



Committee on
Fuel Poverty



centre for
sustainable
energy

Understanding the barriers and enablers to supporting fuel poor households achieve net zero

Technical Annex

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1. Detailed methodology

This technical annex provides the methodological detail and approach used to undertake this research. It outlines the research questions addressed in the study, then describes the methodology and analysis employed to conduct the research. Finally, examples of research tools (interview and workshop guides) are provided.

Research questions

The two research questions and sub questions for this study were:

1. How do different stakeholders supporting fuel poor households expect these households to transition to net zero?

a) What enablers and barriers do stakeholders think households in fuel poverty will experience in the transition to net zero?

b) How do these enablers and barriers change depending on the characteristics (such as age and health status) and household characteristics (such as tenure type and household composition) of the fuel poor?

c) Which enablers and barriers are perceived to be most important for a fair transition for the fuel poor?

d) What could be done to overcome barriers?

e) What do stakeholders think are the opportunities for participation of, and what are the expectations on, the role of the state to support attainment of the 2030 fuel poverty target?

2. In relation to government support schemes intended to benefit fuel poor households:

a) What are the eligibility criteria for joining each scheme?

b) How are households identified? Who identifies them?

c) What are the barriers and enablers to identifying fuel poor households?

d) Is there evidence/data of fuel poor households dropping out of schemes? What schemes does this include? What are the reasons for dropping out? Is there evidence/data on whether fuel poor households achieve the intended outcomes of the scheme? And if not, why not?

e) What are the barriers and enablers to fuel poor households taking up scheme support?

f) How do these enablers and barriers change, depending on the characteristics (such as age and health status) and household characteristics (such as tenure type and household composition) of the fuel poor?

Literature review

A literature review collected and assessed existing evidence to answer the research questions and identify any specific knowledge gaps.

A literature search was conducted on Google Search for grey literature and Google Scholar for academic literature using a list of key search terms to generate a longlist of literature. The list of search terms outlined in Table 1 below was agreed with the Department of Energy Security and Net Zero (DESNZ) and the Committee on Fuel Poverty. A search of known energy organisation websites (e.g. National Energy Action, Energy Systems Catapult, Citizens Advice and our own research) and the government website was also conducted to source other relevant documentation. DESNZ also provided articles, literature and energy efficiency scheme evaluation reports to inform responses to both research questions.

Table 1: Search terms and number of documents added to the longlist

Search term and literature sources from DESNZ	Number
Articles and literature provided by DESNZ	10
Energy efficiency scheme study provided by DESNZ	22
Cold homes AND/OR net zero	6
Energy grants OR energy subsidies OR energy efficiency grants/subsidies	2
Energy grants OR energy subsidies OR energy efficiency grants/subsidies	1
Energy justice and decarbonisation	1
Energy transition AND low income OR poor households OR fuel poverty	2
Energy transition AND low income OR poor households OR fuel poverty	2
Energy vulnerability AND net zero	3
Evaluation AND [energy efficiency scheme]	3
Fuel poverty AND Decarbonisation	8
Fuel poverty AND Energy Company Obligation	3
Fuel Poverty AND energy efficiency	18
Fuel poverty AND net zero	24
Fuel poverty AND net zero AND opportunities OR barriers	2
Fuel poverty AND net zero AND opportunities OR barriers	4
Fuel poverty AND net zero AND ombudsman	2
Fuel poverty AND retrofit	5
Fuel poverty AND retrofit	2
Fuel poverty AND/OR Energy Transition	3
Fuel poverty AND/OR Energy Transition	3
Hard to decarbonise AND homes AND/OR energy efficiency AND/OR net zero	21
Hard to decarbonise AND homes AND/OR energy efficiency AND/OR net zero	1
Hard to treat homes AND energy efficiency	7

Hard to treat homes AND energy efficiency AND net zero	3
Hard to treat homes AND energy efficiency AND net zero	1
Low income AND low energy efficiency	1
Total	160

Sources referenced within the identified literature were scanned to ensure relevant evidence not captured by the initial search was not omitted from the assessment.

In total, 160 literature sources were collated. Literature was given an initial scan to assess whether to shortlist it for an in-depth read. Assessment was based on:

- The extent to which the literature source addressed one or more of the research questions or sub questions.
- Its geographic coverage – prioritising UK references that focused on England.
- Whether the evidence was tenure specific, to ensure research on all tenures was included in the review.
- Whether the evidence covered personal or household characteristics that related to risk of fuel poverty or vulnerabilities as defined by Priority Service Register needs codes.¹
- Date published, selecting resources published 2018-2024.

Information was only sought on government energy efficiency schemes that ran from 2012.

Analysis

A shortlist of 56 literature sources was further refined after consultation with DESNZ to yield 42 literature sources for in-depth review. All 42 pieces of literature were read in detail. Each piece of literature was assessed for both quality using a Red-Amber-Green rating system and relevance to the research questions. Quality was gauged based on:

- 1) The literature source, with high quality defined as peer reviewed journal, established organisation, government department, expert in the field.
- 2) The detail and comprehensiveness of content. This was gauged subjectively by researchers (high to low) in relation to contribution made to one or more of the research sub questions (a highly detailed response to one or more sub questions was rated as high).

Literature was categorised by reviewers:

- Green: High quality for both (1) literature source and (2) detail and comprehensiveness
- Amber: High quality for (1) literature source or (2) detail and comprehensiveness; medium quality for the aspect which was not rated as high quality.
- Red: High quality for (1) literature source or (2) detail and comprehensiveness, low quality for the aspect which was not rated as high quality.

¹ Distribution Network Operators offer additional services to vulnerable electricity customers via a Priority Service Register, Vulnerability is based on 32 needs codes which include medical dependency on electricity, mobility, chronic health condition, communication disability (e.g. visual or speech impairment), age (65+, pregnancy, child under 5 in the home), other factors (e.g. mental health), English is Second Language, and temporary conditions like hospital discharge. Ofgem (2015) Priority Services Register Review – Final Proposals. Appendix 4 https://www.ofgem.gov.uk/sites/default/files/docs/psr_final_proposals_final_0.pdf

Thirty-four pieces of literature were rated green; eight were rated amber; none were rated red. All literature sources were deemed as being of high quality. Therefore, amber rating referred only to the relative contribution made to a research sub question.

Relevance was determined based on (1) which research questions or sub questions the literature addressed; (2) whether the paper focused on England; (3) tenure. The three relevance categories were used to ensure that all research sub questions and tenures were addressed (as far as the literature enabled). All literature related to England, the UK, or for an EU wide study, included a location in England. The categorisation of literature based on relevance was used to identify gaps in the evidence that needed to be addressed via primary research.

The 42 literature sources reviewed were summarised, with reference to the research questions and sub-questions. Details of each individual paper were entered into an excel database. This included document name, citation, document type, summary of findings, which research questions it addressed, and the assessment of the quality and relevance of each piece of evidence.

Limitations

The literature review provided a swift means to identify key literature sources. Although comprehensive, some literature sources may have been missed. Furthermore, 29 papers in the longlist of 160 were assessed as 'Maybe' for further review, indicating that further resources with relevant content were available.

The most recent iterations of some energy efficiency schemes were being independently evaluated at the time of undertaking the research. We did not have access to two of these evaluations in draft form, which would have further informed the research.

The definitions of fuel poverty differ between England, Scotland and Wales. The majority of literature reviewed was applicable to the UK or England; four sources referred solely to Wales or Scotland. This literature was included as it gave specific high-quality evidence on one or more of the research sub questions or was tenure specific.

Reviewed papers and reports often did not distinguish between the interconnectedness of fuel poverty with other vulnerabilities and issues. It was sometimes difficult to untangle what could be done to address fuel poverty specifically from other issues.

Interviews and deliberative workshops

Thirty-seven interviews and six workshops were conducted with a range of energy sector stakeholders that work with fuel poor households, as well as people living in fuel poverty who had recently participated in an energy efficiency scheme. Stakeholders included energy company representatives, local authorities, social housing providers, those working in the private rented sector, independent advice organisations, delivery organisations including retrofit co-ordinators and installers, trades bodies and several academics working around the topics of fuel

poverty and energy efficiency. The purpose of interviews was to fill evidence gaps identified in the literature review and to explore the research sub questions in more depth. Workshops provided an opportunity for stakeholders in the groups outlined above to offer further insights on initial findings of the research. Workshops were designed to inform and develop participants understanding on the topic of the net zero transition of fuel poor households. They also involved discussion and elicitation across themes on the barriers and enablers both in the transition to net zero and the customer journey. Workshops also explored the roles of different organisations in supporting fuel poor households.

Interviews and workshops were held online in February 2024. One interview with a fuel poor householder was conducted by phone. Most interviews were conducted prior to workshops, with some overlap between the two.

Semi-structured interview and deliberative workshop participants

Stakeholders

A sample frame was developed using CSE and DESNZ contacts (Table 2). Stakeholders were recruited to the sample via email, along with an accompanying information sheet which set out the aims and objectives of the study, how data would be used, data storage and security, confidentiality, benefits of taking part, incentive, and how to withdraw from the research. Stakeholders were invited to participate in an interview and asked to indicate if they would also be willing to participate in a workshop.

A topic guide was developed in collaboration with DESNZ to use during the semi-structured interviews. The topic guide was structured in line with the research questions and literature review. The full guide can be found in Section 2. The topic guide was tailored for each interview by the researcher to focus on the participant's area of expertise relevant to the research sub questions. The interview topic guide was piloted with one interviewee to check flow and clarity.

Interviews were around one hour each with one interviewee. However, there was some variation in interviews: two were shorter and focused on a specific research sub question; three interviews engaged with more than one organisational representative.

In total, 37 interviews were conducted with stakeholders.

Table 2: Interview stakeholder target and achieved sample.

Interviewee group	Details (examples)	Target	Number
Energy Company representative	Roles included schemes delivery, policy, regulation	3	2
Local authority representative or council partnership	Roles included retrofit, fuel poverty, sustainability, public health	4	3

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Social housing representative	Roles included asset management, retrofit, energy advice representative	3	3
Private housing representative	Roles included local authority private housing, independent housing advice representative, private tenant organisations	2	2
Independent advice organisation	Representatives of national policy fuel poverty organisation, community energy groups, local energy advice delivery organisations and retrofit scheme liaison.	7	8
Scheme / Retrofit co-ordinator	Roles included retrofit Co-ordinators; retrofit oversight staff	2	2
Installer	Representatives of large or smaller installer organisations	2	1
Lead generation company / managing agent	Representatives of lead generator companies	2	1
Trade body or association	Representatives of retrofit and energy sector trade bodies	2	5
Academics	With a focus on fuel poverty, energy efficiency and retrofit and just transition	2	3
Distribution Network Operator	N/A	1	0
Other	Included data and energy efficiency bodies representatives	0	3
Fuel poor households	Off grid based in Somerset, received support from HUG	5	4
Number of interviews		35	37

Stakeholder interviewees were offered a 'thank you' for participating. This took the form of a donation of £50 to one of three fuel poverty charities made by Centre for Sustainable Energy on their behalf.

Fuel poor households

Somerset residents who had been advised by the Centre for Sustainable Energy (CSE) about the Home Upgrade Grant (HUG) scheme were contacted and invited to participate in an interview and workshop. All households contacted lived in properties rated EPC D-G or there was no EPC and had an estimated household annual income of £31,000 or less. Further selection of households was based on two criteria:

- One group of households had a financial impact recorded by CSE for installation of an energy efficiency measure. This could relate to any energy efficiency measure, such as an LED light bulb, indicating a degree of agency on energy efficiency by the household. Some households could comment on proceeding to the installation stage of retrofit measures under HUG of the customer journey.

- A second group of households did not have a financial impact recorded but had been chased for HUG eligibility information, indicating that they had participated to some extent in the initial engagement and eligibility stages of the customer journey. The households were owner occupiers or from the private rental sector.

In collaboration with DESNZ the topic guide used for stakeholder interviews was adapted for use during the interviews with fuel poor householders. The topic guide was designed to explore interviewee's experiences of participation in energy efficiency schemes. Researchers were provided with brief notes from advice service records about each householder's engagement regarding the HUG scheme. Participants were made aware of this and that their personal details and advice record notes would not be used in the research.

Four interviews were conducted with fuel poor households, three owner occupiers and one private landlord with fuel poor tenants. These interviewees were offered a £75 shopping voucher as an incentive.

Analysis

Interviews were recorded, transcribed and then anonymised. Recordings were solely made for the purposes of transcription and were only accessible to researchers involved in the study. Transcripts were thematically analysed in NVivo qualitative data analysis software.² Thematic analysis utilised a deductive approach, based on the research questions and interview guide, and an inductive approach with additional emergent themes added. In this way, findings from the qualitative data analysis were aligned to the literature review and research questions, whilst allowing for new insights to emerge.

Limitations

On stakeholder interviews, there was lower representation from installers and lead generators / management agents than was sought. It was not possible to obtain the perspective of a distribution network operator.

Interviews with fuel poor households only engaged with Somerset residents who'd participated in one energy efficiency scheme (HUG). It was not possible to obtain the perspective of fuel poor households from other areas or with experience of other schemes within the time frames of the research.

Workshops and participants

Five themed workshops were facilitated with energy sector stakeholders and one with fuel poor households. Themes for stakeholder workshops were based on tenure and the research questions. As far as possible, stakeholders across the English regions were involved to avoid overly focusing on one geographic area. Four workshops included a mix of stakeholders from different organisations; one workshop included staff from a single organisation in relevant,

² <https://lumivero.com/products/nvivo/>

diverse roles. The workshop themes and participant stakeholder groups are summarised in Table 3.

Table 3: Summary of workshop themes and participants

Workshop theme	Role / sector (region)	Number
National, local authority and social housing	<ul style="list-style-type: none"> Two Local authority or council partnership (South East and London) Academic (national) Trade body or association (national) Social housing (West Midlands) 	5
Social housing	Staff from one registered housing provider with roles in assets and planning management, decarbonisation management, technical liaison, and advice provision. (West Midlands)	4
Independent advice organisation / installer / retrofit coordinator	<ul style="list-style-type: none"> Scheme / Retrofit co-ordinator (former advisor) (South West) Installer (South West and West Midlands) Local authority or council partnership (West Midlands) Independent advice organisation (North East) 	4
Private rental sector	<ul style="list-style-type: none"> Two local authority or council partnership (South West) Two independent advice organisation (South West, national) Academic (North West) 	5
Retrofit	<ul style="list-style-type: none"> Academic (South West) Independent advice organisation (South West) Two trade bodies (national) Local authority or council partnership (North West) 	5
Fuel poor households	Three owner occupiers (one of whom had also been interviewed).	3
Total workshop participants		26

In total 26 participants were involved in workshops, 15 of whom had not participated in interviews. Table 4 summarises workshop participants by group, with the target and achieved number of participants.

Table 4: Summary of workshop participants by group, target and number engaged

Workshop participant	Target	Number
Frontline workers / Independent advice organisation	11	3

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Governance and programme management (e.g. data matching)	3	0
Energy Company representative	2	0
Local authority representative or council partnership	3	5
Social housing representative Asset management; energy advice	3	5
Private housing representative	2	2
Scheme / Retrofit co-ordinator	2	1
Installer	2	1
Lead generator / managing agent	2	0
Trade body or association	2	3
Academics	2	3
Fuel poor households	5	3
Total	39	26

All workshops took place from 16th-23rd February 2024 during office hours (9am-5pm). They were of 90 minutes duration and conducted online by two researchers per workshop.

A workshop guide was developed which was then tailored to each workshop theme. The guide was structured as follows:

- Welcome and introductions.
- Topic introduction – fuel poverty and net zero
- Key barriers and enablers, fuel poor households' transition to net zero
- Energy efficiency customer journey
- Role of national government, local government and other service providers and key actors
- Summary – main priorities

The generic workshop guide is provided in Section 3.

Interactive whiteboards and a Mentimeter ranking of key barriers were used in workshops to share and sense-check research findings informed by the literature review and interviews, to elicit feedback from participants, building on existing available material, for instance the National Retrofit Hub scheme customer journeys.³ Digital whiteboards were shared during the workshops for comments, discussion and feedback. The use of online tools was useful as participants could engage verbally, via these platforms or both.

Stakeholders and fuel poor households were offered the same thank you and incentive (£50 donation, £75 shop voucher respectively) as for interviews. For participation in both an interview and a workshop two donations or two vouchers were offered.

³ National Retrofit Hub Working Group 5 on Delivery Approaches has Miro boards for ECO, LADs and HUGs, SHDF, and Welsh energy efficiency schemes. This is summarised in document 231213_WG5 All Group.pptx. All are available at: <https://nationalretrofitHub.org.uk/delivery-approaches-3/>

Analysis and results

Workshops were recorded and transcribed, then analysed in NVivo software as described for interviews utilising a simplified coding structure which reflected the focus of the workshops. Analysis from workshops was combined with analysis of the interviews for reporting purposes.

Limitations

The number of workshop participants was lower than sought and this was influenced by time constraints for data gathering. Some interviewees signed up to but did not participate in workshops.

The views of frontline workers in independent advice organisations were reduced in workshops (compared to the sample target number). The views of energy suppliers, governance and programme management and lead generators were absent from workshops.

It proved difficult to engage fuel poor households, possibly due to timing of workshops during the day, competing priorities and lack of digital access.

2. Interview topic guide (Stakeholder)

Interviewer instructions

This topic guide has been developed to support discussions with key stakeholders involved in fuel poverty, or directly involved in the design, implementation and/or delivery of energy efficiency schemes.

Interviews are designed to obtain more information on the research questions and sub-questions where there is less evidence, based on the literature review. Brief prompt information from the evidence assessment has been added in for each sub-question. You will need to tailor the questions and prompts asked, depending on the interviewee. Timings given are indicative only as some questions may be omitted for some interviewees.

Instructions e.g. Prompt or Probe (for more information), are given in italics.

Prep work – 2 days before the interview

- ✓ Check through questions and note any tailoring needed for specific interviewee based on their areas of expertise. **Significant tailoring will be required.** Save a copy of this Interview topic guide (include name of interviewee, date, time etc), highlight key questions and prompts. Check the 'Comments' column in the Interview tracker document for each interviewee.
- ✓ Note if the interviewee was willing to participate in a workshop.

Introduction *2 mins*

Could we begin with you telling me a bit about yourself, your organisation and your role?

Does your role / organisation support fuel poor households? How and in what way?

RQ1: How fuel poor households can be supported in the transition to net zero. *25 mins in total*

I wanted to explore two main areas with you. In this first section, I'd like to focus on what support you think fuel poor households will need in the UK's transition to net zero.

For this research, we are using a definition of fuel poverty based on the Low Income Low Energy Efficiency (LILEE) indicator used to measure fuel poverty in England. Under this indicator, a household is considered to be fuel poor if:

- they are living in a property with an energy efficiency rating of band D – G, and
- when they spend the required amount to heat their home, they are left with a residual income below the official poverty line.

So, the three key elements in determining whether a household is fuel poor are:

1. the property energy efficiency rating
2. household income, and
3. energy prices.

This research is specifically considering 'net zero' in relation to energy efficiency and low carbon heating schemes to reduce carbon emissions.

a) i) In your opinion, what challenges do fuel poor households face when engaging with energy efficiency and low carbon heating schemes?

Prompts, adapt to interviewee, do not need to discuss all. Briefly jot down or highlight below the key points made, for reference in Q1 c)

E.g. You mentioned [XXXX]. Are there other [XXXXX] challenges you think fuel poor households might experience?

What about [YYYY] barriers?

- **Financial:** high upfront costs (e.g. solar PV); hidden costs (e.g. rewiring, repairs); higher bills for electric heating; if in debt FP HH can't switch tariff or cap gas if changing to electric heating. SHP or LA may not access scheme funding if competitive tender.
- **Physical barriers:** house accessibility, disruption, house condition. Inefficient homes.
- **Tenure:** private or social renters have limited choice / control over property upgrades. Private LL split incentive – don't benefit so don't invest.
- **Scheme design:** "Least cost" approach may not focus on fuel poor households. Fails to address all retrofit needs (e.g. boiler but no insulation); complexity of scheme; partial funding required for measures.
- **Awareness and advice:** Limited understanding of suitable / available energy efficiency and low carbon options. Energy advice has patchy availability, often digital only. Few home visits or advisor has no time to do home audit. Lack of consumer protection.
- **Supply chain:** lack of installers and tech support
- **Policy and regulatory barriers:** contradictions and lack of clarity.
 - Lack of adequate funding nor long-term funding
 - Lack of MEES enforcement; changing timescales for EPC band improvements in PRS
 - Definitions and interpretation of retrofit and net zero varies across actors.

- **Personal:** Aversion to taking financial risk; stress, health issues, digital exclusion; lack of trust in the energy market and traders e.g. forced movement of HH onto PPM, finding trustworthy installer.

ii) Which (if any) of the challenges you've mentioned apply to non-fuel poor households as well as fuel poor households?

If Yes, there is an overlap of challenges with non-fuel poor households:

ii) a) What are the implications specifically for fuel poor households?

iii) Are any of the challenges you've described likely to persist or worsen in the next three years?

iv) Are there any other challenges, not mentioned previously that might emerge for these households in the near future?

v) What support will fuel poor households need to support them to transition to net zero?

Prompt: tailor to interviewee, no need to raise all. Probe for more details in interviewee areas of expertise. You can adapt these questions:

We found in research that [trusted intermediaries] are important in supporting fuel poor households in this transition. Who are the trusted intermediaries for fuel poor households, who could be included in energy efficiency support or delivery networks?

Can you think of any ways in which changes to [XXXX] could assist fuel poor households to access or get the most from scheme support?

- **Flexible finance:** for owners, tenants and landlords. Grants, subsidies, green loans, repayment plans.
- **Trusted intermediaries:** community engagement, inclusivity in energy decision-making (gender, inequalities).
- **Information and advice:** tailored targeted information and interventions; build on social connections, word of mouth.
- **Regulation and standards:** EPC and minimum efficiency standards for landlords.
- **Supply chain skills and support:** assessment, install and post install skills and support, especially for electric heating.

- **Clear and streamlined retrofit processes:** Single point of contact will help process, knowledge sharing and user experience. Phased retrofit. Customer journeys which account for different entry points. Local delivery partnerships.
- **Measure impacts:** quality and monitoring of installs; include co-benefit impacts for occupant and wider stakeholders.

vi) In what ways should the support for fuel poor households you've mentioned be different to that offered to other households?

b) i) Are there any particular groups of FP households that will need more support than others to the transition to net zero?

Prompt, personal characteristics:

- Age: (Older people aged 65+; Younger people - household all aged < 25)
- Health: Disability, long-term illness
- Ethnicity
- Communication: English not spoken
- Other: that we've missed?

Prompt: Household characteristics

- Tenure: (Private rental sector: houses with multiple occupancy; buildings of multiple flats. Social housing. Owner occupiers)
- Household composition: single parent families, young sole occupier
- Property type: flats, terraces
- Off-gas homes
- Rural: – worst performing homes, need higher investment, less connectivity (digital, transport, social), ageing population, more extreme weather, high carbon fuels.
- No smart meter: due to tenure, location, property type (or personal preference)

ii) In your view, which groups are most vulnerable, and why?

Multiple vulnerabilities: low savings, debt, high costs, high economic and social dependencies (caring; parenting; time-poor due to work demands)

iii) What are the biggest challenges facing these vulnerable groups of fuel poor households in the transition to net zero?

iv) What are the enabling factors that could specifically help these groups to benefit from energy efficiency and low carbon heating schemes?

c) Overall, which of the challenges you've mentioned, for all fuel poor households, do you think are the most significant?

Interviewer: Refer back to the key challenges jotted down / highlighted for Q1 a) i)

d) What could be done to overcome these challenges you've identified?

Prompt for all challenges, most important and less important ones.

Below are examples only, identified in research if prompt needed.

- Comprehensive, tailored approach mass retrofit programme
- Financial investment, covering upfront costs for improvements.

Thinking now about the role of government in this, the UK government has a fuel poverty target, which is to ensure that as many fuel poor homes as is reasonably practicable achieve a minimum energy efficiency rating of Band C, by 2030. The interim milestones are:

- as many fuel poor homes as is reasonably practicable to Band E by 2020
- as many fuel poor homes as is reasonably practicable to Band D by 2025

e) What action(s) do you think the government should take to support attainment of the 2030 fuel poverty target?

Interviewer note: Allow interviewee to respond then ask questions below.

- i) Are there any specific interventions or actions the government could take to support attainment of the 2030 fuel poverty target?
- ii) Is there a role for joined up working with other service providers? If so, what could this look like?
- iii) Is there a role for regional or local government partnerships in delivering energy efficiency and low carbon schemes? What could this look like?
- iv) Is there a role for area-based schemes? What might be the advantages or disadvantages of these?

RQ 2. The government energy efficiency and low carbon heating schemes intended to benefit fuel poor households *20 mins in total*

Moving on now to the second area of discussion, in the next few questions I want to ask about different aspects of the energy efficiency and low carbon heating schemes for fuel poor households. The energy efficiency schemes we are focusing on are:

- ECO - Energy Company Obligation, including ECO Flex
- HUGs – Home Upgrade Grant
- LADs - Green Homes Grant Local Authority Delivery scheme
- SHDF – Social Housing Decarbonisation Fund

- a) i) Are you familiar with any of these schemes?
 - ii) What is your experience in identifying fuel poor households to join energy efficiency schemes?
 - iii) What is your view on the eligibility criteria for the schemes targeting fuel poor households?

Note to interviewer. See Energy efficiency scheme eligibility document for reference. Share a brief outline with the interviewee if necessary – generally based on EPC rating of the property and other factors like household income, savings, health of occupants, tenure, property location, heating system type.

Prompt depending on interviewee:

- ECO4 is means-tested benefits only. Disability benefits (PIP / DLA) no longer included.
- Savings threshold - does this affect fuel poor households? (e.g. pensioners might be asset rich £ poor but have some savings with excludes them from schemes).
- ECO4 – is available to private rental sector for landlords or tenants (but poorly taken up).

- ECO4 has referral pathway for NHS staff. How well is this utilised?
- To what extent can households benefit from more than one scheme? If not possible, what challenges does that present? If it is possible, how could that be successfully incorporated into other schemes? E.g. some local authorities use Better Care Fund or Disability Facilities Grant to improve energy efficiency.

iv) Do any of the eligibility criteria facilitate the engagement of fuel poor households in schemes? What are they?

Examples if required:

- ECO4 - Inclusion of cold-related health condition in eligibility
- ECO Flex / LADs – local tailored delivery
- HUG - Off gas, range of electric heating options including heat pumps

b) i) How are households identified? Who identifies them?

Prompt:

- *Households self-refer, referral by organisation; health service referral.*
- *DESNZ and DWP: benefits data for WHD and to target ECO.*
- *ID from EPC data and data matching? Which data sets used? Access requirements?*
- *Dept Health and Social Care targets cold homes via Make Every Contact Count. No link into energy efficiency referrals or use of EPC data to target support to eligible households.*
- *Contact lists for ECO4 installers? Trusted trader access data from whom?*
- *Other*

ii) Are you aware of any novel and/or successful approaches used to identify FP households?

For example, Kent Energy Efficiency Partnership used health and ACORN wellbeing datasets to create maps to identify households. DNOs (Distribution Network Operators) have social vulnerability mapping which show fuel poverty and different household vulnerabilities at local authority or LSOA area level.

l) What are the barriers to identifying fuel poor households?

Prompt on challenges:

- Changing definitions – LILEE absolute condition of EPC band <C
- Time / staff resource
- Data access especially in health arena. Unclear Information Governance; clarity needed for health service to match patient data and EPC, for patient to benefit from energy efficiency support.
- Need for frequently updated datasets

- Lack of data or contact details for specific tenures (occupancy and ownership)
- Fluid nature of fuel poverty – households move in and out of it.
- No checks done by schemes on the conditions of those receiving support. Data is modelled to give estimate.

Question for energy suppliers: There is a 2020 Ofgem requirement that suppliers identify PPM customers that are self-disconnecting or self-rationing and offer short term support. Is this information linked to ECO4 delivery?

ii) What helps to identify that households are in fuel poverty?

Prompt on enablers:

- Possible role of local delivery partnerships and person-centred approach to effectively target vulnerable households?
- Wales has Rent Smart Wales, register of private landlords, partnership with NEST to target landlords to improve energy efficiency. Could similar scheme work in England (tied in with MEES)?

Note to Interviewer: This is study RQ2 E placed before D.

e) i) What barriers (other than scheme eligibility criteria) do fuel poor households experience in taking up scheme support?

Prompt:

- Insufficient scale of incentive?
- Long payback time
- Awareness: lack of trust in information; information not tailored or accessible; misinformation; doubt / lack of information on benefits of EE improvements
- Complicated schemes
- Personal / social factors e.g. digital exclusion, health, experiences of family or friends

ii) What helps fuel poor households to take up scheme support?

Prompt:

- Home visit / energy audit
- Clear plan of action
- Single point of contact; ongoing wrap around support.
- Informed installers

d) i) Why do fuel poor households drop out of schemes? Are there typical stages when dropping out occurs?

Prompt when relevant to interviewee:

- Sensitive to time taken for scheme administration
- Change in finances – can't afford energy efficiency improvement
- Installer issues / delays with installation
- Lack of clarity on retrofit process
- Inadequate support for ongoing engagement

ii) How do household vulnerabilities - based on personal and household characteristics - affect scheme drop out?

Prompt personal characteristics: Age, health, ethnicity, communication, other

Prompt household characteristics: property type, location, off-gas, tenure, household e.g. single parent families.

- Disabled people's needs not met re. notice for appointments; tailored implementation, non-digital advice, additional support (e.g. move furniture).
- Digital capability: fuel poor households less access to online services overall
- Older people might have savings > threshold, or disability benefits top threshold.
- Social prescribing / Warm Homes on Prescription increases people with cold-related health conditions to benefit from schemes.
- Rural: fewer workforce services.
- Property type: few flats or park homes

iii) What could be done to mitigate scheme drop outs?

Prompt if needed:

- Shorter waiting / lead in time
- Proactive service, smooth flow of information.
- Face to face advice
- Digital Assist

iii) To what extent is data recorded on whether fuel poor households achieve installation of an energy efficiency measure or low carbon heating, compared to non-fuel poor households?

Prompt: If this is not recorded, what stops that?

Additional information and close 5 mins

Those are all the questions I wanted to ask you about. Thank you so much for your time – it's been really informative. Is there anything else that you would like to mention?

Donation to fuel poverty charity

Interviewee: please note which organisation chosen in 'Interview tracker' document.

Just before we end, I wanted to check which of the three fuel poverty charities you wanted to us to make a £50 donation to on your behalf? This is a thank you for participating in this research. The three organisations we are making donations to are:

- National Energy Action
- The Trussell Trust (Energy Bills Support)
- Fuel Bank Foundation

Which organisation would you like us to make a donation to?

We'll let you know at the end of the research the amount collectively donated to these charities by all participants.

If the interviewee will be participating in a workshop

Thanks also for agreeing to participate in a workshop. The workshop will draw on what we've learnt from interviews to date to explore emerging themes, ideas and potential solutions. It will be a discussion with up to five other participants, facilitated by two researchers. We'll be in touch about the workshop shortly.

Thank you. Goodbye.

3. Workshop guide (Stakeholder)

Resources

Slide deck. Mentimeter link & code: Ranking of challenges. Jamboard links - customer Journeys. Jamboard - Role of central and local government, key actors.

Details - 1.5 hours with 5 minute break, in Zoom. 2 facilitators

Time	Session	Description	Facilitator notes
10 mins	Welcome	<p>Welcome:</p> <ul style="list-style-type: none"> • Background • Purpose of workshop; theme of workshop • Your consent to participate. • Housekeeping • Ground rules • Zoom chat function for questions/clarifications • Recording 	<p>Slide presentation</p> <ul style="list-style-type: none"> • Introduce organisation and project. • Use consent statement re. main points on slide. Ask people to raise hand so visible on screen if they are happy to participate. If not, private message in chat. • Session is being recorded. • Feel free to ask questions. • Everyone has a say • Will have break. • Zoom: videos on, mics off, raised hand function. Use of chat. • Use of Menti. You might want to open www.menti.com

Understanding the barriers and enablers to supporting fuel poor households achieve net zero

<p>10 Mins (20)</p>	<p>Introductions – introduce participants and topic of the household transition to Net Zero</p>	<ul style="list-style-type: none"> • Name, organization and role • Linkages, connections and interest with Fuel Poverty and/or Net Zero <p>Team presentation of the topic and learnings from the literature review. Invite comments and questions on findings</p>	<p>Slide presentation to present the topic.</p>
<p>10 mins (30)</p>	<p>Challenges and enablers, FP transition to net zero</p>	<p>Introduce main areas of challenges and list of challenges</p> <ul style="list-style-type: none"> • Group exercise: Ranking challenges <p>Group discussion around what are the key barriers they see on the screen.</p> <ul style="list-style-type: none"> • Do you think anything is missing as factors that would prevent fuel poor households to transition to net zero? • Are there additional challenges which specific FP HH groups face that we need to consider? <p>Group discussion exploring the enablers / opportunities for top ranked challenges.</p> <ul style="list-style-type: none"> • What would encourage fuel poor households to participate in the transition towards net zero? • What enabling interventions could help specific groups (e.g. lone parents)? 	<p>Spider diagram – main themes of challenges</p> <p>Mentimeter ranking for challenges exercise.</p> <p>Share top ranked challenges on screen</p>

5 mins (35)	Energy efficiency customer journey overview	<p>Presentation of the generic customer journey:</p> <p>Presentation of simple All tenures – for each stage top challenges and enablers</p> <ul style="list-style-type: none"> Gather initial feedback and discussion around stages and key challenges / enablers. 	<p>Presentation to stakeholders to frame the rest of the workshop discussions</p> <p>Jamboard All tenures</p>
10 mins (45)	Variations in challenges across households (tenure)	<p>Group exercise: Differences in challenges experienced across different household characteristics by tenure.</p> <p>Presentation simple [tenure jamboard] – for each stage top challenges and enablers</p> <p>Follow-on questions to facilitate discussion</p> <ul style="list-style-type: none"> How much do you think that [tenure] affects the ability for fuel poor households to transition to net zero? Who do you think needs to be involved in the process and when (for customer journey)? What is their role? 	<p>Jamboard – [specific tenure] or All tenures</p>
5 mins (50)	Break		

<p>15mins (65)</p>	<p>Role of national government, local government and other service providers and key actors</p>	<p>Share key functions / suggestions identified in the literature review for central government, regional / local government, other service providers (e.g. NHS), Not for profits, DNOs, installers, other businesses.</p> <ul style="list-style-type: none"> • Are there other key actors to include? <p>Group exercise – add further notes to the existing findings</p> <p>Discussion of comments</p> <ul style="list-style-type: none"> • What is the role of the state? Of regional / local government? Of the NHS and other service providers? DNOs. Not for profit sector. Installers / retrofit coord. • CHECK: Have we identified the enabling relationships / connections to optimise the transition to net zero? Which connections are high priority? • What connections between actors might be too strong / weak / or absent? 	<p>Jamboard post-it notes clustered for each actor.</p>
<p>15 mins (80)</p>	<p>Summary</p>	<p>Group deliberation as to prioritisation and key areas that will allow for a just and fair transition.</p> <p>Questions. Based on today's discussion:</p> <ul style="list-style-type: none"> • What do you think should be the main priorities? Who should be responsible for delivering them? • In the customer journey where could enabling interventions make the most difference? 	<p>Allow participants to discuss with each other around priorities and what should be done now and how these may change going forward.</p>

		<ul style="list-style-type: none"> • What barriers and enablers are likely to change in the near future e.g. 3 years? 	
5 mins (85)	Close	<ul style="list-style-type: none"> • Is there anything we haven't asked about that you think is really important? • Research next steps • Charity donation based on participation • Thanks, next steps. 	Finish with Zoom poll to gather details on donations to charity as a thank you for participation