionnaire design

A questionnaire of approximately 15 minutes' duration was designed to fulfil the objectives of the research. It included the following blocks of questions:

- Scoping and sociodemographic questions
- Environmental attitudes (including views on climate change, awareness of net zero targets and agreement with these, energy saving attitudes and behaviours)
- Current home heating system and fuel
- Heat pumps (current levels of awareness and understanding, attitudes towards them as a home heating solution, including acceptability and likelihood of installation)
- Thermal storage systems (attitudes towards them as part of a home heating solution, including acceptability and likelihood of installation)
- Smart thermostats (current usage, current levels of understanding, attitudes towards them as part of a home heating solution and likelihood of installation)
- Flexible electricity tariffs (attitudes, acceptability and likelihood of uptake)
- Drivers of adopting these heating solutions and technologies
- Current home thermostat settings and willingness to flex this setting
- Willingness to engage in the behaviours required of EQUINOX trialists (being flexible on heating timings, allowing third party control of heating)

Questions were designed to be easy to understand and accessible. In order to optimise response rate, questions were primarily closed, but the questionnaire included a small number of open-ended questions. Working on the assumption that the levels of awareness and understanding the various heating technologies being explored by this research varied across the groups survey, a number of participant-friendly stimuli were developed and embedded within the questionnaire to introduce and explain these. A copy of the survey questionnaire, including these embedded stimuli, can be found in **Appendix A**.

Once designed and agreed, the survey questionnaire was programmed into Accent's proprietary Accis software, which allows for administration in multiple modes and offers device-responsive design to those participants completing the survey online.

## Cognitive testing

Once programmed, the questionnaire was cognitively tested to ensure accessibility and comprehensibility of the questionnaire and its embedded stimuli. The secondary focus was to ensure a universal interpretation of the questions and related response options. This process was important as the survey focused on novel concepts and technology that may have been unfamiliar to some participants. Cognitive interviewing involves taking a participant through the survey and includes additional questions to probe for levels of comprehension, ease of completion and response to stimuli.

Six cognitive interviews were completed, with participants from a range of age groups, social grades and genders. In addition, this qualitative sample included owner-occupiers and tenants, as well as current and future energy customers.

Cognitive interviews took place online over Zoom. The interviewer shared their screen and gave control to the participants so they could independently navigate through the questionnaire. Participants were asked to work through the questionnaire autonomously whilst “thinking aloud” their decision-making processes. They were also asked to highlight areas of the questionnaire that were inaccessible, difficult to understand, or troublesome to navigate or complete.

At key points during questionnaire completion, interviewers used additional cognitive probes to assess how well question wording had been understood, the clarity of stimulus material, and how easy or difficult it was for the participant to provide an answer. These additional cognitive probes collectively formed the topic guide, which was used to direct all interviews. The cognitive interview topic guide can be found in **Appendix B**.

Cognitive testing identified scope for improvement, which fell into the following categories:

- Improvements to question wording to improve accessibility or add clarity
- Changes to response options (codes), including order presentation, to make answering easier
- Amendments to questionnaire stimuli to improve presentation, make easier to read or understand, or to expand the information being made available, or to make more visually appealing

With agreement, changes proposed as a result of cognitive testing were implemented and the questionnaire finalised.

## Questionnaire administration

Once finalised, the questionnaire was administered in 2 modes; both online and face-to-face. To supplement the online sample, a face-to-face boost was designed to ensure representation from digitally disengaged individuals and those with other characteristics and vulnerabilities that make them less likely to use the internet and thus more likely to be under-represented in research.

## Online sample

A commercial online panel provider was engaged to deliver the UK-wide online household customer sample for the quantitative research. Sociodemographic quotas were placed on the following factors in order to ensure that the achieved sample was as representative of the UK population as possible:

- Sex
- Age
- Social grade (SEG)
- UK region

A total of 2,023 online responses were achieved.

Online research was conducted during August and September 2022. The panel provider aggregates online participants from various sub-panels. As such, incentive values vary according to the source panel. However, participants received 'panel currency' in exchange for their response. Panel currency can later be exchanged for vouchers for major UK supermarkets (e.g., Sainsbury's, Tesco), high street retailers (e.g., John Lewis, TK Maxx) or online stores (e.g., Amazon). Alternatively, panellists can opt to convert their currency into a charitable donation.

## Face-to-face sample

In addition to the online sample, a face-to-face boost sample was designed to ensure representation from the following groups, members of which are less likely to be represented on online panels:

- Black, Asian and Minority Ethnic (BAME) communities
- Those for whom English is a foreign language
- Financially vulnerable (defined as those who experience any degree of difficulty in paying utility and other household bills)
- Digitally disengaged participants

400 face-to-face household interviews covering these groups were conducted by Accent's experienced field interviewing team using Computer-Assisted Personal Interviewing (CAPI). Much like for the online sample, quotas were placed on these characteristics. Participants within this boost sample often showed multiple characteristics that made them eligible for inclusion in the sample.

Face-to-face research was conducted during August 2022. Face-to-face participants were paid £5 in cash for completing the survey.

## Data processing, weighting and analysis

Once fieldwork was completed, the resulting dataset was cleaned to remove poor quality responses (including speeders, straightliners, multiple responses from the same IP address

and those providing poor quality verbatim). For open-ended questions, coding frames were developed, and responses coded.

Despite sociodemographic quotas being placed on the online sample, once online and face-to-face fieldwork was completed, the combined dataset of 2,423 cases was weighted such that it would provide population-based findings and insights. Age, gender and region weighting was based on 2021 Census estimates. SEG weighting was based on 2011 Census data (the most up to date SEG data available).

Tabulations by key characteristics and other sociodemographic groups were created and significance testing undertaken on the resulting tables.

## 2.2 Qualitative approach

### Overview

To complement and build upon the findings of the survey research, qualitative exploration was added to the design of the customer engagement exercise in order to provide an in-depth understanding of:

- Current heating systems/technologies, attitudes and home heating behaviours
- Awareness, understanding and perceptions of alternative heating solutions, including heat pumps and thermal storage systems
- Likelihood of adopting heat pumps, including drivers of and barriers to installation; and
- To assess reactions to and opinions on the principles and operational design – including communications and commercial arrangements – of the EQUINOX trial

This phase of the research comprised both online focus groups and telephone in-depth interviews.

### Focus Groups

#### Structure

A structure of 18 Focus groups was designed, all of which were conducted with household participants, took place in the evening online using the Zoom meeting platform and were 90 minutes in duration. 6 Participants were recruited for attend each group, although attendance varied (between 3 and 6 per group).

Participants in each focus group were defined by:

- Life stage (pre-family, family, empty nesters/retired)
- The age of the property they lived in (built before 1900, 1900-2000, 2001 or more recently)
- Occupancy type (homeowner, tenant)



While focus groups were defined by these factors key to the topic under investigation, additional sociodemographic quotas were placed on research recruits to ensure broad representation from all members of society. Participants were recruited from England, Scotland and Wales and quotas were imposed on additional factors, including:

- Sex
- Social grade (SEG)
- Urban/suburban and rural households
- Whether off-gas
- Social and private tenants (for tenant focus groups)

Focus groups were moderated during October and November 2022 by Accent’s senior qualitative research specialists and were video recorded for later analysis. The following table outlines the structure and composition of focus groups:

	Group 1	Group 2	Group 3	Group 4	Group 5	Group 6
<b>Life stage</b>	Pre-family	Pre-family	Family	Family	Empty nester/retired	Empty nester/retired
<b>Property age</b>	Pre-1900	Pre-1900	Pre-1900	Pre-1900	Pre-1900	Pre-1900
<b>Occupancy type</b>	Homeowner	Homeowner	Tenant	Homeowner	Homeowner	Tenant
	Group 7	Group 8	Group 9	Group 10	Group 11	Group 12
<b>Life stage</b>	Pre-family	Pre-family	Family	Family	Empty nester/retired	Empty nester/retired
<b>Property age</b>	1900 to 2000	1901 to 2000	1900 to 2000	1901 to 2000	1900 to 2000	1901 to 2000
<b>Occupancy type</b>	Tenant	Homeowner	Homeowner	Tenant	Homeowner	Homeowner
	Group 13	Group 14	Group 15	Group 16	Group 17	Group 18
<b>Life stage</b>	Pre-family	Pre-family	Family	Family	Empty nester/retired	Empty nester/retired
<b>Property age</b>	Post 2000	Post 2000	Post 2000	Post 2000	Post 2000	Post 2000
<b>Occupancy type</b>	Homeowner	Tenant	Homeowner	Homeowner	Tenant	Homeowner

### Recruitment and sample

Accent engaged its trusted recruitment partner, Roots, to manage recruitment for this phase of the research. Roots specialise in sourcing highly engaged participants for qualitative research across all subject areas, including for focus groups and in-depth interviews.

Accent developed, in discussion with the wider EQUINOX team, a recruitment questionnaire (RQ) that would be used by Roots when screening and selecting participants

for the research (see **Appendix C**). This RQ ensured that each group was attended by participants of the required key customer groups, as defined above, but also reflected the additional sociodemographic quotas that were included to ensure good representation from across the population. Further, the RQ included a question to ensure that ‘climate change deniers’ were excluded from the recruited sample, as it was felt that such individuals may have a negative and disruptive impact on discussions on this topic.

Across the 18 focus groups, a total of 91 participants were included in the sample, broken down as follows:

Factor	Category	Number
Life stage	Pre-family	30
	Family	31
	Retired/Empty nesters	30
Property age	Pre-1900	30
	1900 – 2000	30
	Post 2000	31
Occupancy type	Homeowner	61
	Social tenant	18
	Private tenant	12
Sex	Male	39
	Female	52
Social grade	ABC1	56
	C2DE	35
Urban-suburban/rural	Urban/suburban	50
	Rural	41
Off-gas	On mains gas	71
	Off-gas	20

Focus group participants received a £50 payment, made by bank transfer, for their contribution to the research.

## In-depth interviews

### Structure and rationale

As an adjunct to online focus groups, 6 in-depth interviews were conducted by telephone to ensure the inclusion of digitally disengaged and otherwise under-represented individuals in the qualitative sample. Participants falling into these groups are likely to be older, thus we did not seek representation from individuals of all life stages in this subsample. Rather, interviews aimed to engage those who do not regularly use the internet, are from BAME ethnicities, those whose first language is not English (or those who live with someone for whom English is a foreign language), or who are financially vulnerable in the context of energy.

In-depth interviews were again undertaken during October and November 2022 and conducted by Accent’s experienced and empathetic interviewers. Interviews lasted around 60 minutes and the interviewer took comprehensive notes during the call for inclusion in the later analysis.

## Recruitment and sample

As with focus groups, Accent designed a bespoke RQ for this element of the fieldwork (see **Appendix D**) and shared it with Roots once approved by the EQUINOX team. Roots undertook recruitment of in-depth interview participants, scheduling interviews at a time to suit the participant. The following sample was achieved:

Factor	Category	Number
Occupancy type	Homeowner	4
	Social tenant	2
	Private tenant	0
Sex	Male	2
	Female	4
Ethnicity	White	3
	BAME	3
English as a foreign language	EFL	2
	Non EFL	4
Financial vulnerability	Vulnerable	6
	Not vulnerable	0
Digitally disengaged	Disengaged	6
	Not disengaged	0

Those who took part in an interview received a £50 payment, made by bank transfer, for their time and contribution.

## Pre-task

Both focus group and in-depth interview participants were asked to complete a preparatory task before taking part in their focus group or interview.

### Focus group pre-task

Participants were registered on our qualitative research platform, Liveminds, and sent an email invitation requesting that they complete a small number of tasks ahead of their focus group date.

The tasks sought to establish participants' living situation and current heating set-up, thermostat preferences and baseline knowledge about alternative heating solutions. In addition, the pre-task required them to undertake brief online research into heating systems available that might be an option instead of their current setup.

These tasks were set in order that participants could attend their group with a good level of knowledge and awareness, allowing for more considered and informed responses. A copy of the tasks set can be found in **Appendix E** to this document.

### In-depth interview pre-task

The qualitative pre-task was initially designed for digitally engaged focus group participants. This was then adapted for those who would take part in telephone in-depth interviews. These tasks required no online research but asked participants to describe their living situation and current home heating setup, consider future heating solutions and read stimulus materials designed to inform them about heat pumps and thermal storage systems, which was based on stimuli used in the survey questionnaire. The pre-task was

shared either by email or post and was dictated by each participant's preference. A copy of the adapted tasks for interview participants can be found in **Appendix F**.

Both focus group and in-depth interview pre-tasks were designed to take around 30 minutes and the incentive payments detailed above include a sum for completing this preparatory element.

## Topic guides and stimuli

Developed initially for focus groups, and later adapted for use during in-depth interviews, Accent designed topic guides to direct qualitative research discussions, which were approved by the EQUINOX team. These guides set out all areas for discussion and exploration, starting from the general and working into the more specific project-critical questions and probes, and were used to provide structure to both focus groups and in-depth interviews. Through the use of tailored topic guides, it was ensured that data was captured to fulfil all objectives of the qualitative research. Coverage included:

- Moderator and participant introductions
- Sharing of current home heating setup along with benefits and detractions
- Awareness and knowledge of alternative heating solutions, including early perspectives
- Factors that might drive uptake of heat pumps and thermal storage and barriers to adoption
- Sharing and capturing feedback on proposed EQUINOX communications
- Presenting and seeking responses to the commercial arrangements for the first phase of the EQUINOX trial
- Gauging willingness in principle to take part in EQUINOX

The focus group topic guide, which was condensed and abbreviated for use during in-depth interviews, can be found in **Appendix G**.

To support the comprehensive topic guide, visual stimuli were developed for presentation during online focus groups. The stimulus pack included summary information about heat pumps and thermal storage systems (to supplement or corroborate participants' learnings from the pre-task and again based on the survey stimuli used earlier); customer-facing communications on the EQUINOX trial and a number of operational designs and commercial arrangements for those participating in the trial. Whilst it was not possible to present these elements to telephone participants, the summary information on heat pumps and thermal storage systems was provided in interview participants' pre-tasks.

The stimulus pack used for focus groups can be found at **Appendix H**.

## Analysis

Moderators took and wrote up comprehensive notes during the online sessions they hosted, and a number of the 18 focus groups were also transcribed for later analysis and in order to provide pertinent quotes to support themes and findings.

Thematic and content analysis was undertaken by charting both notes and quotes as well as content captured during participants' pre-tasks. This allowed for the identification of themes consistent between groups and in-depth interviews and map content directly to the research objectives.

An analysis session was then undertaken, attended by all moderators, with a view to uncovering similarities and differences across focus group sessions. This allowed for the formation of an overall picture of customers' attitudes and perceptions, and any key demographic or attitudinal differences.

## 2.3 Synthesis and reporting

Quantitative research was undertaken and completed before qualitative fieldwork started. This allowed for the insights from the quantitative phase to inform the development of the approach and materials for qualitative exploration.

Analysis of the survey research was reported and presented to the EQUINOX team ahead of qualitative engagement starting. These quantitative insights were then used as the context in which to analyse qualitative data. Qualitative analysis looked for and identified consistencies with survey data as well as areas where the data from each approach told differing stories. In this way, quantitative and qualitative data were integrated and synthesised to provide an overall picture of customer attitudes.

# Appendix A

Survey questionnaire



# 3563 / EQUINOX Project Primary Market Research

## Survey Questionnaire

**THROUGHOUT THIS QUESTIONNAIRE BOLD TYPEFACE DENOTES EITHER PROGRAMMING INSTRUCTIONS/ OR FIELD INTERVIEWER INSTRUCTIONS**

**PROJECT MANAGER:** [Click here for guidance on what to put in this section](#)  
Pls tick methodology, and where applicable nominate “back checking questions” (AKA “BCQs”)

Online	<input checked="" type="checkbox"/>			
CATI only	<input type="checkbox"/>		(DP: add QAX)	
CAPI/Tablet	<input checked="" type="checkbox"/>	(If yes <b>PM</b> Nominate 3*Backchecking Questions: Q12, Q13, Q21	)QAZ2 .....	<input type="checkbox"/> ..... <input type="checkbox"/> Paper
showcard? Y	N			
CATI recruit for online/field	<input type="checkbox"/>	( <b>PM</b> pls. Nominate BCQs: Q12, Q13, Q21	)QAZ3	
Field recruit for online/CATI	<input type="checkbox"/>	( <b>PM</b> pls. Nominate BCQs:	)QAZ1	
Recruit only (i.e. for qual)	<input type="checkbox"/>			

## Heating our homes for the future



### TABLET/CAPI:

Good morning/afternoon/evening. My name is ..... from Accent and I am carrying out research for Western Power Distribution into home heating, in particular, heat pumps, thermal storage systems and automation of heating.

The research is being conducted under the Market Research Society Code of Conduct, which means that any answers you give will be treated in confidence.

Anyone completing the full survey will be eligible for £5.

Can I just ask you a couple of questions to check that you are eligible to take part in this research?

### ONLINE:

Thank you very much for agreeing to complete this on-line survey which is being conducted by Accent.

We will ask you a few questions to check that you are eligible to take part in this research.

Any answers you give will be treated in confidence in accordance with the Code of Conduct of the Market Research Society. If you would like to confirm Accent’s credentials type ‘Accent’ in the search box at: <https://www.mrs.org.uk/researchbuyersguide>.

**IF MOBILE DEVICE SHOW:** This survey is best undertaken on a tablet or a PC. If you do use a smartphone you can switch between desktop mode and mobile mode at any time by clicking the button at the bottom of the screen.

## Looking after your data

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1. Any data collected over the course of this interview that could be used to identify you, such as your name, address, or other contact details, will be held securely and will not be shared with any third party unless you give permission (or unless we are legally required to do so). Our privacy statement is available at <https://www.accent-mr.com/privacy-policy/>.

Do you agree to proceeding with the interview on this basis?

Yes

No **THANK AND CLOSE**

## About you

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2. **ASK CAPI ONLY. OTHERS GO TO Q6:** In line with government guidelines we have a few questions to check your Covid-19 status. Are you or anyone you have been in close contact with currently experiencing any flu-like symptoms or other Covid-19 symptoms?  
**INTERVIEWER NOTE: THIS WOULD INCLUDE HIGH TEMPERATURE AND/OR LOSS OF SENSE OF TASTE OR SMELL**

Yes **THANK AND CLOSE** On this occasion we will not be able to continue with the survey due to Covid-19 guidelines. Thank you for your time

No

3. **ASK CAPI ONLY. OTHERS GO TO Q6:** Have you or anyone you have been in close contact with been diagnosed with Covid-19 within the past two weeks, and not subsequently tested negative?

Yes **THANK AND CLOSE** On this occasion we will not be able to continue with the survey due to Covid-19 guidelines. Thank you for your time

No

4. **ASK CAPI ONLY. OTHERS GO TO Q6:** Are you someone who is defined as either Clinically Extremely Vulnerable or Clinically Vulnerable?  
**INTERVIEWER NOTE: THEY WILL HAVE BEEN INFORMED OF THIS STATUS EARLY ON IN LOCKDOWN**

Yes **THANK AND CLOSE** On this occasion we will not be able to continue with the survey due to Covid-19 guidelines. Thank you for your time

No



- 
5. **ASK CAPI ONLY. OTHERS GO TO Q6:** Are you currently shielding to protect yourself from Covid-19 or caring for someone else who is especially vulnerable to Covid-19?

Yes **THANK AND CLOSE** On this occasion we will not be able to continue with the survey due to Covid-19 guidelines. Thank you for your time

No

- 
6. Do you, or any of your close family, work, or have worked in the recent past, in any of the following professions? **MULTICODE EXCEPT FROM CODE 7**

Market research **THANK AND CLOSE**

Electricity generation

Electricity distribution

Water

Gas distribution

Gas generation

None of these **EXCLUSIVE**

- 
7. In which region of the UK do you live?

East of England (East Anglia)

East Midlands

London

North East

North West

South East

South West

West Midlands

Yorkshire and the Humber

Wales

Scotland

Northern Ireland

Prefer not to say

- 
8. Which ONE of the following best describes the occupation of the main income earner in your household? If you or the main income earner are self-employed, please tick the option that most relates to the type of work you/they do for the company(s) you/they work for.

1. Higher managerial, professional or administrative (e.g. Doctor, Solicitor, Board Director in a large organisation with 200+ employees, top level civil servant or public service employee etc.)
2. Intermediate managerial, professional or administrative (e.g. Newly qualified (under 3 years) Doctor, Solicitor, Board Director of a small organisation, middle manager in a large organisation, Principle Officer in civil service or local government etc.)
3. Supervisor; clerical; junior managerial administrative or professional (e.g. Office worker, Student Doctor, Foreman with 25+ employees, salesperson, etc.)
4. Skilled manual worker (e.g. Bricklayer, Carpenter, Plumber, Painter, Bus or Ambulance Driver, HGV driver, pub or bar worker etc.)
5. Semi or unskilled manual worker (e.g. Caretaker, Park keeper, non-HGV driver, shop assistant etc.)
6. Student
7. Unemployed or not working due to long-term sickness
8. Casual worker – not in permanent employment
9. Full-time carer of other household member
10. Retired
11. Rather not say **THANK AND CLOSE for online and F2F**

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9. **ASK IF 8=10 (RETIRED). ALL OTHERS GO TO Q12:** Does the main income earner have a state pension, a private pension or both?

1. State only
2. Private only
3. Both

---

10. **ASK IF Q9 = PRIVATE ONLY OR BOTH. ALL OTHERS GO TO Q12:** How would you describe the main income earner's occupation before retirement?

1. Higher managerial, professional or administrative (e.g. Doctor, Solicitor, Board Director in a large organisation with 200+ employees, top level civil servant or public service employee etc.)
2. Intermediate managerial, professional or administrative (e.g. Newly qualified (under 3 years) Doctor, Solicitor, Board Director of a small organisation, middle manager in a large organisation, Principle Officer in civil service or local government etc.)
3. Supervisor; clerical; junior managerial administrative or professional (e.g. Office worker, Student Doctor, Foreman with 25+ employees, salesperson, etc.)
4. Skilled manual worker (e.g. Bricklayer, Carpenter, Plumber, Painter, Bus or Ambulance Driver, HGV driver, pub or bar worker etc.)
5. Semi or unskilled manual worker (e.g. Caretaker, Park keeper, non-HGV driver, shop assistant etc.)
6. None of these

---

11. **SEG: CODE AS FOLLOWS:**

IF 8= 1 or 2; SEG = AB

IF 8 = 3; SEG = C1

IF 8 = 4; SEG = C2

IF 8 = 5-9; SEG = DE

IF 8 = 10 and Q9 = State only; SEG = DE

IF 8 = 10 and Q9 = Private only OR Both and 10 = 1 or 2; SEG = AB

IF 8 = 10 and Q9 = Private only OR Both and 10 = 3; SEG = C1

IF 8 = 10 and Q9 = Private only OR Both and 10 = 4; SEG = C2

IF 8 = 10 and Q9 = Private only OR Both and 10 = 5 OR 6; SEG = DE

---

12. Are you...

Male

Female

Prefer to self-identify

Prefer not to say (CAPI: DO NOT READ OUT)

**CHECK QUOTAS**

---

13. Which of the following age groups do you fall into?

18-24

25-29

30-44

45-64

65+

Prefer not to say (CAPI: DO NOT READ OUT)

**CHECK QUOTAS**

---

14. To which of these ethnic groups do you consider you belong?

**CAPI:** To which of these ethnic groups do you consider you belong? **READ OUT. STOP WHEN GIVEN AN ANSWER**

**A: WHITE**

British

Irish

Any other White background

**B: MIXED**

White and Black Caribbean

White and Black African

White and Asian

Any other Mixed background

**C: ASIAN OR ASIAN BRITISH**

Indian

Pakistani

Bangladeshi

Any other Asian background

**D: BLACK OR BLACK BRITISH**

Caribbean

African

Any other Black background

**E: CHINESE OR OTHER ETHNIC GROUP**

Chinese

Any other ethnic group

Decline to answer

---

15. Is your, or is someone in your household's, first language one other than English?

Yes

No

Prefer not to say/Don't know

---

16. **ASK ALL** These days, with the current state of the economy, a lot of people are struggling to pay their household bills. Which of the following best describes how affordable you find your energy bills (or energy costs if you do not receive a bill) and other household bills? Please remember, this research is entirely confidential and that it is only by reaching people in debt, or struggling to pay their bills, that change can be influenced.

1. I can always afford to pay my energy bill (or top up my gas card/electricity key), and other household bills, on time and do not need to conserve my energy or go without other things to do so
2. I can always afford to pay my energy bill (or top up my gas card/electricity key), and other household bills, on time but only because I conserve my energy or go without other things to do so
3. I can always afford to pay my energy bill (or top up my gas card/electricity key) on time, but sometimes struggle, or am late, paying other bills
4. I sometimes pay my energy bill (or top up my gas card/electricity key) late because I am struggling financially
5. I am often unable to afford to pay my energy bill (or top up my gas card/electricity key) on time
6. I am rarely, or never, able to afford to pay my energy bill (or top up my gas card/electricity key) on time
7. Prefer not to say

**Q16b. FINANCIAL\_VULNERABILITY: CODE AS FOLLOWS**

IF **Q16** = 1; FINANCIAL\_VULNERABILITY = NO

IF **Q16** = 2 or 3 or 4 or 5 or 6; FINANCIAL\_VULNERABILITY = YES

---

**17. CAPI ONLY: ALL OTHERS GO TO 20:** Have you used the Internet via a computer, tablet or smartphone in the last 3 months?

1. No
  2. Yes
  3. Prefer not to answer
- 

**18. CAPI ONLY: ALL OTHERS GO TO 20:** Which of the following best describes you?

1. I feel very confident about using the internet
  2. I feel quite confident about using the internet
  3. I don't feel confident about using the internet
  4. I would rather not use the internet at all
  5. Prefer not to answer
- 

**19. CAPI ONLY: ALL OTHERS GO TO 20:** Which of these items do you have in your home and that are available for you to use? **MULTICODE**

1. Smartphone
2. Tablet
3. Laptop or desktop computer
4. None of the above

**Q19b. DIGITAL\_EXCLUSION: CODE AS FOLLOWS**

IF **Q17** = 1 OR **Q18** = 3 or 4 OR **Q19** = 4; DIGITAL\_EXCLUSION = YES

IF **Q17** = 2 or 9 OR **Q18** = 1 or 2 or 9 OR **Q19** = 1 or 2 or 3; DIGITAL\_EXCLUSION = NO

---

**20. Who is responsible for paying your household's energy bills?**

1. I am solely responsible
2. I am responsible with another member/other members of our household
3. I have no responsibility for paying the energy bills IF 13=3-6 THANK AND CLOSE. IF 13=1-2 CODE AS FUTURE CUSTOMER

**Q20b. CURRENT\_OR\_FUTURE-CUSTOMER: CODE AS FOLLOWS**

IF **Q20** = 1 or 2; CURRENT\_OR\_FUTURE-CUSTOMER = CURRENT

IF **Q13** = 1 or 2 AND **Q20** = 3; CURRENT\_OR\_FUTURE-CUSTOMER = FUTURE

---

21. Which of the following best describes your household?

1. I/we own my own home (mortgage or outright)
2. I/we own my own home (through a shared ownership or Keyworker scheme)
3. I/we rent from a private landlord
4. I/we live in Student Accommodation
5. I/we rent from a Housing Association/Council
6. I/we live with my parents
7. Don't know **THANK & CLOSE**

**Q21b. OCCUPANCY\_TYPE: CODE AS FOLLOWS**

IF **Q21** = 1 or 2; OCCUPANCY\_TYPE = HOMEOWNER

IF **Q21** = 3 or 4 or 6; OCCUPANCY\_TYPE = PRIVATE\_TENANT

IF **Q21** = 5; OCCUPANCY\_TYPE = SOCIAL\_TENANT

---

22. Would you describe the area that you live in as... **SINGLE CODE**

- Rural
- Semi-rural
- Urban (areas with a population over 10,000)
- Don't know
- Prefer not to say (**CAPI: DO NOT READ OUT**)

---

23. Is your property connected to the [Mains Gas Grid](#)?

- Yes
- No
- Don't know

**FOR CAPI** Add quota summary screen for interviewers to check quotas achieved **AGE/GENDER/SEG** and if **DIGITALLY EXCLUDED** THEN allow them to either continue to **MAIN INTRO** or **thank and close**.

### Thanks, we're now ready to move on

Thank you for those background details about you and your household. We can now move onto the main part of the questionnaire which will take about 10 to 15 minutes to complete.

**ONLINE:** For convenience you can stop and return to complete the questionnaire as many times as you wish, although once submitted you will not be able to enter again.

We're going to start by asking you a few questions about the environment and your attitudes towards it

## Environmental attitudes

---

24. How would you rate your knowledge on the following topics?

**DP: 5 POINT SLIDING SCALE: LHS = NO KNOWLEDGE/CENTRE = MODERATE KNOWLEDGE/RHS = HIGH KNOWLEDGE. INCLUDE D/K RESPONSE**

Climate change, sometimes referred to as 'global warming'

Greenhouse gas emissions

Government initiatives to reduce greenhouse gas emissions

Energy conservation at home

Industry initiatives to reduce greenhouse gas emissions

---

25. How worried or unworried are you about the impact of climate change?

Very worried

Somewhat worried

Neither worried nor unworried

Somewhat unworried

Not at all worried

---

26. Considering your own personal situation and circumstances, how much do you agree or disagree with the following statements about energy use and heating?

---

**ROTATE**

**DP: 5 POINT: 1=STRONGLY DISAGREE/5=STRONGLY AGREE. INCLUDE D/K**

We should all try to reduce our home energy use to help the environment

I would pay more for electricity produced from green technologies

I am interested in learning about new technology and products that could reduce my energy bills

I am interested in learning about different heating systems

I am interested in trying different heating systems

I would like to learn more about heat pumps as a means of providing heating and hot water for my home.

---

27. How much thought, if any, would you say you give to saving energy in your home?

A lot

A fair amount

Not very much

None at all

Don't know

---

28. **ASK IF 27 = 1 'A LOT' OR 2 'A FAIR AMOUNT'. ALL OTHERS GO TO 29.** Why do you give thought to saving energy in your home?

For both financial and environmental reasons (to save money and reduce the impact on climate change)

For financial reasons (to save money)

For environmental reasons (to reduce the impact on climate change)

For another reason (please specify)

---

29. Thinking now about your everyday life, do you do any of these things **to help limit the effects of climate change?** **MULTICODE**

**ROTATE EXCEPT LAST 3**

Choose to walk, cycle or use public transport more instead of using a car

Avoid/Eat less meat

Avoid/Eat less dairy produce

Avoid/minimise throwing away food

Drive an electric or hybrid car

Think about the energy efficiency of products and appliances when making a purchase

Minimise the amount of energy you use at home (for example washing at lower temperatures, switching off lights, heating only specific rooms)

Avoid/minimise air travel

Something else (please write in) **ALWAYS THIRD FROM LAST**

None of the above **EXCLUSIVE/ALWAYS PENULTIMATE**

Don't know **EXCLUSIVE/ALWAYS LAST**

---

30. **FOR CAPI – SHOW SCREEN and ZOOM in on showcard**

## Net Zero by 2050

The UK government has set a target for reducing UK carbon emissions to 'net zero' by 2050. By achieving 'net zero' emissions, the UK will no longer contribute to climate change

This will involve significantly reducing emissions from different activities, such as how we drive, how we eat and how we use energy, including the electricity we consume

Any remaining carbon emissions would be 'offset' by technologies and actions that reduce greenhouse gases in the atmosphere. Examples of carbon 'offsetting' activities include creating or restoring habitats which absorb emissions, such as tree planting or rewilding.



---

To what extent were you aware of the UK's net zero target?

Hadn't heard about this before now

I'd heard about this before now, but I know almost nothing about it

A little

A fair amount

A lot

Don't know

---

31. To what extent do you agree or disagree with the UK's net zero target?

- Strongly agree with the net zero target
- Somewhat agree with the net zero target
- Neither agree nor disagree with the net zero target
- Somewhat disagree with the net zero target
- Strongly disagree with the net zero target
- Don't know

---

Q31b. To what extent do you agree or disagree with the following statement:

“I personally support the UK’s net zero target by changing my own habits and behaviours”

**DP: 5 POINT: 1=STRONGLY DISAGREE/5=STRONGLY AGREE. INCLUDE D/K**

---

32. You said that you <31 response> the UK’s net zero target. Please explain why you feel this way. **ALLOW P TO SKIP EVEN IF NO TEXT INPUT**

**OPEN TEXT BOX**

## Your home heating system

---

33. Roughly when was your property built?

- Pre-1919
- 1919-1944
- 1945-1964
- 1965–1980
- Post 1980
- Don't know

---

34. Which of the following types of property best describes your accommodation?

- Purpose built flat or maisonette
- Converted flat or maisonette
- Mid-terrace
- End-terrace
- Semi detached
- Bungalow
- Detached
- Other
- Don't know **(CAPI: DO NOT READ OUT)**



---

35. Which fuel is used for your main home heating system? That is, for heating the rooms in your home.

Gas central heating

Electric room-by-room heating: storage heaters

Electric room-by-room heating: electric radiators or panel/fan/convection heaters

Electric central heating (conventional electric boiler serving a network of connected radiators)

Electric central heating (using an air source heat pump)

Electric central heating (using a ground source heat pump)

Solid fuel central heating (e.g. coal/wood stove)

Oil or LPG (Liquified Petroleum Gas) central heating

Solar heating

Wind-powered home heating

Other (please specify)

---

36. How many years have you lived in your current home?

Less than a year

1-3 years

3-10 years

10 years or more

Don't know

---

37. Roughly how many more years do you think you might live in your current home?

Less than a year

1-3 years

3-10 years

10 years or more

No plans to ever move

Don't know

## Heat pumps and thermal storage systems

---

38. We are about to give you some information about heat pumps and thermal storage systems. Before we do this, how informed do you already feel about heat pumps and thermal storage systems for household heating?

Very uninformed

Quite uninformed

Neither informed nor uninformed

Quite informed

Very informed

## Heat Pumps



Heat pumps take heat from the air or ground, boost it to a higher temperature using a compressor, then transfer the heat to homes. They work a bit like refrigerators in reverse and work even if the temperature is well below zero

The heat can be transferred to water, stored in hot water cylinders, and sent to radiators or underfloor heating. Alternatively, heat pumps feed heat into properties through fans using a warm air circulation system to move the heat around

These systems cannot produce hot water, so a gas or immersion water heater is still needed. However, in the summer, an air-to-air heat pump can operate in reverse and be used like an air-conditioning unit to provide cool air

For heat pumps to work efficiently, properties need to be well insulated, so the heat is kept inside

## Heat Pumps



The cost of buying and installing a heat pump is on average £9,000 compared with an average of £3,000 for a gas boiler. Government grants are currently available that would cover around half of the installation costs of a heat pump

Running a heat pump would **currently** cost the average household around £250 more per year compared with a gas boiler given the recent increases in the cost of electricity. However, flexible electricity tariffs, which we will discuss in more detail later, may help to reduce these running costs

Further, a gas boiler needs to be replaced on average twice as frequently as a heat pump (once every ten years compared with once in twenty years for a heat pump), so money can be saved in the long term with a heat pump

---

39. Now you have read about heat pumps, how much do you agree or disagree with the following statements?

Heat pumps seem:

**ROTATE CODES HERE AND AT 39B CONSISTENTLY, SUCH THAT THEY APPEAR IN THE SAME ORDER FOR ANY PARTICIPANT BUT PRESENTATION ORDER DIFFERS BETWEEN PARTICIPANTS.**

**DP: 5 POINT: 1=STRONGLY DISAGREE/5=STRONGLY AGREE. INCLUDE D/K**

- Similar to my current heating
- Inferior in terms of performance compared with other systems
- An exciting new technology
- Suitable for my household
- Too expensive to buy
- Too expensive to use
- Good for the environment
- Noisy
- Complicated to understand
- Complicated to use
- Impractical
- Appealing and of interest to me
- Reliable
- Ugly

**FOR CAPI – SHOW SCREEN and ZOOM in on showcard**

## Thermal Storage Systems



Renewable energy sources, such as wind and solar, can be quite variable in when, and how much energy they produce. This creates peaks and troughs in the UK's energy capacity

Thermal energy storage is a way of taking excess energy – such as surplus energy from renewable sources – and storing it as heat to be used later for heating. Water tanks are a simple and common example of thermal energy storage, but solid materials such as bricks can also be used

Thermal storage systems can be **connected to several and indeed multiple** different heating systems, such as solar panels, wood or pellet stoves, conventional boilers, Aga-type ranges, or electrical heating elements

# Thermal Storage Systems



Installation costs vary because of the sheer range of thermal storage systems available, and the technologies they are being combined with

Thermal storage systems are not specifically designed to save money - it's better to think of them as products that will solve problems or **allow other technologies to combine or work more efficiently together**

For example, if a thermal store was used to **combine heat from a heat pump and wood stove**, it won't change the amount of energy being produced but it will allow the stove to put energy into a common store and reduce the energy required to be supplied by the heat pump

---

Q39b. Now you have read about thermal storage systems, how much do you agree or disagree with the following statements?

Thermal storage systems seem:

**ROTATE CODES HERE AND AT 39 CONSISTENTLY, SUCH THAT THEY APPEAR IN THE SAME ORDER FOR ANY PARTICIPANT BUT PRESENTATION ORDER DIFFERS BETWEEN PARTICIPANTS.**

**DP: 5 POINT: 1=STRONGLY DISAGREE/5=STRONGLY AGREE. INCLUDE D/K**

- Similar to my current heating
- Inferior in terms of performance compared with other systems
- An exciting new technology
- Suitable for my household
- Too expensive to buy
- Too expensive to use
- Good for the environment
- Noisy
- Complicated to understand
- Complicated to use
- Impractical
- Appealing and of interest to me
- Reliable
- Ugly

---

40. How much do you agree or disagree with the following statements?

**ROTATE**

**DP: 5 POINT: 1=STRONGLY DISAGREE/5=STRONGLY AGREE. INCLUDE D/K**

- I would know where to look to find more information on heat pumps and thermal storage systems
- Information on heat pumps and thermal storage systems is easy to understand

## Flexible electricity tariffs and smart thermostats

---

41. Does your household have a smart thermostat (such as Nest or Hive) through which you can control your household heating, even when you're not at home, either online or using an app?

Yes

No

Don't know

---

42. We are about to give you some information about smart thermostats. Before we do this, how informed do you already feel about these?

Very uninformed

Quite uninformed

Neither informed nor uninformed

Quite informed

Very informed

**FOR CAPI – SHOW SCREEN and ZOOM in on showcard**

### Smart Thermostats



Smart thermostats are connected to the household Wi-Fi

They are like programmable thermostats, where timings can be set for the heating to be on using a schedule. However, because they are Wi-Fi connected, heating settings can be set remotely using other devices such as a laptop or smart phone

They can also be connected to other in-house automated systems such as smart speakers

Smart thermostats can also record internal and external temperatures

---

43. How much do you agree or disagree with the following statements?

Smart thermostats seem:

**ROTATE CODES (NB THE CODES ARE NOT THE SAME AS THOSE USED AT 43B, BELOW)**

**DP: 5 POINT: 1=STRONGLY DISAGREE/5=STRONGLY AGREE. INCLUDE D/K**

- Suitable for my household
- Too expensive to buy
- Too expensive to use
- Good for the environment
- Complicated to understand
- Complicated to use
- Impractical
- Appealing and of interest to me
- Reliable
- A fad that will disappear

**FOR CAPI – SHOW SCREEN and ZOOM in on showcard**

## Flexible Electricity Tariffs



Electricity consumption is expected to increase in the near future, with more people charging their electric vehicles and using electricity to heat their homes and to power cooking appliances

Renewable energy sources can be quite variable in when and how much energy they produce. This creates peaks and troughs in the UK's energy capacity. Energy providers are currently not able to pass on the benefits of oversupplies from these peaks to their customers

There are currently four main types of household electricity tariffs:

- **Variable tariffs** the price paid for a unit of electricity varies according to the market value
- **Fixed tariffs** fixed price is paid for each unit of electricity used for a fixed period
- **PrePayment Tariffs** units of electricity are bought in advance using a payment meter
- **Economy 7 or 10** the cost of electric units is cheaper at night than during the day

A flexible electricity tariff would be like Economy 7 or 10, where it is cheaper to use electricity at certain times in the day. However, these times would be flexible, and your supplier would inform you when these times would be using a smart meter or app

These tariffs may also include options to automate your heating to best take advantage of cheap energy units or provide discounts for allowing your energy provider to temporarily pause your heating system during peak times to better manage the network capacity, with a minimal disruption to your household temperature (allowing it to go up or down by a maximum of two degrees only)

---

Q43b. How much do you agree or disagree with the following statements?

Flexible electricity tariffs seem:

**ROTATE CODES (NB THE CODES ARE NOT THE SAME AS THOSE USED AT 43, ABOVE)**

**DP: 5 POINT: 1=STRONGLY DISAGREE/5=STRONGLY AGREE. INCLUDE D/K**

- Suitable for my household
- Too expensive
- Good for the environment
- Complicated to understand
- Complicated to use/be on
- Impractical
- Appealing and of interest to me
- Reliable
- A fad that will disappear

## Acceptability of the technologies

---

44. **SKIP IF 35=5 OR 6 (Participant is already using HP).** How likely are you to install a [heat pump](#) in your household within the next 5 years?

Not at all likely

Not very likely

Neither likely nor unlikely

Fairly likely

Very likely

NA – Do not intend to stay in my current home long enough to make installing a Heat Pump worthwhile

Don't know

---

45. How likely are you to install [thermal storage systems](#) in your household within the next 5 years?

Not at all likely

Not very likely

Neither likely nor unlikely

Fairly likely

Very likely

NA – Do not intend to stay in my current home long enough to make installing a thermal storage system worthwhile

Don't know

---

46. **SKIP IF 41=1 (YES).** How likely would you be to install a [smart thermostat](#) in your household within the next 5 years?

Not at all likely

Not very likely

Neither likely nor unlikely

Fairly likely

Very likely

NA – Do not intend to stay in my current home long enough to make installing a smart thermostat worthwhile

Don't know

---

47. How much impact would the following events have on your decision to install a [heat pump](#)?

### ROTATE

**DP: RESPONSE CODES 1=WOULD MAKE ME MUCH MORE LIKELY TO CONSIDER/4= NO DIFFERENCE/7= WOULD MAKE ME MUCH LESS LIKELY TO CONSIDER. INCLUDE DON'T KNOW**

- Moving to a new house
- Energy bills continue to rise
- The government offer heat pump installation grants
- Starting retirement
- Renovating your house
- Building an extension
- Your current heating system breaks down

---

48. How much impact would the following events have on your decision to install a [thermal storage system](#)?

**ROTATE**

**DP: RESPONSE CODES 1=WOULD MAKE ME MUCH MORE LIKELY TO CONSIDER/7= WOULD MAKE ME MUCH LESS LIKELY TO CONSIDER. INCLUDE DON'T KNOW**

- Moving to a new house
- Energy bills continue to rise
- The government offer thermal storage system installation grants
- Starting retirement
- Renovating your house
- Building an extension
- Your current heating system breaks down

---

49. **IF 44=4 or 5 OR IF 45=4 or 5 OR IF Q46=4 or 5 ELSE SKIP:** Where would you go to look for information about changing your heating system? Please select all that apply

**MULTICODE. ROTATE EXCEPT LAST ITEM (OTHER PLEASE SPECIFY)**

Distribution Network Operator (A DNO is a company that owns and operates the electricity infrastructure that connects your property to the national grid. A DNO owns the network of towers and cables that carry low-voltage electricity to homes and businesses from the electricity transmission network).

Electricity supplier (the company to whom you pay your bills)

Local heating engineer

National heating provider (a company that offers heating system installations and operates all across the country)

DIY store

Government information source (e.g., gov.uk website)

Other (please specify)

---

50. **[IF 35=5 OR 6** You've told us that you currently heat your home using a Heat Pump. **ELSE** Imagine that your home was currently heated using a heat pump].

---

How likely would you be to sign up to a flexible electricity tariff?

Not at all likely

Not very likely

Neither likely nor unlikely

Fairly likely

Very likely

Don't know

---

51. Imagine you were using a flexible electricity tariff. How much control do you feel you would have over the following?

**ROTATE**

**DP: RESPONSE CODES 1=A LOT MORE THAN I CURRENTLY DO/2=A BIT MORE THAN I CURRENTLY DO/3=THE SAME AS I CURRENTLY DO/4=A BIT LESS THAN I CURRENTLY DO/5=A LOT LESS THAN I CURRENTLY DO. INCLUDE DON'T KNOW**

How much you pay for energy

The temperature of your property

---

52. What room temperature do you usually feel most comfortable in when at home with the heating on?



- Less than 18°C
  - 18°C or more but less than 19°C
  - 19°C or more but less than 20°C
  - 20°C or more but less than 21°C
  - 21°C or more but less than 22°C
  - 22°C or more
  - Unsure/Don't know
- 

53. How many degrees do you think (or know) you could tolerate above or below your most comfortable room temperature at times when you have the heating on?

- Less than 0.5°C
  - 0.5-1°C
  - 1-1.5°C
  - 1.5-2°C
  - More than 2°C
  - Unsure/Don't know
- 

54. Think about the flexible electricity tariffs that you have just read about.

Please rank (order) the following items from 1 to 5 in terms of which would most encourage you to alter the times when you heat your home in the winter months, where 1 would encourage you most and 5 would encourage you least.

You must use the numbers 1 to 5 once each in completing this task.

**DP: Rank function (1 to 5)**

Saving money on your energy bill

Ensuring that the most vulnerable in society receive the electricity they need at peak times (e.g. those that have at-home medical equipment like dialysis, or need electricity because of a health condition)

Reducing pressure on the electricity network and saving you money

Helping the UK to achieve a greener UK energy system

Ensuring reliability of the UK's electricity supply by reducing demand for electricity at times when it is highest in the UK, usually between 4-7pm.

---

55. One way to incentivise shifts in the times that homes are heated is to offer a payment to customers in return for a third party, most likely their energy supplier, to control their heating. The third party would send a signal to your heating technology, for example your boiler or heat pump, telling it to turn the temperature up or down.

For how many hours at a time would you be willing to have your heating system controlled by a third party in this way, within temperature limits, say a maximum of 2 degrees (which you can pre-set and alter at any time to ensure that you remain comfortable)?

- 0
- 1
- 2
- 3
- 4+

---

56. Would you be willing to have extra technology installed to your heat pump to enable a third party to control your heating for limited time periods?

- Yes
- No
- Don't know

---

57. How frequently throughout the winter months would you be willing to have your heating controlled by a third party for the number of hours you chose for the earlier question?

- Daily
- Multiple times per week
- Once a week
- Once a month
- Never – I chose 0 hours at the earlier question

---

58. What would be your biggest concerns with allowing your heating to be controlled by a third party at limited times? **MULTICODE**

**ROTATE**

- I am worried that it will feel too cold
- I am worried that my bill will go up, not down
- I am worried that it would remove my sense of control over my home comfort
- I am worried it would remove my flexibility about when I need to be warm at home
- I would not be worried **ALWAYS PENULTIMATE / EXCLUSIVE**
- Other reason (please specify) **ALWAYS LAST**

---

59. How far in advance would you want to be informed about an event where your heating will be controlled by a third party between 3-5pm, which you can accept or deny?

- More than 1 day before
- The day before
- 3-9 hours before
- 0-3 hours before
- Right before 3pm
- Never – I chose 0 hours at the earlier question

---

60. For homes heated via electricity, for example with an electric heater or a heat pump, another way to incentivise shifts in the times that homes are heated is to provide consumers with electricity tariffs which offer cheaper electricity at hours when there is less demand for electricity. Let's say your home is heated by electricity (for example, with an electric heater or a heat pump). How far in advance would you want to be informed about a period between 3-5pm where electricity becomes much cheaper to use?

- More than 1 day before
- The day before
- 3-9 hours before
- 1-3 hours before
- 1 hour before

## A few more questions about you

---

61. What is your annual household income, before tax and other deductions?

**CAPI:** Can you please tell me, from the following list of options, what your annual household income is, before tax and other deductions? Please interrupt me when I read out the most relevant option. **READ OUT**

- Under £4,999
  - £5,000 to £9,999
  - £10,000 to £14,999
  - £15,000 to £19,999
  - £20,000 to £29,999
  - £30,000 to £39,999
  - £40,000 to £49,999
  - £50,000 to £75,000
  - £75,000 or over
  - Don't know/prefer not to say
- 

62. Including yourself, how many people in your household are:

- Over 60 years old
  - Between 17 years and 60 years old
  - Between 5 and 16 years old
  - Below 5 years old
- 

63. Thank you. Would you be willing to be contacted again if we need to clarify any of the answers you have given today? And would you be willing to be invited to take part in other research for Western Power Distribution?

- Yes, for both clarification and further research
- Yes, for clarification only
- Yes, for further research only
- No

**ONLINE:** Thank you. This research was conducted under the terms of the MRS code of conduct and is completely confidential.

**CAPI:** Thank you. This research was conducted under the terms of the MRS code of conduct and is completely confidential. If you would like to confirm my credentials or those of Accent, please call the MRS free on 0800 975 9596. **HAND OVER THE THANK YOU SLIP.**

Please can I take a note of your name and where we can contact you for quality control purposes?

Name:

Telephone:

**HAND OVER THE INCENTIVE** If you have any queries about your incentive please contact us on 020 8742 2211. Thank you.

## Interviewer Confirmation

**CAPI only** I confirm that this interview was conducted under the terms of the MRS code of conduct and is completely confidential

Yes  
No

### SYSTEM INFORMATION

Time interview completed:

#### PROJECT MANAGER USE ONLY: [Click here](#)

Online only   
CATI only  (DP: add QAX)  
CAPI/Tablet  (BCQs: Q12, Q13, Q21 s ) QAZ2 Paper showcard? Y  N   
CATI recruit for online/field  (BCQs: ) QAZ3  
Field recruit for online/CATI  (BCQs: ) QAZ1  
Recruit only (i.e. for qual)

#### Grid style for mobiles: [click here for example](#)

GM 1  to force mobiles to show grid (for small grids)  
GAR 1  to show vertical text for answer headings  
GAR 2  to show vertical text for answer headings on mobile devices only

#### Questionnaire Style (default is 7): [Click here for details](#)

##### Choose base format:

Accis3   
Accis4   
Accis5   
Accis6   
Accis7   
Accis8

##### Choose variations:

Question and answer fonts (full list: <https://fonts.google.com/>)   
Header font   
Tick box style (1-6)   
Next/previous button style (1-3)   
Font colour (use HEX code [http://html-color-codes.info/#HTML\\_Color\\_Picker](http://html-color-codes.info/#HTML_Color_Picker)) #

##### Other colours: Note that CLR1 and CLR6 change a number of different elements (to easily keep the colours consistent)

CLR1 #  Progress bar border, progress colour, button colour  
CLR2 #  Progress bar background colour  
CLR3 #  Page background colour  
CLR4 #  Header background colour (if different from CLR1)  
CLR5 #  Header font colour  
CLR6 #  Border colour for selected checkbox and checkbox border colour when hovered over (if different from CLR1)  
CLR1 #   
CLR7 #  Background colour for selected checkbox (if different from CLR1)  
CLR8  Tick/circle colour for selected checkbox

**(AFTER QNAME, QTEL) FOR CAPI** Summary of quotas achieved i.e., AGE/GENDER/SEG and if DIGITALLY EXCLUDED



# Appendix B

Cognitive interview topic guide



# 3563 / EQUINOX Project Primary Market Research

## Cognitive interview Topic Guide

Participant Name	
Date / time	
Telephone Number / Zoom Link	
URN	

### Introduction: 3 mins (3)

Good morning/afternoon/evening... My name is ... and I work for an independent market research company called Accent. We are conducting research for Western Power Distribution, who provide power and manage the electricity distribution network for the Midlands, South West and Wales.

The research is about views on home heating systems, in particular, heat pumps, thermal storage systems and automation of heating. Specifically, we want to get your feedback on a questionnaire that we plan to use to ask a large number of people for their views. Your feedback while completing the questionnaire, along with feedback from others, will allow us to understand how well the questionnaire works and how it might be improved. With this in mind, we will be asking you to share your thoughts on the questionnaire as you work through it.

Thank you very much for agreeing to help us with this research.

The research is being conducted in accordance with the Code of Conduct of the Market Research Society (MRS) and also with the Data Protection Act, with whom Accent is registered. This means that everything you say is confidential and will not be attributed to you personally unless you give your permission for us to pass your comments on in named format.

Our discussion is being recorded. This is standard market research procedure and is to ensure accuracy – so I do not have to try to remember what you have said – and for analysis purposes only. The recordings will not be passed to any third party not associated with the research project, and in our reporting of the findings from this research everything that you say will be confidential and will be reported in grouped format only, again, unless you give your permission for us to pass your comments on in named format.

The discussion will last around 45 minutes.

I'd like to stress that we are interested in your views. There are no right or wrong answers today; and this is not a test of your ability to complete the questionnaire. Instead, it is a test of how well the questionnaire has been designed to make it easy to

complete. I haven't been involved in the design and development of the questionnaire, which means you can be open and honest when sharing your views on completing it.

In a moment, I will hand over control of my screen to you so you can complete the survey.

As you are answering questions and deciding between different options, I want to understand how you are making those choices. Please talk me through as you are making your choices and I might prompt you with some additional questions as you work your way through the questionnaire. Also, if you come across anything which you don't understand, you're struggling to answer, or need further clarification please ask me as we go along.

### Interviewer instructions: NA (3)

- Share window with Accis questionnaire and allow participant to control your screen to complete questionnaire.
- Remind participants to talk aloud as they deliberate over any options. Stop and probe at the questions below (unless 'think aloud' commentary provides adequate insight).
- Make a note of:
  - Any significant pauses or delays in responding
  - Participants re-reading questions/text or changing their response
  - Mentions of any question or section of text being confusing/complicated/unclear/long, or missing important information
  - Response options that they struggle to choose between
  - Questions they ask about elements of the survey (try not to answer these unless they mean the participant is unable to progress).

### About you: 7 mins (10)

- Q16 (financial vulnerability)
  - Do all the answer options make sense?
  - How easy or difficult was it to choose one of these options?
    - Did the answer options here adequately reflect your circumstances?
    - What, if anything would make the response option more appropriate to your situation?
- Q23 (gas grid connection)
  - How easy or difficult was it to answer this question?
    - Is it clear what is meant by mains gas grid / National Gas Grid? Is one wording clearer than the other?
    - Is there enough or too much additional information to explain this question?

## Environmental attitudes: 5 mins (15)

- Q24 (topic knowledge)
  - Have you heard of each of these topics, even if you know little about them? (remember that this is a test of how easy our questionnaire is to complete, not a test of your knowledge or understanding, so please be honest in your answer)
  - Which is more familiar to you: global warming or climate change? Why do you say that?
  - Do all of the topics feel distinct from one another?
    - Did you find the overlap between topics confusing?
    - How could the topics be simplified or more easily explained to you and others like you?
- Q26 (topic interest)
  - **Note spontaneous reaction to “heat pumps” that indicate understanding, that the term is novel, etc.**
  - Is the topic “I am interested in learning about new technology and products that could reduce my energy bills” understandable?
  - What do you think we mean by “heating systems”?
- Q29 (environmental behaviours)
  - Are there other things that you do, or you know others do, that you feel should be included in this list?
- Q30 (net zero target)
  - How easy or difficult was this text to understand?
    - What was hard to understand? Why?
    - What would make this easier to understand?

## Your home heating system: 5 mins (20)

- Q33 (property age)
  - How easy or difficult was this to answer?
  - How did you work out your answer to this question?
- Q34 (property type)
  - How easy or difficult was this to answer?
  - Did you have any challenges putting your property into one of these groups?
  - Did you feel the need to check more than one box? (e.g., in the case of a SD bungalow)
  - Are we missing any options, do you think?
- Q35 (heating system)
  - How easy or difficult was it to find your current heating system on this list?
  - Should there be any other heating system included in this list?



## Heat pumps and thermal storage systems: 5 mins (25)

- After Q38 **stop and probe after each stim infographic presented after this Q. For each stim:**
  - How easy or difficult was it to read the information presented here?
  - How easy or difficult was this text to understand?
  - What are your thoughts on the images/icons used in the descriptions?
  - Do you feel there is enough information?
    - Is there anything missing that you feel you need to understand this?
  - How could this be presented to make it easier to read?
- Q39/Q39b (attitudes to heat pumps and thermal stores: Lists are identical at Q39 and Q39b)
  - Do you feel like the information presented earlier gave you enough information to answer this question or not? *Why?*
  - Is it clear what is meant by 'Inferior in terms of performance compared with other systems'?
  - Was it clear what other items on these lists meant?

## Flexible electricity tariffs and smart thermostats: 5 mins (30)

- Q41 (presence of smart thermostat)
  - Do you feel like the information presented earlier gave you enough information to answer this question or not? *Why?*
  - Are you familiar with the terms 'Nest' and 'Hive'?
- After Q42 **stop and probe after each infographic**
  - How easy or difficult was it to read the information presented here?
  - How easy or difficult was this text to understand?
  - What are your thoughts on the images/icons used in the descriptions?
  - Do you feel there is enough information?
    - Is there anything missing that you feel you need to understand this?
  - How could this be presented to make it easier to read?

## Acceptability of the technologies: 10 mins (40)

- Q44-Q46 (HP and HS acceptability)
  - Do you feel like the information presented earlier gave you enough information to answer this question or not? *Why?*
  - Did you notice the (i) icon?
    - Is it clear that you could click on the (i) icon to re-read the information presented earlier?
    - What could be done to improve this feature?
- Q49 (info on changing heating)
  - Are the 'places' listed understandable?

- Where else might you go to look for information about changing your heating system?
- Q50 (tariff acceptability)
  - Do you feel like the information presented earlier gave you enough information to answer this question or not? Why?
  - Did you notice the (i) icon?
    - Is it clear that you could click on the (i) icon to re-read the information presented earlier?
    - What could be done to improve this feature?
- Q52 (preferred temp)
  - Do you typically know the temperature you feel most comfortable in when your heating is on?
  - How did you go about answering this question?
- Q53 (temp flexibility)
  - How did you go about answering this question?
- Q54 (incentives)
  - How easy or difficult was it to understand what this question was asking you to do?
  - Were you able to understand the items you were ranking, or not?
  - How did you go about answering this question? Talk me through your ranking process.
  - How easy or difficult was it to use this survey software to put the items in order?
- Q55 (acceptability of flexible hours)
  - Is it clear what is being asked in this question?
- Q56 (acceptability tech installation)
  - Is it clear what is being asked in this question?
  - It is clear how this question relates to the information presented earlier?
  - Do you feel like you have sufficient information to answer this question?
- Q59 (advance notice)
  - How easy or difficult was it to answer this question?
  - How did you go about selecting an answer?
- Did you have any other reflections on the survey that you'd like to share?
  - How easy or difficult did you find it to complete the survey in general?
  - To what extent do you feel you know more about this topic than you did at the beginning? **Capture participant's views on their baseline knowledge (this will allow us to check how well we have explain the various technologies/options to those to whom they are new concepts).**
  - How do you feel about the level of complexity of the survey and its content?
  - Can you imagine anyone you know, or other people, struggling to complete this questionnaire in any way?
    - Why? How could we make things easier in that situation?

## Wrap and Close: 5 mins (45)

Thank you very much.

- Record participant's bank details for incentive payment, if not already captured by Scout, and add to profile sheet.
- Thank and close.



# Appendix C

Focus group recruitment questionnaire

# 3563 / EQUINOX Project Primary Market Research

## Focus Group Recruitment Questionnaire

THROUGHOUT THIS QUESTIONNAIRE BOLD TYPEFACE DENOTES INSTRUCTIONS TO THE RECRUITER

### QUOTAS/GROUP STRUCTURE – INTERVIEWER SECTION

#### Group Structure:

- All focus groups will take place online using Zoom
- All groups are 90 minutes and will be hosted in the evening (see times in matrix below)
- Recruit 6 participants for 6 to attend each group
- Participants will be required to complete an online pre-task before attending the group (approx. 30 minutes)

	Group 1	Group 2	Group 3	Group 4	Group 5	Group 6
<b>Moderator</b>	Nancy	Nancy	Rachel	Rachel	Ben	Ben
<b>Date</b>	20 October	20 October	25 October	25 October	20 October	20 October
<b>Time</b>	1800-1930	1945-2115	1800-1930	1945-2115	1800-1930	1945-2115
<b>Life stage</b>	Pre-family	Pre-family	Family	Family	Empty nester/retired	Empty nester/retired
<b>Property age</b>	Pre-1900	Pre-1900	Pre-1900	Pre-1900	Pre-1900	Pre-1900
<b>Occupancy type</b>	Homeowner	Homeowner	<b>Tenant</b>	Homeowner	Homeowner	<b>Tenant</b>
	<b>Group 7</b>	<b>Group 8</b>	<b>Group 9</b>	<b>Group 10</b>	<b>Group 11</b>	<b>Group 12</b>
<b>Moderator</b>	Ben	Ben	Nancy	Nancy	Rachel	Rachel
<b>Date</b>	25 October	25 October	26 October	26 October	26 October	26 October
<b>Time</b>	1800-1930	1945-2115	1800-1930	1945-2115	1800-1930	1945-2115
<b>Life stage</b>	Pre-family	Pre-family	Family	Family	Empty nester/retired	Empty nester/retired
<b>Property age</b>	1900 to 2000	1901 to 2000	1900 to 2000	1901 to 2000	1900 to 2000	1901 to 2000
<b>Occupancy type</b>	<b>Tenant</b>	Homeowner	Homeowner	<b>Tenant</b>	Homeowner	Homeowner
	<b>Group 13</b>	<b>Group 14</b>	<b>Group 15</b>	<b>Group 16</b>	<b>Group 17</b>	<b>Group 18</b>
<b>Moderator</b>	Rachel	Rachel	Ben	Ben	Nancy	Nancy
<b>Date</b>	01 November	01 November	27 October	27 October	03 November	03 November
<b>Time</b>	1800-1930	1945-2115	1800-1930	1945-2115	1800-1930	1945-2115
<b>Life stage</b>	Pre-family	Pre-family	Family	Family	Empty nester/retired	Empty nester/retired
<b>Property age</b>	Post 2000	Post 2000	Post 2000	Post 2000	Post 2000	Post 2000
<b>Occupancy type</b>	Homeowner	<b>Tenant</b>	Homeowner	Homeowner	<b>Tenant</b>	Homeowner

#### Prerequisites in addition to quotas:

- Must be a confident Zoom user (Q6)
- Must have a reliable and stable internet connection (Q7)
- Must join the focus group using a large-scale tablet, laptop or desktop computer (must NOT join using a smartphone) with a working camera and microphone (Q7)
- Must live in England, Scotland or Wales (Q8)
- Must not be 'climate change deniers' (Q9)

#### Groups are defined by LIFE STAGE x PROPERTY AGE x OCCUPANCY TYPE:

##### *Life stage (Q10 and Q11)*

- Pre-family (groups 1, 2, 7, 8, 13, 14)
- Family (groups 3, 4, 9, 10, 15, 16)
- Empty nester/retired (groups 5, 6, 11, 12, 17, 18)

### Property age (Q12)

- Pre-1900 (groups 1-6)
- 1900-2000 (groups 7-12)
- Post-2000 (groups 13-18)

### Occupancy type (Q13)

- Homeowner (groups 1, 2, 4, 5, 8, 9, 11, 12, 13, 15, 16, 18)
- Private or social tenant (groups 3, 6, 7, 10, 14, 17); **note quotas for tenant groups, below**

### Sociodemographic quotas for each group (in addition to main criteria and prerequisites):

- Recruit 6 participants for 6 to attend each group

Factor	Category	Quota
Gender (Q14)	Male	Minimum 2
	Female	Minimum 2
Social Grade (SEG, Q15)	ABC1	Minimum 2
	C2DE	Minimum 2
Urban/Rural (Q16)	Urban/suburban	Minimum 2
	Rural	Minimum 2
Off-grid gas (Q17)	Off-grid gas	Minimum 1
(For tenant focus groups; Q13)	Private tenants	Maximum 2
	Social tenants	Minimum 4

## INTRODUCTION

**Good morning/afternoon/evening.** My name is **(X)** from **Accent/Roots** and we are carrying out research on behalf of Western Power Distribution (WPD; now part of National Grid) about how we heat our homes now and in the future. Specifically, WPD wish to undertake customer research to inform a trial of future heating technologies. We are looking for a range of homeowners and tenants, who live in a variety of properties, from across the UK to share their views on heating technologies and perspectives on the proposed trial.

The research is being conducted under the Market Research Society Code of Conduct, which means that any answers you give during the research will be treated in confidence.

If you are eligible to take part, the research will take the form of a 90-minute online focus group (on Zoom), which will be held in the evening. You will also be asked to complete a short online task before taking part in the group discussion (about 30 minutes). To thank you for your time and contribution, you would be paid a total of **£50, by BACS** if you were a good fit for the research and were willing and available to take part. Can I just ask you a few questions to check to see if you are eligible to take part in this research?

---

INTCHECK. **INTERVIEWER:** PLEASE CONFIRM YOU HAVE ADVISED THE PARTICIPANT OF:

- MRS Code of Conduct
- Calls being recorded

---

**INTCHECK2. INTERVIEWER:** PLEASE CONFIRM YOU HAVE ASKED AND CHECKED THAT THE PARTICIPANT IS **NOT** TAKING THE INTERVIEW ON A MOBILE DEVICE AND WHILE DRIVING OR OPERATING EQUIPMENT

Yes, it is safe for the participant to proceed

No, it isn't safe – we need to call back later **RESCHEDULE RECRUITMENT INTERVIEW**

---

1. Any data collected over the course of this interview that could be used to identify you, such as your name, address, or other contact details, will be held securely and will not be shared with any third party unless you give permission (or unless we are legally required to do so). Our privacy statement is available at [www.accent-mr.com/privacy/](http://www.accent-mr.com/privacy/).
- 

Do you agree to proceeding with the interview on this basis?

Yes

No **THANK AND CLOSE**

---

2. Do you or any of your close family work, or have you/they worked in the recent past, in the electricity distribution or energy supply industries or in the Market Research profession?

Yes **THANK AND CLOSE**

No

---

3. Have you ever participated in a market research focus group discussion? **IF YES, PROBE WHEN**

Yes, in the last six months **THANK AND CLOSE**

Yes, between 6 months and 2 years ago **GO TO Q4**

Over 2 years ago **GO TO Q6**

No **GO TO Q6**

---

**TWO THIRDS OF RECRUITS MUST NEVER HAVE BEEN TO A GROUP DISCUSSION BEFORE**

---

4. How many groups have you been to in that period?

1-3 **GO TO Q5**

More than 3 **THANK AND CLOSE**

---

5. What was the subject matter of the groups you attended? **PROBE AND WRITE DOWN**

**IF ENERGY/ELECTRICITY DISTRIBUTION OR HOME HEATING THANK AND CLOSE**

---

6. This research will take place online using Zoom, the online meeting platform. How proficient would you say you are at using the Internet, and Zoom specifically?

I feel very confident about using the Internet and Zoom

I feel quite confident about using the Internet and Zoom

I don't feel confident about using the Internet and Zoom **THANK AND CLOSE**

I would rather not use the Internet if I didn't have to **THANK AND CLOSE**

I do not use the internet at all **THANK AND CLOSE**

---

7. Do you have access to a desktop or laptop computer, or a large-format tablet (such as an iPad with a large screen), with a working camera and microphone, which is connected to a reliable and stable internet connection, on which you could take part in a Zoom focus group? Note that device functionality must be tested before you take part in any Zoom focus group to avoid any technical difficulties/delays to the research.

Yes

No **THANK AND CLOSE**

Don't know **THANK AND CLOSE**

---

8. In which country of the UK do you live?

England

Scotland

Wales

Northern Ireland **THANK AND CLOSE**

**ENSURE A GOOD SPREAD ACROSS THE 3 COUNTRIES ACROSS ALL GROUPS**

---

9. How worried or unworried are you about the impact of climate change?

Very worried **POSITIVE ATTITUDE**

Somewhat worried **POSITIVE ATTITUDE**

Neither worried nor unworried **NEUTRAL ATTITUDE**

Somewhat unworried **NEUTRAL ATTITUDE**

Not at all worried **THANK AND CLOSE (NEGATIVE ATTITUDE)**

**RECORD FOR INFORMATION – POSITIVE/NEUTRAL ATTITUDE TOWARDS CLIMATE CHANGE**

---

10. How old are you?

**CODE AGE GROUP BELOW**

1. 17-18

2. 19-21

3. 22-25

4. 26-35

5. 36-44

6. 45-54

7. 55 -59

8. 60-69

9. 70 or older

10. Refused **THANK AND CLOSE**

**ENSURE A GOOD SPREAD ACROSS AGE BANDS AND USE IN DERIVATION OF LIFE STAGE WITH Q11, BELOW**



---

11. Which of the following people live in your household?

1. Adults aged 16+, including yourself
2. Children aged 11-16 (secondary school to end of Yr 11)
3. Children 8-10 (primary school KS2)
4. Children 5-7 (primary school KS1)
5. Children under 5 years of age (pre-school)
6. Refused **THANK AND CLOSE**

**CHECK QUOTAS:**

**IF Q11=2-5, CODE AS FAMILY AND RECRUIT FOR GROUPS 3, 4, 9, 10, 15, 16**

**IF Q11=1 ONLY AND Q10 = 1, 2, 3, 4 OR 5 CODE AS PRE-FAMILY AND RECRUIT FOR GROUPS 1, 2, 7, 8, 13, 14**

**IF Q11=1 ONLY AND Q10 = 6, 7, 8, OR 9 CODE AS EMPTY NESTERS/RETIRED AND RECRUIT FOR GROUPS 5, 6, 11, 12, 17, 18**

---

12. When was your home built? If you don't know, make an informed guess.

Before 1900 **RECRUIT FOR GROUPS 1-6**

Between 1900 and 2000 **RECRUIT FOR GROUPS 7-12**

After 2000 **RECRUIT FOR GROUPS 13-18**

Don't know **THANK AND CLOSE**

---

13. Which of the following best describes the way in which you occupy your home?

I/we own my/our own home (with a mortgage or outright) **HOMEOWNER: RECRUIT FOR GROUPS 1, 2, 4, 5, 8, 9, 11, 12, 13, 15, 16, 18**

I/we own my/our own home (through a shared ownership or Keyworker scheme) **HOMEOWNER: RECRUIT FOR GROUPS 1, 2, 4, 5, 8, 9, 11, 12, 13, 15, 16, 18**

I/we rent from a private landlord **PRIVATE TENANT: RECRUIT FOR GROUPS 3, 6, 7, 10, 14, 17**

I/we rent from a Housing Association/Council **SOCIAL TENANT: RECRUIT FOR GROUPS 3, 6, 7, 10, 14, 17**

Our home is provided with my/someone else in the household's job **PRIVATE TENANT: RECRUIT FOR GROUPS 3, 6, 7, 10, 14, 17**

I/we live with parents **THANK AND CLOSE**

I/we live in student accommodation **THANK AND CLOSE**

Other **CONSIDER SUITABILITY AND CODE/RECRUIT AS APPROPRIATE (CAPTURE DESCRIPTION FOR INFORMATION)**

Don't know **THANK AND CLOSE**

**FOR TENANT GROUPS (3, 6, 7, 10, 14, 17) ENSURE A MINIMUM OF 4 SOCIAL TENANTS AND A MAXIMUM OF 2 PRIVATE TENANTS PER GROUP**

---

14. What is your gender?

Male

Female

I describe my gender in another way **NO QUOTA: ALLOCATE AS APPROPRIATE TO MEET QUOTAS**

**CHECK QUOTAS**

---

15. What is the job title of the chief wage earner of your household or, if you are the chief wage earner, your own job title? **CODE SEG**

- **IF SELF-EMPLOYED: ASK IF MANUAL/NON-MANUAL, SKILLED/QUALIFIED OR NOT, NUMBER OF EMPLOYEES – THEN LOOK UP SELF EMPLOYED TABLE**
- **IF MANAGER/EXECUTIVE: ASK FOR INDUSTRY SECTOR, NUMBER OF EMPLOYEES IN COMPANY AND MANAGEMENT STATUS**
- **IF RANK/GRADE (CIVIL SERVANT, NURSING, MILITARY, NAVY, POLICE ETC.) RECORD RANK/GRADE SPECIFICALLY**
- **IF PENSIONERS: ASK IF STATE (GRADE "E") OR PRIVATE/OCCUPATIONAL PENSION (GRADE ON PREVIOUS OCCUPATION)**
- **IF UNEMPLOYED: IF MORE THAN 6 MONTHS AGO (GRADE "E"), IF LESS THAN 6 MONTHS AGO (GRADE ON PREVIOUS OCCUPATION)**

A

B

C1

C2

DE

Not stated **THANK & CLOSE**

**CHECK QUOTAS**

---

16. How would you describe the area where you live?

Urban **URBAN/SUBURBAN**

Suburban **URBAN/SUBURBAN**

Rural **RURAL**

**CHECK QUOTAS**

---

17. Is your property connected to the Mains Gas Grid?

Yes

No **OFF-GRID GAS**

Don't know **THANK AND CLOSE**

**CHECK QUOTAS**

## INVITATION: ZOOM FOCUS GROUP

---

18. Thank you for answering those questions. Would you be willing to attend a Zoom focus group we are holding on behalf of WPD to discuss heating our homes now and in the future? If you agree to participate, you will be asked to take part in a 90-minute evening Zoom focus group and complete a brief pre-task online that will take up to 30 minutes beforehand. There will be 5 or 6 other people just like yourself attending. The group will be held in accordance with the Code of Conduct of the Market Research Society. People who take part in the group and complete the pre-task will receive **£50, paid by BACS**, to thank them for their time and contribution. Would you be willing to take part?

Yes **PROCEED TO PRE-TASK AND DATA COLLECTION AND SHARING CONSENT**

No **REASSURE AND PERSUADE, OTHERWISE THANK AND CLOSE**

## PRE-TASK

**TELL PARTICIPANT ABOUT PRE-TASK:** The group discussion will focus on home heating options both now and in the future. The task we will ask you to complete before you attend the group will involve registering with our online research platform, Liveminds, and telling us about your current heating system and the alternative heating solutions you know about. You will also be required to do some brief online research looking into these other heating systems in a little more detail. We will email you the exact details in advance of the session.

## DATA COLLECTION AND SHARING CONSENT

19. The Zoom focus group will be video and audio recorded, to ensure accuracy and for later analysis. All recordings will be securely stored for a period of 12 months (for reference purposes) before being destroyed. The recording will remain confidential to Accent.

The group will be held in accordance with the Code of Conduct of the Market Research Society and any views you express during the discussion will be treated with complete confidence and will not be attributed to you personally.

When reporting the findings from this research everything that you say will be confidential, such that it will not be possible to identify you from the report.

Please confirm that is OK

Yes **CONTINUE WITH DETAILS**

No **REASSURE AND PERSUADE, OTHERWISE THANK AND CLOSE**

20. The Zoom focus group will take place on/at (select data and time based on responses to RQ):

	Group 1	Group 2	Group 3	Group 4	Group 5	Group 6
<b>Moderator</b>	Nancy	Nancy	Rachel	Rachel	Ben	Ben
<b>Date</b>	20 October	20 October	25 October	25 October	20 October	20 October
<b>Time</b>	1800-1930	1945-2115	1800-1930	1945-2115	1800-1930	1945-2115
<b>Life stage</b>	Pre-family	Pre-family	Family	Family	Empty nester/retired	Empty nester/retired
<b>Property age</b>	Pre-1900	Pre-1900	Pre-1900	Pre-1900	Pre-1900	Pre-1900
<b>Occupancy type</b>	Homeowner	Homeowner	Tenant	Homeowner	Homeowner	Tenant
	Group 7	Group 8	Group 9	Group 10	Group 11	Group 12
<b>Moderator</b>	Ben	Ben	Nancy	Nancy	Rachel	Rachel
<b>Date</b>	25 October	25 October	26 October	26 October	26 October	26 October
<b>Time</b>	1800-1930	1945-2115	1800-1930	1945-2115	1800-1930	1945-2115
<b>Life stage</b>	Pre-family	Pre-family	Family	Family	Empty nester/retired	Empty nester/retired
<b>Property age</b>	1900 to 2000	1901 to 2000	1900 to 2000	1901 to 2000	1900 to 2000	1901 to 2000
<b>Occupancy type</b>	Tenant	Homeowner	Homeowner	Tenant	Homeowner	Homeowner
	Group 13	Group 14	Group 15	Group 16	Group 17	Group 18
<b>Moderator</b>	Rachel	Rachel	Ben	Ben	Nancy	Nancy
<b>Date</b>	01 November	01 November	27 October	27 October	03 November	03 November
<b>Time</b>	1800-1930	1945-2115	1800-1930	1945-2115	1800-1930	1945-2115
<b>Life stage</b>	Pre-family	Pre-family	Family	Family	Empty nester/retired	Empty nester/retired
<b>Property age</b>	Post 2000	Post 2000	Post 2000	Post 2000	Post 2000	Post 2000
<b>Occupancy type</b>	Homeowner	Tenant	Homeowner	Homeowner	Tenant	Homeowner

Would you be able to attend?

Yes **CONFIRM DATE AND TIME then continue**

No **REASSURE AND PERSUADE, OTHERWISE THANK AND CLOSE**

Great, thanks. I'll just take a few details and will let you get on with your day. We will send you more information by email shortly with details of the next steps.

If for any reason you find you are unable to attend, please could you let me know as soon as possible so that we can invite someone else to take your place?

Please contact us on 020 8742 2211 if you have any queries about your incentive after taking part. Thank you.

**RECRUITER:** Please ensure you have filled in the cover page of the RQ, including email address and mobile number of participant, then complete the following confirmations.

**THANK PARTICIPANT FOR THEIR HELP IN THIS RESEARCH**

## RECRUITER CONFIRMATIONS

---

**RECRUITER – VERY IMPORTANT – PLEASE TICK TO CONFIRM YOU FULLY READ OUT THE DATA SHARING AND CONSENT QUESTION, AND THAT IT MADE SENSE TO BOTH YOU AND THE PARTICIPANT.**

Yes

---

**21. IS THE PARTICIPANT CLEAR ABOUT THE PRE-TASK & DID THEY SAY THEY WOULD DO IT?**

Clear

Will do

## MRS DECLARATION

---

22. I confirm that this interview was conducted under the terms of the MRS Code of Conduct and is completely confidential

INTERVIEWER'S SIGNATURE:

**THANK PARTICIPANT FOR THEIR HELP IN THIS RESEARCH**

# Appendix D

In-depth interview recruitment questionnaire



# 3563 / EQUINOX Project Primary Market Research

## In-depth Interview Recruitment Questionnaire

THROUGHOUT THIS QUESTIONNAIRE BOLD TYPEFACE DENOTES INSTRUCTIONS TO THE RECRUITER

### QUOTAS – INTERVIEWER SECTION

The fieldwork for this project is made up primarily of online focus groups (conducted using Zoom). In order to ensure we reach a number of digitally excluded and otherwise hard to reach participants we are supplementing these online focus groups with 6 in-depth interviews, which will be conducted by telephone.

#### Prerequisites in addition to quotas:

- All recruits must be deemed as digitally excluded (see below **Qs 6, 7, 8**)
- Must not be 'climate change deniers' (**Q9**)
- As much as we are recruiting those for whom English is not their first language (or those for whom there is a non-native English speaker in the household), a good grasp of English is required in order to participate meaningfully in the in-depth interview (**Q11**)
- Recruits must be available in line with interviewer availability (see Excel spreadsheet with interviewer availability)

#### Quotas for the 6 IDIs (in addition to above prerequisites):

- Recruit 6 participants for telephone IDIs
- We recognise that each participant may be eligible on more than one basis; minimum quotas are therefore given

Factor	Definition	Quota
<b>English as a foreign language (Q10, 11)</b>	Participant is a non-native English speaker or there is a non-native English speaker in the household	Minimum 2 recruits
<b>Black, Asian and Mixed Ethnicity (BAME, Q12)</b>	Participant identifies as BAME	Minimum 2 recruits
<b>Financial vulnerability (Q13)</b>	Participant experiences a degree of difficulty in paying their energy bills	Minimum 2 recruits
<b>Occupancy type (Q14)</b>	Homeowner	Minimum 2 recruits
	Tenant	Minimum 2 recruits
<b>Participant age (Q15)</b>	-	Ensure a good spread of ages
<b>Property age (Q16)</b>	Before 1900	Minimum 1 recruit
	Between 1900 and 2000	Minimum 1 recruit
	After 2000	Minimum 1 recruit
<b>Gender (Q17)</b>	Male	Minimum 2 recruits
	Female	Minimum 2 recruits

### INTRODUCTION

**Good morning/afternoon/evening.** My name is **(X)** from **Accent/Roots** and we are carrying out research on behalf of Western Power Distribution (WPD; now part of National Grid) about how we heat our homes now and in the future. Specifically, WPD wish to undertake customer research to inform a trial of future heating technologies. We are looking for a range of homeowners and tenants, who live in a variety of properties, from across the UK to share their views on heating technologies and perspectives on the proposed trial.

The research is being conducted under the Market Research Society Code of Conduct, which means that any answers you give during the research will be treated in confidence.

If you are eligible to take part, the research will take the form of a 60-minute telephone interview, during which we will ask you questions on this topic – there are no right or wrong answers, but these questions are designed to elicit your views, opinions and experiences. The interview can be completed at a time convenient to you. You will also be asked to complete a short task before taking part in the interview (this will take about 30 minutes). To thank you for your time and contribution, you would be paid a total of **£50, by BACS** if you were a good fit for the research and were willing and available to take part. Can I just ask you a few questions to check to see if you are eligible to take part in this research?

---

INTCHECK. **INTERVIEWER:** PLEASE CONFIRM YOU HAVE ADVISED THE PARTICIPANT OF:

MRS Code of Conduct  
Calls being recorded

---

INTCHECK2. **INTERVIEWER:** PLEASE CONFIRM YOU HAVE ASKED AND CHECKED THAT THE PARTICIPANT IS **NOT** TAKING THE INTERVIEW ON A MOBILE DEVICE AND WHILE DRIVING OR OPERATING EQUIPMENT

Yes, it is safe for the participant to proceed

No, it isn't safe – we need to call back later [RESCHEDULE RECRUITMENT INTERVIEW](#)

- 
1. Any data collected over the course of this interview that could be used to identify you, such as your name, address, or other contact details, will be held securely and will not be shared with any third party unless you give permission (or unless we are legally required to do so). Our privacy statement is available at [www.accent-mr.com/privacy/](http://www.accent-mr.com/privacy/). Do you agree to proceeding with the interview on this basis?

Yes

No **THANK AND CLOSE**

- 
2. Do you or any of your close family work, or have you/they worked in the recent past, in the electricity distribution or energy supply industries or in the Market Research profession?

Yes **THANK AND CLOSE**

No

- 
3. Have you ever participated in a market research interview? **IF YES, PROBE WHEN**

Yes, in the last six months **THANK AND CLOSE**

Yes, between 6 months and 2 years ago **GO TO Q4**

Over 2 years ago **GO TO Q6**

No **GO TO Q6**

**TWO THIRDS OF RECRUITS MUST NEVER HAVE TAKEN PART IN A MR INTERVIEW BEFORE**

- 
4. How many interviews have you been involved in during that period?

1-3 **GO TO Q5**

More than 3 **THANK AND CLOSE**



---

5. What was the subject matter of the interviews you attended? **PROBE AND WRITE DOWN**

**IF ENERGY/ELECTRICITY DISTRIBUTION OR HOME HEATING THANK AND CLOSE**

---

6. Have you used the Internet via a computer, tablet or smartphone in the last 3 months?

1. No
  2. Yes
- 

7. Which of the following best describes you?

1. I feel very confident about using the internet
  2. I feel quite confident about using the internet
  3. I don't feel confident about using the internet
  4. I would rather not use the internet at all
- 

8. Which of these items do you have in your home and that are available for you to use?

1. Smartphone
2. Tablet
3. Laptop or desktop computer
4. None of the above

**DIGITAL\_EXCLUSION: CODE AS FOLLOWS**

IF **Q6** = 1 OR **Q7** = 3 or 4 OR **Q8** = 4; **DIGITAL\_EXCLUSION** = YES **PROCEED WITH RECRUITMENT INTERVIEW**  
IF **Q6** = 2 or 9 OR **Q7** = 1 or 2 or 9 OR **Q8** = 1 or 2 or 3: **DIGITAL\_EXCLUSION** = NO **THANK AND CLOSE**

---

9. How worried or unworried are you about the impact of climate change?

Very worried **POSITIVE ATTITUDE**  
Somewhat worried **POSITIVE ATTITUDE**  
Neither worried nor unworried **NEUTRAL ATTITUDE**  
Somewhat unworried **NEUTRAL ATTITUDE**  
Not at all worried **THANK AND CLOSE (NEGATIVE ATTITUDE)**

**RECORD FOR INFORMATION – POSITIVE/NEUTRAL ATTITUDE TOWARDS CLIMATE CHANGE**

---

10. Is your, or is someone in your household's, first language one other than English?

Yes ASK **Q11**  
No

**CHECK QUOTAS**

---

11. **ASK IF Q10 = YES** Do you feel your level of English is adequate to take part in a detailed telephone interview about your current home heating system and future home heating solutions?

Yes  
No **THANK AND CLOSE**

## CHECK QUOTAS

---

12. To which of these ethnic groups do you consider you belong?

**A: WHITE**

British

Irish

Any other White background

**B: MIXED**

White and Black Caribbean **BAME**

White and Black African **BAME**

White and Asian **BAME**

Any other Mixed background **BAME**

**C: ASIAN OR ASIAN BRITISH**

Indian **BAME**

Pakistani **BAME**

Bangladeshi **BAME**

Any other Asian background **BAME**

**D: BLACK OR BLACK BRITISH**

Caribbean **BAME**

African **BAME**

Any other Black background **BAME**

**E: CHINESE OR OTHER ETHNIC GROUP**

Chinese **BAME**

Any other ethnic group **BAME**

Decline to answer **THANK AND CLOSE**

## CHECK QUOTAS

---

13. These days, with the current state of the economy, a lot of people are struggling to pay their household bills. Which of the following best describes how affordable you find your energy bills (or energy costs if you do not receive a bill) and other household bills? Please remember, this research is entirely confidential and that it is only by reaching people in debt, or struggling to pay their bills, that change can be influenced.

I can always afford to pay my energy bill (or top up my gas card/electricity key), and other household bills, on time and do not need to conserve my energy or go without other things to do so

I can always afford to pay my energy bill (or top up my gas card/electricity key), and other household bills, on time but only because I conserve my energy or go without other things to do so **FINANCIALLY VULNERABLE**

I can always afford to pay my energy bill (or top up my gas card/electricity key) on time, but sometimes struggle, or am late, paying other bills **FINANCIALLY VULNERABLE**

I sometimes pay my energy bill (or top up my gas card/electricity key) late because I am struggling financially **FINANCIALLY VULNERABLE**

I am often unable to afford to pay my energy bill (or top up my gas card/electricity key) on time **FINANCIALLY VULNERABLE**

I am rarely, or never, able to afford to pay my energy bill (or top up my gas card/electricity key) on time **FINANCIALLY VULNERABLE**

Prefer not to say **THANK AND CLOSE**

## CHECK QUOTAS

---

14. Which of the following best describes the way in which you occupy your home?

I/we own my/our own home (with a mortgage or outright) **HOMEOWNER**

I/we own my/our own home (through a shared ownership or Keyworker scheme) **HOMEOWNER**  
I/we rent from a private landlord **PRIVATE TENANT**  
I/we rent from a Housing Association/Council **SOCIAL TENANT**  
Our home is provided with my/someone else in the household's job **PRIVATE TENANT**  
I/we live with parents **THANK AND CLOSE**  
I/we live in student accommodation **THANK AND CLOSE**  
Other **CONSIDER SUITABILITY AND CODE/RECRUIT AS APPROPRIATE (CAPTURE DESCRIPTION FOR INFORMATION)**  
Don't know **THANK AND CLOSE**

#### CHECK QUOTAS

---

15. How old are you?  **CODE AGE GROUP BELOW**

- 11. 17-18
- 12. 19-21
- 13. 22-25
- 14. 26-35
- 15. 36-44
- 16. 45-54
- 17. 55 -59
- 18. 60-69
- 19. 70 or older
- 20. Refused **THANK AND CLOSE**

#### ENSURE A GOOD SPREAD ACROSS AGE BANDS

---

16. When was your home built? If you don't know, make an informed guess.

- Before 1900
- Between 1900 and 2000
- After 2000
- Don't know **THANK AND CLOSE**

#### CHECK QUOTAS

---

17. What is your gender?

- Male
- Female
- I describe my gender in another way **NO QUOTA: ALLOCATE AS APPROPRIATE TO MEET QUOTAS**

#### CHECK QUOTAS

### INVITATION: TELEPHONE IN-DEPTH INTERVIEW

---

18. Thank you for answering those questions. Would you be willing to take part in a 60-minute telephone interview to discuss heating our homes now and in the future? You will also be asked to complete a brief pre-task that will take up to 30 minutes beforehand. The research will be undertaken in accordance with the Code of Conduct of the Market Research Society. People who take part in the interview and complete the pre-task will receive **£50, paid by BACS**, to thank them for their time and contribution. Would you be willing to take part?

- Yes **PROCEED TO PRE-TASK AND DATA COLLECTION AND SHARING CONSENT**
- No **REASSURE AND PERSUADE, OTHERWISE THANK AND CLOSE**

## PRE-TASK

**TELL PARTICIPANT ABOUT PRE-TASK:** The interview will focus on home heating options both now and in the future. The task we will ask you to complete before you attend the group will involve telling us about your current heating system and the alternative heating solutions you know about. We may also ask you to read about some alternative heating systems that are available and might be a suitable option for you and your home in the future. We will send you the exact details in advance of the session.

## DATA COLLECTION AND SHARING CONSENT

19. The telephone interview will be recorded, to ensure accuracy and for later analysis. All recordings will be securely stored for a period of 12 months (for reference purposes) before being destroyed. The recording will remain confidential to Accent.

The interview will be held in accordance with the Code of Conduct of the Market Research Society and any views you express during the discussion will be treated with complete confidence and will not be attributed to you personally.

When reporting the findings from this research everything that you say will be confidential, such that it will not be possible to identify you from the report.

Please confirm that is OK

Yes **CONTINUE WITH DETAILS**

No **REASSURE AND PERSUADE, OTHERWISE THANK AND CLOSE**

- 
20. The interview can take place on a date and time to suit you **Interviewer to arrange suitable time in accordance with interviewer availability**

Date	Time	Telephone number
TBC	TBC	Ensure participant's telephone number is captured for confirmation calls and to be used on the date/time of the interview itself.

Great, thanks. I'll just take a few details and will let you get on with your day. We will send you more information by email shortly with details of the next steps.

If for any reason you find you are unable to attend, please could you let me know as soon as possible so that we can invite someone else to take your place?

Please contact us on 020 8742 2211 if you have any queries about your incentive after taking part. Thank you.

**RECRUITER:** Please ensure you have filled in the cover page of the RQ, including email address and mobile number of participant, then complete the following confirmations.

**THANK PARTICIPANT FOR THEIR HELP IN THIS RESEARCH**

## RECRUITER CONFIRMATIONS

---

**RECRUITER – VERY IMPORTANT – PLEASE TICK TO CONFIRM YOU FULLY READ OUT THE DATA SHARING AND CONSENT QUESTION, AND THAT IT MADE SENSE TO BOTH YOU AND THE PARTICIPANT.**

Yes

---

**21. IS THE PARTICIPANT CLEAR ABOUT THE PRE-TASK & DID THEY SAY THEY WOULD DO IT?**

Clear

Will do

## MRS DECLARATION

---

22. I confirm that this interview was conducted under the terms of the MRS Code of Conduct and is completely confidential

INTERVIEWER'S SIGNATURE:

**THANK PARTICIPANT FOR THEIR HELP IN THIS RESEARCH**



# Appendix E

Focus group pre-task

# 3563 / EQUINOX Project Primary Market Research

## Focus Group Pre-Task

### Introduction

Hello and welcome to our research project, which we are undertaking on behalf of Western Power Distribution, now part of National Grid.

This research project is designed to find out about how people think and feel about home heating options now, and how this might change in the future.

You have been invited to participate in the online Zoom discussion group and complete some homework tasks beforehand – thank you so much for being part of this important project.

To help you prepare for the group sessions, we ask you to complete four homework tasks on this LiveMinds platform. You can do this all at once OR one each day, but each has been designed to be quick and easy so please do not spend any longer than **5-10 minutes on each task**.

Task One: Video task: Introduce yourself and your home heating set-up

Task Two: Letter from your future: Tell us what your home heating is like in 2040-2050

Task Three: Mind-dump: Tell us what you already know about alternative (non-gas) home heating systems

Task Four: Find out about.....: Spend some time researching alternative (non-gas) home heating systems and technologies to share in the group

Please ensure that all tasks are completed at least two days before the date of your Zoom discussion group.

Thanks again and we are really look forward to seeing you in the Zoom room,

Ben, Nancy, Rachel

## Task One: Video task

### Introduce yourself and your current home heating set-up

Please take a short film of yourself and your home telling us the following information:

What is your name?

Who do you live with?

Tell us a little about your home – is it a house? A flat? Terraced? Detached? A bungalow? An older property or a new build?

How do you heat your home at the moment (boilers, radiators, gas, electric or another fuel)?

What is your thermostat set on now, or usually through the winter months?

Thinking about your behaviour in previous winters and then thinking forward to this winter, how much would you be prepared to turn your thermostat up or down by – what's your minimum and maximum range?

## Task Two: Letter from your future

### Tell us what your home heating is now like

Okay here is your 'time machine' task.....

Imagine you are living in your current home but the year is somewhere between 2040 and 2050 (so 18-28 years from now) – when you look around what is your home like and how is it heated?

Please imagine you are living in that house of the future and write a letter back to your current self, explaining what the heating system is, how it is different from your current heating system, how you use it, how you are billed, and what the good and bad points are.

Dear Current Me

XXXXXXXXXX

From Future Me



### Task Three: Mind-dump

#### Tell us what you already know about alternative (non-gas) home heating systems

For your third task we would like to simply understand what awareness and knowledge you have about alternative (non-gas) home heating systems.

So, please tell us how informed you already feel about these alternatives for household heating by picking one of the options on this very simple scale

Are you Very informed, Quite Informed, Neither informed nor uninformed, Quite uninformed, Very uninformed?

Please also tell us what you already know and how you know about this – we are keen to capture your baseline knowledge and where it's come from.

### Task Four: Find out about....

#### Spend some time researching alternative home heating systems and technologies to share in the group

And finally, we would like you to spend a little time finding out about alternative (non-gas) home heating systems and technologies.

Have a google around or chat to people and see what you can find out about alternative (non-gas) heating options and write down 3 pieces of information you have learned about how you might heat your home in the future

- 1
- 2
- 3

Also please look at the emotion map and pick three words that describe how you are feeling about this new alternative heating world – We have excited, tender, scared, angry, sad, happy. We would like you to think more about what words best express those feelings.



That's all for now!

We are really excited about meeting you on Zoom in October or November – please check your meeting link for the date and time of your session.

During the meeting we will provide you with some more information on heating alternatives and we can explore your views as a group.



# Appendix F

In-depth interview pre-task



Hello

Thank you for participating in our research project, which we are undertaking on behalf of National Grid.

This research project is designed to find out about how people think and feel about home heating options now, and how this might change in the future.

You have been invited to take part in a 60-minute telephone interview, but before this we need you to complete some homework tasks which are outlined below:

Task One – About your home and heating set-up

Task Two – House of the future

Task Three – Read through materials about heat pumps and thermal storage systems

Please read the materials and fill in your answers and send back to us BEFORE you take part in the interview so that we can discuss what you have written. Don't forget that you will need to return this to us in order to be eligible for the full £50 'thank you' payment.

Thanks again, and we are really look forward to speaking with you on the telephone.

Ben & Catrin

# Task One:

## Please fill in the table below that tells us about yourself and your home heating set-up

Questions	Please write your answers here
What is your name?	
Who do you live with?	
Tell us a little about your home– is it a house? A flat? Terraced? Detached? A bungalow? An older property or a new build?	
How do you heat your home at the moment (boilers, radiators)?	
What is your thermostat set on now, or usually through the winter months?	
Thinking about your behaviour in previous winters and then thinking forward to this winter, how much would you be prepared to turn your thermostat up or down by – what's your minimum and maximum range?	

## **Task Two:**

# **Imagine what your house will be like in 2045 and how it will be heated**

Think about how your 2045 home will be heated.  
Please explain in the box below what you think the heating system will be and how it is different from your current heating?



A large, empty rounded rectangular box intended for the user to write their response to the task.

# Task Three:

## Please read through the information below about Heat Pumps

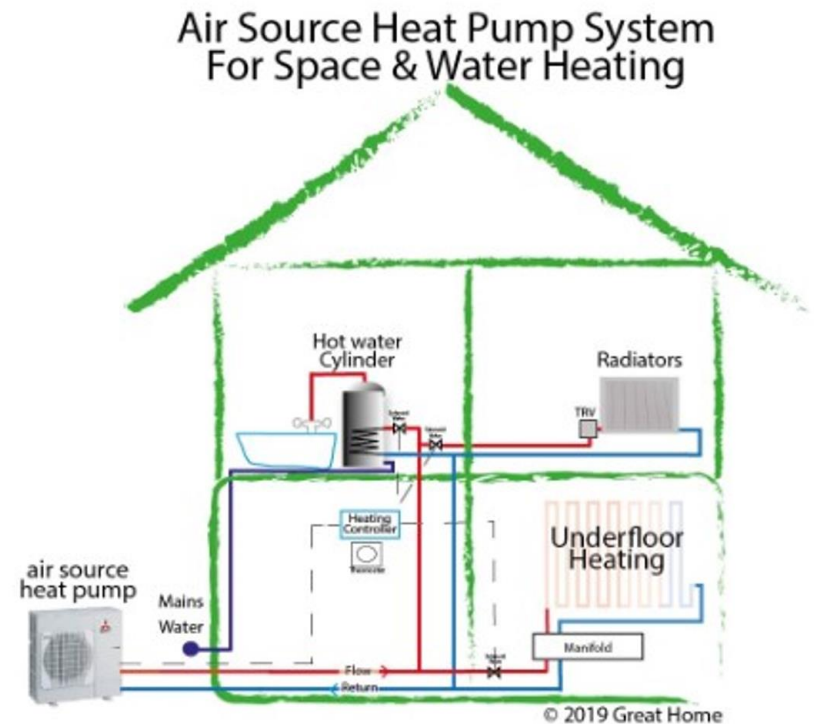
Heat pumps take heat from the air or ground, boost it to a higher temperature using a compressor then transfer the heat to homes.

They work a bit like refrigerators in reverse and work even if the temperature is well below zero.

The heat can be transferred to water, stored in hot water cylinders and sent to radiators or underfloor heating.

In the summer, they can operate in reverse to act as an air-conditioning unit to provide cool air.

For heat pumps to work efficiently properties need to be well insulated so that the heat is kept inside



# Task Three:

## Please read through the information below about Heat Pumps

The cost of buying and installing a heat pump is on average £9,000 compared with an average of £3,000 for a gas boiler.

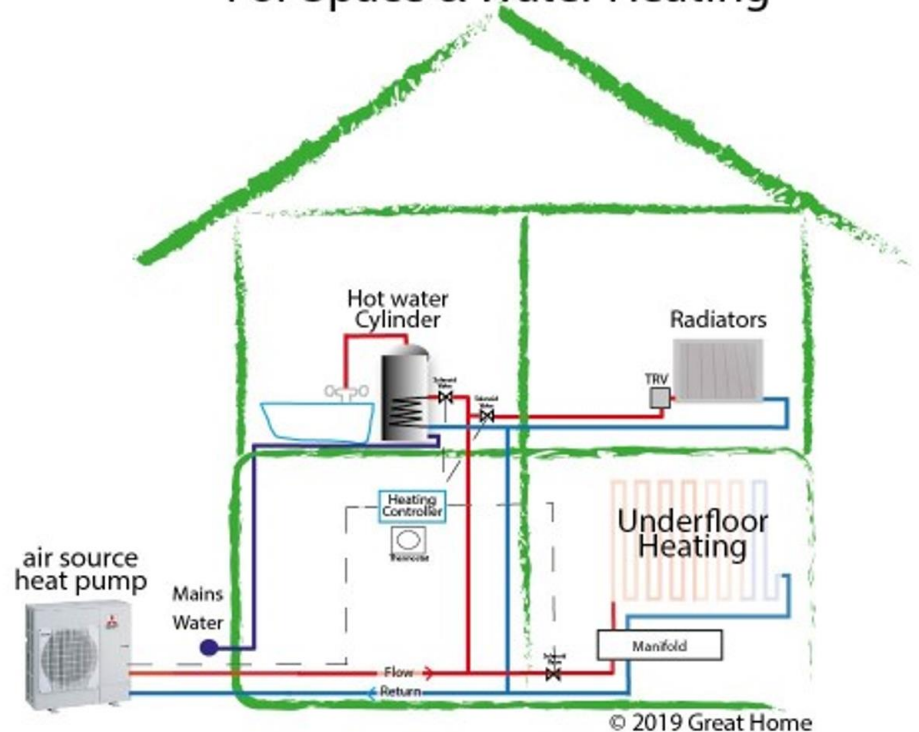
Government grants are currently available that would cover around half of the installation costs of a heat pump.

Running a heat pump would currently cost the average household around £250 more per year compared with a gas boiler given the recent increases in the cost of electricity. There are payment schemes that may help to reduce these running costs.

A gas boiler needs to be replaced \* on average twice as frequently as a heat pump so money can be saved in the long term

\* once every 10 years for a gas boiler compared with once every 20 years for a heat pump

### Air Source Heat Pump System For Space & Water Heating





# Task Four:

## Please read through the information below about Thermal Storage Systems



Renewable energy sources, such as wind and solar, can be quite variable in when, and how much energy they produce. This creates peaks and troughs in the UK's energy capacity

Thermal energy storage is a way of taking excess energy – such as surplus energy from renewable sources – and storing it as heat to be used later for heating. Water tanks are a simple and common example of thermal energy storage, but solid materials such as bricks can also be used

Thermal storage systems can be **connected to several and indeed multiple** different heating systems, such as solar panels, wood or pellet stoves, conventional boilers, Aga-type ranges, or electrical heating elements

# Task Four:

## Please read through the information below about Thermal Storage Systems



Installation costs vary because of the sheer range of thermal storage systems available, and the technologies they are being combined with

Thermal storage systems are not specifically designed to save money - it's better to think of them as products that will solve problems or **allow other technologies to combine or work more efficiently together**

For example, if a thermal store was used to **combine heat from a heat pump and wood stove**, it won't change the amount of energy being produced but it will allow the stove to put energy into a common store and reduce the energy required to be supplied by the heat pump



# Appendix G

Focus group topic guide

# 3563 / EQUINOX Project Primary Market Research

## Focus Group Topic Guide

### Introductions and warm-up: 10 mins (10)

#### **Moderator introductions and welcome everyone to the Zoom Room**

- Hello
- Thank you for doing all of the homework exercises on LiveMinds – these have been very helpful and we have been looking through them
- You will know from these LiveMinds exercises the type of topics we will be covering but just to set the scene for tonight
  - You may have heard family/friends/newspapers/government talk about low carbon or decarbonisation
  - The UK needs to move away from heating their homes with fossil fuels e.g. gas boilers and move to alternative heating systems and technologies
  - Tonight, we will be looking at your knowledge of these alternatives and what you think and feel about these
  - Towards the end of the group, we will imagine that you use one of these alternative ways of heating your home and talk about some payments that could be made for using this heating more flexibly
  - (we will show you some communications that will aim to explain what this all means and get your feedback on those)
- Just to reiterate, we are an independent research agency and here to explore these different topics and there are no right or wrong answers; our client is only interested in your opinions tonight
- We will be together for up to 90 minutes
- Explain about audio recordings – standard market research procedure and for analysis purposes

#### **Participant introduction**

- We know you have shared a bit of information on LiveMinds already but we want you to introduce yourself to the group
  - Name
  - Where you live
  - Type of house
  - How long you have lived there

### Current home heating set-up: 10 mins (20)

**Explain that we want to spend the first part of the discussion finding out a bit more about their current home heating set-up at home and what works/doesn't work well**

**Moderator – have access to the LiveMinds screen and collation of answers from Task One**

- Think about your home – ask a couple of people to explain their set-up

- What technologies do you currently have in place to heat your homes
- What other technology do you have in place to control your heating
- Has everyone got similar set-ups or different, explore any differences
- What's the positives and negatives about your current heating set-up
  - What do you love
  - What really bugs you/your family
- We asked about flexibility of thermostat – probe around LiveMinds responses
  - Prepared to change thermostat
  - Why/Why not

### Awareness/knowledge of other technologies: 5 mins (25)

**During the LiveMinds task you completed something that told us what you know/don't know about alternative heating technologies – so this is non gas heating**

**Moderator – have access to the LiveMinds screen and collation of answers from Task Three**

- Before you began this research exercise, what did you already know
  - Word association exercise: alternative heating associations (non gas)
    - When we talk about alternative heating, (non-gas) what words comes to mind
    - How do you know this
    - Sources of information
    - How clear are you about the options available to you
  - How much did you already know about low carbon/decarbonisation
    - How did you find this out
    - How important is this to you
- Quick Round Robin exercise: What are the key questions you feel you need to know the answers to?

### Triggers/barriers to alternative heating solutions: 10 mins (35)

**In a moment we will provide you with a bit of information on alternative heating technologies but before we do, let's just find out your baseline thoughts and feelings on different heating systems and technologies**

- First of all – let's get a stake in the ground to find out how likely you are to move to an alternative (heat pump, thermal storage systems, low carbon technology) in the next 5 years, hold up your fingers from 1-10 (1 unlikely, 10 likely)
- Why higher than a 7
  - What makes you likely or interested in this kind of heating for your home
  - What do you think are the benefits
  - Probe on - For you and home, For environment, For cost reasons

- Why lower than a 7
  - What makes you unlikely or disinterested in this kind of heating
  - What do you think are the disadvantages
  - Probe on - For you and home, For environment, For cost reasons
- What do you think would move you further along that spectrum and closer to the 7-10
- What information would you need to help you make a decision

**Moderator – have access to the LiveMinds screen and collation of answers from Task Two**

- Now let's, think about the house of the future
  - Gestalt room exercise
  - What do you imagine that to be like
  - Look around what does it look like
  - What are the heating choices
  - What does it feel like – positive/negative/excited/scared

**Moderator – have access to the LiveMinds screen and collation of answers from Task Three/Four**

- When you did the 'research' exercise
  - What did you put into google
  - What vocab, language, questions
  - What did you find out
  - What were the key hooks that got you looking further
  - What were the switch off points

**Share information about alternative heating technologies: 5 mins (40)**

**STIMULUS SLIDES 1-4 – provide information about heat pumps and thermal storage systems similar to those used in the quant exercise**

**Response to alternative heating technologies: 15 mins (55)**

**So let's go through these different options and see how you feel**

**Share Heat Pump explanation again using information from quant exercise**

- Appeal out of 10
- Likelihood of take up – and timeframe
- Reasons for/against
- Go through different parts of description
- What excited you about this
- What are your concerns/push points
- What more information would you need
- How would you explain this to someone else
- What would be the main benefits of having this in your home

**Share Thermal Storage Systems explanation again using information from quant exercise (lower priority cf. Heat Pumps, above)**

- Appeal out of 10
- Likelihood of take up – and timeframe
- Reasons for/against
- Go through different parts of description
- What excited you about this
- What are your concerns/push points
- What more information would you need
- How would you explain this to someone else
- What would be the main benefits of having this in your home

**EQUINOX: 30 mins (85)**

**We would now like to share some information about a project that is happening which will be offering people with heat pumps payments for using the heat pump more flexibly**

**We recognise that this will be a bit of a jump for you all as you don't currently have a heat pump but let's keep that vision in our minds of the House of the Future that we discussed before that has a heat pump and imagine that this is your home**

Now imagine that you receive the following communications **STIMULUS SLIDES 5 a, b, c**

- Work through Slide by Slide
  - Key message/take out
  - What is this saying to you
  - What do you understand by this
  - What do you understand as the mechanics of what's involved
  - What do you need to do (CTA)
  - What would you do as a result of seeing this
  - What makes you want to get involved
  - What stops you getting involved
    - Environmental, societal, financial drivers
  - Having seen this, what do you understand are the key benefits of these flexibility payment schemes (for you, others)
  - What do you think are the key disadvantages (for you, others)

Now we want to explain and share some of the payment schemes that might be on offer– **STIMULUS SLIDES 6-9 – Payment Schemes 1-4**

- For each - initial response
- What do you think about this scheme
- What would you do if this was offered to you
- What do you think are the main benefits/disbenefits
- What makes you want to get involved
- What stops you getting involved

- Environmental, societal, financial drivers
- What would help you take part where the supplier has access to turn on/off heat pump OR in the future alter your thermostat up/down
  - Information e.g., helping environment, helping society avoid power cuts
- What would help you accept less notice – this would allow more dynamic management of supply and demand e.g., respond to a big event
  - Information e.g., helping environment, helping society avoid power cuts
- What about the financial benefit
  - Spontaneous – what % would you expect off each bill
  - **Share Slide 10**
  - What do you think of the estimated cost savings for taking part
    - +/-
    - Reasons

Thank and Close: 5 mins (90)

**Final questions, clarifications, commitment to further research**

**Scale of 1-10 how likely you would be to get a Heat Pump**

**Scale of 1-10 how likely you would be to participate in EQUINOX**



# Appendix H

Focus group stimulus pack



Heat pumps take heat from the air or ground, boost it to a higher temperature using a compressor then transfer the heat to homes.

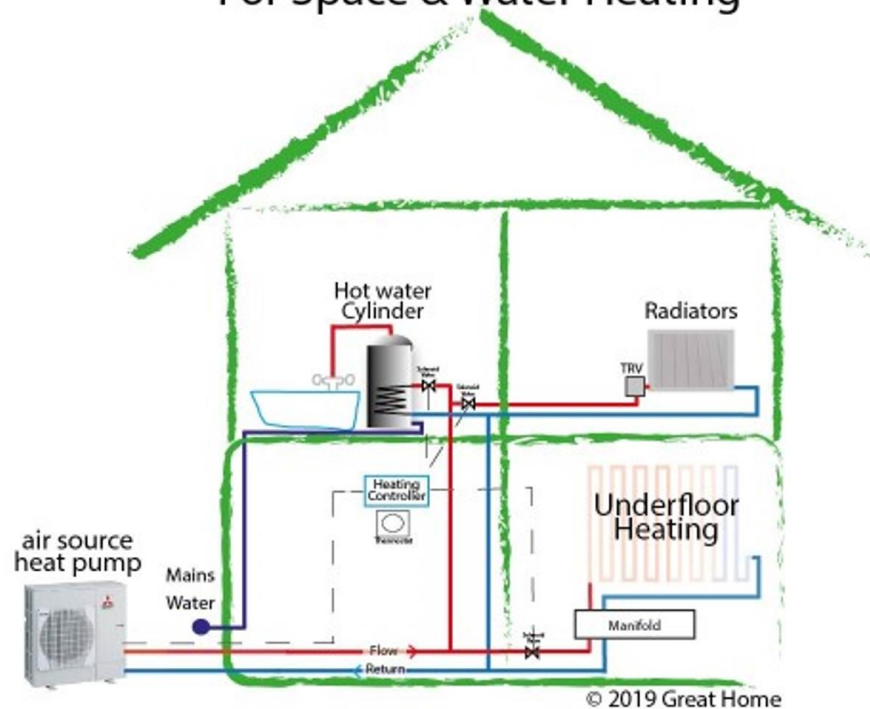
They work a bit like refrigerators in reverse and work even if the temperature is well below zero.

The heat can be transferred to water, stored in hot water cylinders and sent to radiators or underfloor heating.

In the summer, they can operate in reverse to act as an air conditioning unit to provide cool air.

For heat pumps to work efficiently properties need to be well insulated so that the heat is kept inside

## Air Source Heat Pump System For Space & Water Heating



The cost of buying and installing a heat pump is on average £9,000 compared with an average of £3,000 for a gas boiler.

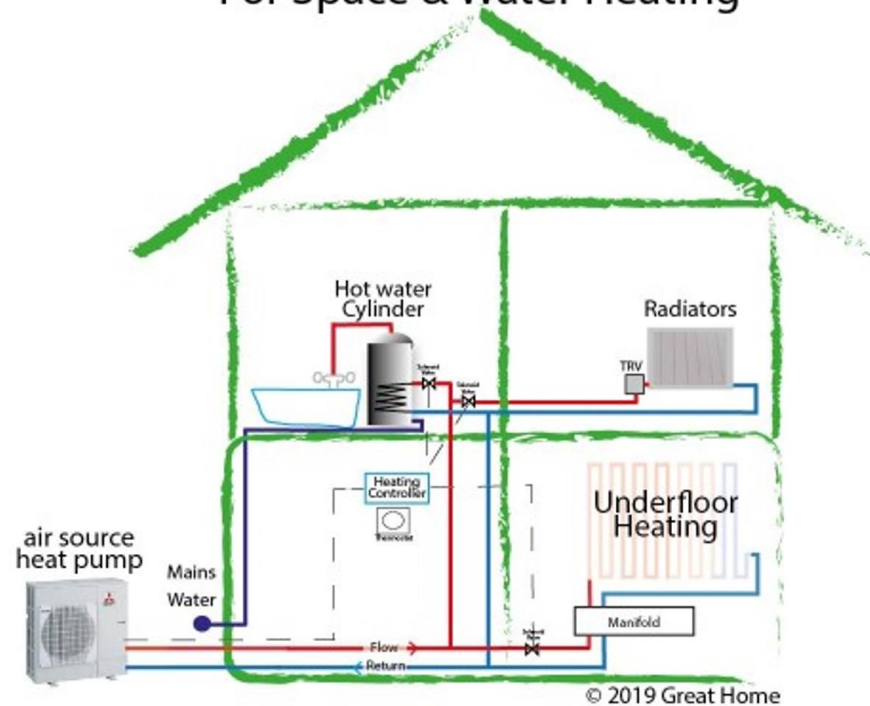
Government grants are currently available that would cover around half of the installation costs of a heat pump.

Running a heat pump would currently cost the average household around £250 more per year compared with a gas boiler given the recent increases in the cost of electricity. There are payment schemes that may help to reduce these running costs.

A gas boiler needs to be replaced \* on average twice as frequently as a heat pump so money can be saved in the long term

\* once every 10 years for a gas boiler compared with once every 20 years for a heat pump

## Air Source Heat Pump System For Space & Water Heating



## Thermal Storage Systems



Renewable energy sources, such as wind and solar, can be quite variable in when, and how much energy they produce. This creates peaks and troughs in the UK's energy capacity

Thermal energy storage is a way of taking excess energy – such as surplus energy from renewable sources – and storing it as heat to be used later for heating. Water tanks are a simple and common example of thermal energy storage, but solid materials such as bricks can also be used

Thermal storage systems can be **connected to several and indeed multiple** different heating systems, such as solar panels, wood or pellet stoves, conventional boilers, Aga-type ranges, or electrical heating elements

## Thermal Storage Systems



Installation costs vary because of the sheer range of thermal storage systems available, and the technologies they are being combined with

Thermal storage systems are not specifically designed to save money - it's better to think of them as products that will solve problems or **allow other technologies to combine or work more efficiently together**

For example, if a thermal store was used to **combine heat from a heat pump and wood stove**, it won't change the amount of energy being produced but it will allow the stove to put energy into a common store and reduce the energy required to be supplied by the heat pump

We're launching a groundbreaking heat pump trial - EQUINOX - giving a handful of lucky customers the opportunity to earn £100 for helping us research cheaper, greener heating for all.

Your role is simple. All you have to do is turn off your heat pump for a few hours from time to time - when the UK's energy mix is especially dirty. Given the way heat pumps work, this shouldn't make your home any less comfortable, and we'll pay you for each time you get involved .

How does it work?

Between December and April, we'll occasionally ask you to turn off your heat pump for two hours

We'll give you a day's notice (by email) to tell you when we'd like you to turn it off

It's always up to you whether you take part or not

You have to live in the right area (covered by National Grid Electricity Distribution)

We'll ask you to fill out a few quick questionnaires: one before and one after the trial and might ask you a couple of questions along the way

And for your trouble.....You'll earn around £100 credit on your Electricity account over the Winter  
You'll be top of the list to get a cutting -edge device so you can track your energy in real time from your phone

Switching off your heat pump for a few hours shouldn't mean you're any less cosy. Because heat pumps warm your house more slowly and gently than boilers, you can simply put on the heating a while before the two hour window to build up warmth and go back to heating your home once the event is over.

Be part of cutting-edge research to help the UK move to green heat

Heat pumps are getting more affordable, accessible and convenient. This is fantastic news for the UK (and the planet) – but it'll also increase the UK's electricity demand.

To that we say: challenge accepted.

The EQUINOX project run in partnership with National Grid Electricity Distribution, is designed to investigate how people can become part of the solution by heating their homes in a greener, more flexible way, outside of troublesome 'peaks' in energy demand.

This way, the electrical grid won't burn as much dirty, expensive gas to meet that demand at those times, and you'll have made electricity cheaper and greener for everybody.

No one has measured this at scale in the UK before: you'll be on the very forefront of the green revolution



## Payment scheme 1: (Save in Advance/ Remote)

Customer is paid a set amount at the beginning of each month for agreeing to allow suppliers to remotely control their heat pump when required (notified by text/email 24 hours before each event and transparent on bill)

Supplier has access to customer heat pump to turn **on or off** during events

Events would happen during periods when the grid is in demand around 2-3 times per week in winter

These would be 2-hour windows that are likely to be morning and evening peak times (e.g. 5-7pm)

Supporting facts:

1. Temperature change will be minimal and customers are unlikely to notice
2. Heat pump technology produce a lower level of heat over a longer period of time so if you turn the heat pump on/off or thermostat up/down you don't notice the difference for a while
3. External trials in North America show that customers don't notice change

## Payment Scheme 2: (Save in Advance/Manual)

Customer is paid a set amount at the beginning of each month for agreeing to manually turn their heat pump on or off when required

Customer is contacted (via text or app) and asked to turn heating **on or off** during events and they can choose whether to participate

Events would happen during periods when the grid is in demand around 2-3 times per week in winter

These would be 2-hour windows that are likely to be morning and evening peak times (e.g. 5-7pm)

Supporting facts:

1. Temperature change will be minimal and customers are unlikely to notice
2. Heat pump technology produces a lower level of heat over a longer period of time so if you turn the heat pump on/off or thermostat up/down you don't notice the difference for a while
3. External trials in North America show that customers don't notice change

## Payment Scheme 3: (Save as you go/Remote)

Customer is paid after each event for agreeing to allow suppliers to remotely turn their heat pump on or off (notified by text 24 hours before and transparent on bill)

Supplier has access to customer heat pump to turn **on or off** during events

Events would happen during periods when the grid is in demand around 2-3 times per week in winter

These would be 2-hour windows that are likely to be morning and evening peak times (e.g. 5-7pm)

Supporting facts:

1. Temperature change will be minimal and customers are unlikely to notice
2. Heat pump technology produce a lower level of heat over a long period of time so if you turn the heat pump on/off or thermostat up/down you don't notice the difference for a while
3. External trials in North America show that customers don't notice change

## Payment Scheme 4: (Save as you go/Manual)

Customer is paid after each event for agreeing to manually turn their heat pump on or off when required (or turn thermostat up or down)

Customer is contacted (via text or app) and asked to turn heating **on or off** during events and they can choose whether to participate. Customer only paid if they participate

Events would happen during periods when the grid is in demand around 2-3 times per week in winter

These would be 2-hour windows that are likely to be morning and evening peak times (e.g. 5-7pm)

Supporting facts:

1. Temperature change will be minimal and customers are unlikely to notice
2. Heat pump technology produce a lower level of heat over a long period of time so if you turn the thermostat up or down you don't notice the difference for a while
3. External trials in North America show that customers don't notice change

## Potential savings

- Estimated that there would be 15 -25 events over the winter months
- Equates to 2-3 times a week that the thermostat would either be turned up/down by supplier or household for 2 hours
- Customers would receive up to £100

## IF FLEXIBILITY EXPLANATION NEEDED AFTER 3<sup>rd</sup> PARTY COMMS

### Why is flexibility needed

1. Electricity consumption is set to rise with electric cars and move away from gas heating
2. This creates higher demand and can create peaks at key times this has been typically early evening when more people are at home
3. Flexible tariffs are designed to be cheaper to use electricity at certain times of the day– a bit like the economy 7 and 10 when it would be cheaper to use electricity during the night
4. With the new flexible tariffs, it wouldn't be a set night time tariff, instead the cheaper times would be flexible and your supplier would inform you (via an app/smart meter) when those times would be

