

Energy and Disability:

Improving home retrofit
for Disabled people and
caregivers

September 2025

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Note on language

Through this document we use identity-first language ('Disabled people', 'Disabled person') to reflect the terminology used (at the time of writing) by the majority of the disability movement in the UK, where the research for this report was carried out. This language is informed by the Social Model of Disability, which is rooted in the disability rights movement. It makes a distinction between impairment (an embodied condition) and disability (societal barriers and discrimination). It recognises society as disabling and demonstrates that people with different impairments may face common problems e.g. lack of access to information and communication, environmental exclusion and discrimination in employment. It moves away from a position of locating shortcomings within a disabled individual and argues that impairment is and always will be present in society. It calls for disabling barriers to societal participation to be removed, and for systemic changes to the ways in which Disabled people are treated. In the UK, identity-first language is used to emphasise that people are primarily disabled by society and exclusionary environments, policies and norms, rather than by individual impairments. Whilst we use language informed by the Social Model of Disability, there are instances in this report where we may quote sources that are counter to this. An example of this is where some resources or frameworks may assume Disability is synonymous with vulnerability.

However, we also respect the preferences of many people worldwide for person-first language ('people/person(s) with disabilities'), which is used in the United Nations Convention on the Rights of Persons with Disabilities (UNCRPD). Reflecting a human rights model of disability, the UNCRPD seeks to progress disability policy and law in ways that align with key human rights principles.

It is important not to make assumptions about individual language or communication preferences. Even in a UK context, some people prefer to be called a 'person with disability/disabilities' and many people who would have every right to identify as a Disabled person may not think of themselves in this way. The key is taking the time to ask the individual and respect their preferences.

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Navigating this report

Chapter 1 (estimated reading time: 11 minutes): This chapter gives an introduction to the research, outlines the research aims, and details the adopted research methodologies.

Chapter 2 (estimated reading time 8.5 minutes): This chapter outlines the findings from the literature review and initial workshop with Disabled people and Disabled People's Organisations, in relation to the barriers that Disabled people may experience in the energy transition, and the associated potential solutions.

Chapter 3 (estimated reading time 26 minutes): This chapter outlines the findings from the research survey, interviews and consultation events, in relation to Disabled people and caregivers' experiences of energy advice and retrofit services.

Chapter 4 (estimated reading time 12 minutes): This chapter outlines the findings from the research interviews with energy advisors and retrofit professionals, in relation to current service and the extent to which it takes into account the needs of Disabled people. Nine professionals involved in managing or delivering retrofit or home improvements were interviewed.

Chapter 5 (estimated reading time 6 minutes): This chapter highlights useful practical resources for Disabled people, caregivers and retrofit professionals, including those produced through this research.

Chapter 6 (estimated reading time 12 minutes): This chapter provides conclusions and recommendations based on the research findings.

1. Introduction and methodology

Introduction

Reducing and decarbonising domestic energy use are essential to address the climate emergency and for the UK to reach net zero targets. All households need to participate in this energy transition. Effective energy advice and retrofit (home energy efficiency improvement) are key aspects of this transition. To be effective, these energy services need to be accessible to everybody and delivered in a way that meets the immediate and longer-term needs of residents. Disabled people particularly can benefit from home energy efficiency improvements which could yield significant health benefits and avoid fuel poverty.¹ Focusing on improving the energy efficiency of Disabled people's homes can yield multiple benefits. It can positively impact their physical and mental health, especially when related to heating improvements.² Disabled people cutting back on heating or use of assistive technology and equipment could have negative health impacts with costs to the NHS.

Yet, previous research on fuel poverty in the UK³ has shown that Disabled people face challenges in accessing tailored energy advice and appropriate extra support during retrofit installations. This research seeks to better understand the needs of Disabled people around energy services and to support practical action in improving services.

This report presents research findings on the needs of Disabled people and caregivers in relation to energy advice and home energy efficiency improvement services. Research was conducted between April 2024-June 2025. It was funded by the National Lottery's Climate Action Fund and delivered by the Centre for Sustainable Energy (CSE) as part of the Community Climate Action Project, coordinated by Bristol Climate & Nature Partnership (BCNP).

The aims of the research were:

- To initially identify the likely barriers, solutions and co-benefits of the energy transition for Disabled people in Bristol.
- To understand the experiences and needs of Disabled people and caregivers in obtaining energy advice and retrofit.

¹ Ivanova, D; Middlemiss, L (2021) Characterizing the energy use of Disabled people in the European Union towards inclusion in the energy transition. *Nature Energy*, VOL 6, pp. 1188–1197

² Department of Energy Security and Net Zero (2023) Energy Company Obligation (ECO) Evaluation Phases 2t and 3: Final evaluation report

³ Committee on Fuel Poverty (2024) Understanding the barriers and enabling factors that support fuel poor households in the transition to net zero. To be published on www.gov.uk/government/organisations/committee-on-fuel-poverty

- To learn from energy advisors and retrofit professionals about current service delivery and the extent to which it takes into account the needs of Disabled people.
- To make recommendations and produce practical resources that support Disabled people, caregivers, energy advisors and retrofit professionals to implement effective, appropriate, high-quality advice and retrofit.

Improving the retrofit process for Disabled people could result in reductions in energy use and carbon emissions, improved finances, better health and well-being. The benefits for energy service providers could include effectively reaching Disabled people, providing services that deliver tangible improvements to people's lives of high social value.

Research approach and methodology

The research used a co-design approach in two stages, an initial scoping phase followed by a research phase. A co-design approach was used to involve Disabled people and caregivers in prioritising the direction of the research and commenting on research findings as they emerged.

The scoping and literature review stage of the research took place April-July 2024, whilst the primary research (interviews with Disabled people, caregivers, energy advisors and retrofit professionals, and workshops with Disabled people, DPOs and retrofit professionals) took place October 2024-June 2025.

Methods - Scoping and literature review

Literature review

An initial literature review assessed existing research, based on the following research questions:

1. What are the barriers that Disabled people experience (or anticipate experiencing) in the energy transition?
2. What are current enablers or potential solutions that can address these barriers?
3. How do barriers and solutions vary for different types of impairment or health condition?
4. What co-benefits are Disabled people likely to experience in the energy transition? How do co-benefits vary for different Disabled people?

The literature review method and summary of findings by theme are summarised in Appendices 1 and 2. A summary of barriers and potential solutions for the two main topics of energy advice and retrofit was presented at the first stakeholder workshops. More limited information on secondary topics of Electric Vehicles and heat networks was also provided in the presentation.

First workshops and direction of research

The literature review summary formed the basis for the first stakeholder workshops with Disabled people and Disabled People's Organisations (DPOs), summarised in Table 1. Workshops were facilitated by two researchers from BCNP and CSE. Audio recordings of workshops were made with informed participant consent, to ensure that meeting notes were accurately recorded.

Table 1: Overview of participants in first workshops

Workshop	Details	Participants
DPOs	In person, 5 hours June 2024	Four DPOs representing Deaf communities, caregivers, older people, and those with neurodivergences. Presentations: Bristol Energy Network; Bristol City Leap.
Disabled People's Forum session	Online, 1.25 hours July 2024	Five Disabled people with a range of impairments (including long term health condition, neurodivergence, sight loss). Two people were wheelchair users.

Workshop participants identified energy advice and retrofit services as priorities for further in-depth research. There was also strong support to explore how to improve job opportunities for Disabled people. BCNP addressed this by developing this area of work across Bristol's Community Climate Action themes (e.g. transport, food, energy, housing).

A short initial findings report summarised the literature review and learning from workshops, aspects of which are included in this report.

Methods - Research

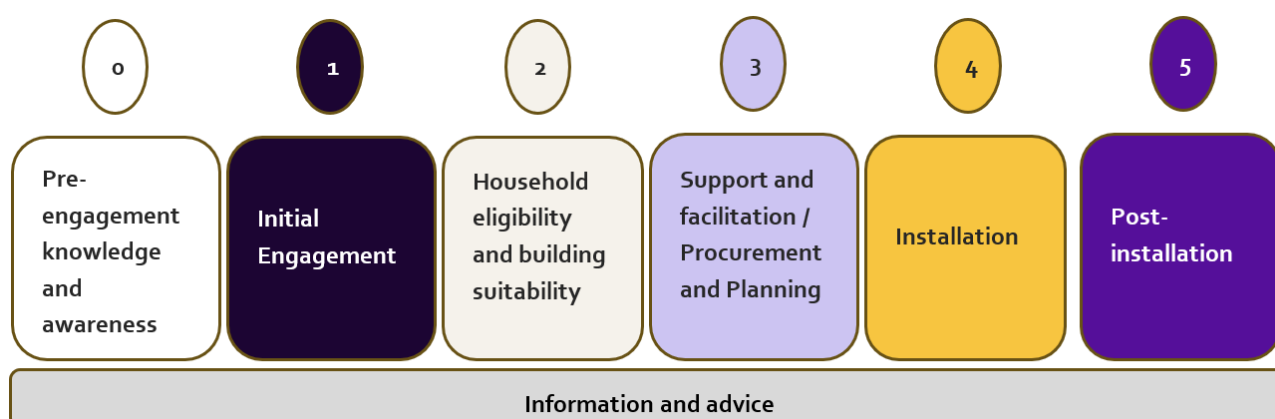
Disabled people and caregivers

Research was conducted with Disabled people and caregivers about their experiences of receiving energy advice and retrofit support. Someone was considered to be Disabled as defined in the Equality Act 2010 which sets out when someone is protected from disability discrimination.⁴

We wanted to engage with people at all stages of the 'retrofit customer journey' shown in Figure 1 – those who had found out about retrofit but not progressed with it, those in the process of having retrofit done and those who had completed retrofit improvements. This was to understand the challenges and enabling factors across all parts of the retrofit customer journey.

⁴ The Equalities Act 2010 says someone is disabled if both of these apply: (1) they have a 'physical or mental impairment', and (2) the impairment 'has a substantial and long-term adverse effect on their ability to carry out normal day-to-day activities'. This includes progressive conditions that can get worse over time (e.g. Parkinson's Disease, disfigurement, and conditions that are intermittent. <https://www.acas.org.uk/what-disability-means-by-law> For research purposes, we did not require participants to have a medical diagnosis of a disability, impairment or long term health condition.

Figure 1: Retrofit customer journey



Contact details were obtained from:

- Requests sent to DPO's seeking Disabled people or caregivers who had considered or had progressed with making retrofit improvements in the last three years.
- CSE's energy advice team, for people who had contacted CSE for energy advice or retrofit support during the period 01/03/2024-10/10/2024.

Survey

A survey was used first to gather broad information, for example on levels of satisfaction with energy advice, funding retrofit and retrofit at different stages in the retrofit process. The survey comprised of 25 questions including Likert-scale questions and open text responses.

People were contacted who said that they received a disability benefit or Caregivers Allowance. Full information about the research was provided beforehand including around privacy, security and confidentiality. In total 929 people were contacted: 925 were sent an online survey link by email; four people without emails were posted surveys. Of this group, 21 people had completed retrofit.

84 survey responses were received, which after data cleaning yielded 70 survey responses for analysis. 63 were complete responses; seven were partial ones. Survey respondent characteristics are summarised in Appendix 3.

Quantitative data analysis utilised a crosstab data export from the online survey provider supplemented with Excel data analysis. The number of responses to questions varied and is indicated for each question as (n=) in this report.

Interviews

Some survey respondents indicated that they would be willing to participate in an interview. Interviews were employed to gather richer detail of people's experiences. Interviewees were

selected based on the following criteria, aiming to achieve a breadth in personal and household characteristics.

- Whether they had not had retrofit, were planning it, were progressing with it or had completed it.
- Socio-demographic factors: age, gender, ethnicity, employment status and tenure.
- If they lived in urban or rural settings.

Disabled people and caregiver interviewee characteristics are summarised in Appendix 4.

Interviews were conducted virtually or by phone by one researcher with lived experience of disability. A topic guide was used to guide discussions with scope to follow up on interesting threads in the conversation if need be. Interviews were recorded with participant consent and notes made after the interview. Notes and transcripts were analysed thematically to identify challenges that interviewees had experienced at different stages of the retrofit customer journey.

Participants were offered incentives of entry into prize draw for a £50 shopping voucher for the survey, and a £20 shopping voucher for an interview.

Results from the survey and interviews were used to identify areas for further exploration with energy advisor and retrofit professionals. They were also shared with Disabled people in a presentation to elicit further comments. Feedback from Disabled people from the presentation and at a consultation event in April 2025⁵ was incorporated into the research results.

Energy advisors and retrofit professionals

Eight interviews with energy advisors, retrofit professionals and staff providing adaptation services for Disabled people were conducted online by one researcher with expertise in retrofit and energy advice. An interview topic guide was created and adapted depending on the role of the interviewee. Interviewees were recruited from CSE staff (5), a community advice and retrofit organisation, a regional retrofit provider and a home improvement agency. All organisations provide services in the Southwest of England or Wales. Significant attempts were made to engage with key Bristol retrofit service providers without success. The roles of those interviewed were diverse: Energy advisor (2 advisors in a joint interview); Advice project manager; Retrofit assessor; Retrofit coordinator; Senior retrofit development manager; Head of Retrofit; Head of Strategic Insight; Operations Lead.

Interview transcripts were analysed thematically in Excel, based on the interview questions and any emergent themes.

Second workshop

A draft research report, plus two checklists were produced based on the research:

⁵ Redcatch Community Gardens consultation on revision on Bristol's Community Climate Action Climate and Disability action plan.

- Checklist for Disabled people and caregivers – what to ask and bear in mind when considering home energy efficiency improvements.
- Checklist for retrofit professionals and energy advisors – what to ask when working with Disabled people and caregivers.

A short literature search was also performed to find any relevant academic research or reports not included in the initial literature review which could inform the research outputs.

A second stakeholder workshop brought together Disabled people, DPOs, a retrofit assessor and Home Improvement Agency to obtain feedback on the research findings and checklists. The event was in-person, with one participant joining online. Attendees are summarised in Table 2. Some workshop discussions were audio recorded (with participant consent) and notes taken to ensure that participants' comments were captured. The checklists and research findings were revised based on feedback received.

Table 2: Participants in second workshop

Workshop	Participants
DPOs	6 DPOs representing Deaf communities, caregivers, and people with neurodivergences, physical and mental health conditions.
Disabled People	5 Disabled people with a range of impairments (including long term health condition, neurodivergence, sight loss). Two people were wheelchair users.
Retrofit professionals	Retrofit assessor (CSE)

Limitations and challenges of the research, data collection and analysis.

- The research engaged with a small group of Disabled people and caregivers from the Southwest of England who had sought energy advice and retrofit support since March 2024.
- The survey was not posted to everyone that did not have an email address. It was posted to four people who had completed retrofit but not to 89 people who had not completed retrofit, due to cost and time implications. This was also because there was a small number of people that had completed retrofit and we wanted to engage with as many of them as possible. There was a larger number of people who had not completed retrofit. Relying on an online survey is likely to have influenced who responded. Some people may not have responded due to communication issues, lack of confidence in using the internet or infrequent use of email.
- Interviews with Disabled people and caregivers was carried out by one researcher with lived experience of disability. This could be advantageous for developing rapport and having an ability to empathise with the interviewee. It might also lead to unconscious bias by the interviewer picking up on recounted experiences that reinforced or differed from their own.

- A small number of retrofit professionals were interviewed from a total of four organisations, all of which delivered advice and retrofit services in the Southwest of England and Wales. This represents a restricted pool of expertise, compared to the regional or national number of retrofit organisations. Regional influences may also have affected the results.



2. Barriers and potential solutions that Disabled people may experience in the energy transition

The literature review and engagement with Disabled people and DPOs in the first workshops revealed key themes in relation to barriers and possible solutions that Disabled people may experience in the energy transition. These themes are summarised in full in Appendices 1 and 2. The key themes of: 1) health and high energy use, 2) energy information and advice, and 3) energy efficiency schemes, are discussed below to provide context to the research findings detailed in Chapters 3 and 4.

Health and high energy use

Health and high energy use are key overarching themes for this research, with poverty playing a critical role. Disabled people are twice as likely to experience poverty compared to non-disabled counterparts⁶ due to experiencing barriers to employment or, for caregivers, having fewer hours in which to earn income. Being on a low income increases the likelihood of a household being in fuel poverty.⁷

On health, a report for the Committee on Fuel Poverty⁸ found three groups of Disabled people with physical impairments are more likely to experience fuel poverty: (1) People medically dependent on electricity (MDE)⁹ (with high fuel costs); (2) other Disabled people (low income, high costs, possibly isolated with less support e.g. caregivers are not responsible for helping with energy issues); (3) the terminally ill.

Mental health problems and stress are significant barriers to engagement in the energy transition. Disabled people may experience a negative feedback loop if mental health problems block their ability to deal with issues or take up new opportunities which worsens their situation. For instance, someone unable to cope with the installation of a new heating system might experience negative health impacts due to living in a cold home.

⁶ <https://www.equallives.org.uk/post/fuel-poverty-is-a-disability-justice-issue>

⁷ In England fuel poverty is defined based on the energy efficiency rating of the home and household disposable after housing costs (the Low Income Low Energy Efficiency metric). Annual fuel poverty statistics in England 2025 (2024 data) (2025) Department of Energy Security and Net Zero.

⁸ London Economics (2023) Understanding the challenges faced by fuel poor households.

⁹ Medical dependence on electricity (MDE) may be for a number of reasons: wellbeing and hygiene; mobility; communication; food preparation; property (e.g. electric doors). Restricted access to energy could have significant impacts for these Disabled people.

Some Disabled people have high energy use, such as those who are medically dependent on electricity, need higher room temperatures for health reasons or a car for mobility-related issues. Low income and high energy need can make energy services unaffordable, exacerbating health conditions and impairments. It can also restrict Disabled consumers' ability to take up energy efficiency improvements and smart or low carbon technologies. Medical dependence on electricity limits a Disabled person's ability to take up time of use tariffs and flexibility services. These smart energy options offer financial rewards to people that can shift their electricity use out of peak time (4-8pm). Such options will become increasingly important in the energy transition, for example in conjunction with heat pumps or EVs.

Disabled people might suffer higher energy costs or negative health impacts if an inappropriate smart energy option was taken up. In a workshop, a Disabled person shared their experiences of having a heat pump fitted.

Lesley's heat pump retrofit

Lesley is a wheelchair user on a low income. In 2020 after moving home, she undertook major building works for access and decided to replace a very old gas boiler at the same time. She applied for a government Green Homes grant of £10,000 towards the cost of installing a heat pump. She was assured that the heat pump would at least break even with gas boiler costs and was likely to be cheaper to run. She wasn't informed that manufacturer calculations assumed that the heat pump would run constantly during autumn and winter.¹⁰

Lesley normally heated her home only when strictly necessary. She found that, in practice, the heat pump quadrupled her fuel bills in the first winter following installation. In the second winter, she turned the heating and hot water off completely and kept warm with hot water bottles. In the end, she borrowed money, removed the heat pump and had a new combi boiler fitted.

Lesley also had a poor experience with the installer who was TrustMark accredited and a member of several trade bodies (HIES, MCS). However, the installation was delayed, contractors didn't show up and there was lack of continuity with contractors. The quality of work was also questionable. Lesley raised these issues with the retrofit company but got nowhere, so approached the professional bodies for help. They required a technical diagnosis of the issues before they could investigate, which Lesley as a non-technician was unable to provide.

With hindsight she thought that the company was motivated by profits and operated via poorly managed sub-contracted freelancers. She reflected that many of the problems she'd experienced were the 'usual' problems customers face such as communication frustrations and waiting in for engineers. However, these problems have a magnified impact for Disabled people, who often have fewer resources (time, energy, executive function) to deal with issues.

This example highlights issues around inappropriate information and commissioning of a heat pump for a Disabled person, as well as difficulties with energy efficiency schemes.

¹⁰ This is an effective way to run a heat pump, if the water temperature is optimised to 45-55°C.



An installer fits a heat pump.

Energy information and advice

In the retrofit customer journey, initial information and advice is key at the start of the journey but ongoing advice and support is needed throughout. Retrofit is rarely a linear process.

Poor accessibility of information is a particular barrier that some Disabled people face in the energy transition, for example, inaccessible websites, information not available in appropriate formats or advisors speaking too quickly. Workshop participants cited the drive to go digital as an information barrier, as was the use of letters for some Disabled people. For instance, for Deaf people, British Sign Language is their first language so letters can be inaccessible to them. Communication support services for letters and forms were only available weekly, which for time-dependent responses may be inadequate.

Across different utility PSR services, communication challenges were exacerbated by lack of data sharing of PSR records (with consent) between utilities to identify Disabled people's communication needs.

Other barriers that might affect a broader group of consumers include 'information overload' (confusion from too much information given at one time, particularly relevant for people with a mental health condition, neurodivergence or learning disability) and use of technical jargon in advice. A workshop participant stated that if information is confusing or hard to understand, caregivers will be less likely to read it. They might give up on food and other essentials because they do not have the time to digest information, to research options or complete forms.

Lack of tailored information was a barrier in Lesley's heat pump example. This could also apply to someone with high heating needs. Disabled people can feel stigmatised and disengaged when information and advice is not personalised for them.

Conflicting advice from different professionals can also create difficulties for Disabled people or caregivers in knowing what energy efficiency measure to take up. Low awareness about energy efficiency and smart tariffs and lack of information on certified installers are further barriers.

Energy efficiency schemes

For government energy efficiency schemes like the Energy Company Obligation (ECO), the complexity of government financial support was a major barrier to uptake of retrofit found in the literature review. Not only that, but these schemes do not include disability benefits in their eligibility criteria. Neither are schemes proactively targeted at Disabled people. However, in workshops it was pointed out that Disabled people and caregivers may not self-identify as such. In addition, lack of trust in the Department of Work and Pensions (DWP) regarding data sharing with other bodies could also hamper targeting marketing about retrofit to Disabled people and caregivers.

Workshop participants described the prohibitive cost of retrofit, excessive information about financial support and the bureaucracy of form filling as further barriers. Getting financial support could also be complicated. One participant recalled that the cost of installing a new heating system was not fully covered by a government grant. Funding applications to agencies had to be presented in various ways to meet different funding criteria.

The needs of Disabled people are not taken into account during the commissioning and delivery of retrofit, as Lesley's example illustrates. Disabled people's needs could include giving notice for appointments, having face to face or non-digital advice, support with enabling works (like loft clearance), personalised commissioning (e.g. sizing of heat pump and radiators) and tailored implementation. The latter might include support for temporary relocation if extensive work is being carried out.

In workshops, Disabled people highlighted that unlike some non-disabled households, they are unable to do retrofit work themselves. Practical barriers around retrofit included the need to ensure good relationships with neighbours when work was done, and the tiring nature of having people in the home.

Disabled people and caregivers can also face additional challenges with disruption during installation and health and safety concerns (e.g. trip hazards). A workshop participant recounted disrespectful treatment of a wheelchair user during retrofit. An installer picked the person up to move them out of the way to get works done. Disruptions to the delivery of care could be a deterrent to caregivers taking up retrofit, if their needs were not considered at planning stages.

Low trust in installers was also a barrier. One workshop participant described how a contractor had installed loft insulation but failed to install cavity wall insulation. The contractor obtained the Disabled person's signature to claim for the wall insulation regardless. The company had ceased

trading. Another workshop participant described how an installer put his foot through her ceiling, for which she was unable to get recompense. Poor quality installation work was another concern.

Overall, it was suggested¹¹ that the additional needs of Disabled people are not taken into account in environmental policy and energy advice/retrofit practices. For instance, on EVs Disabled people need information on charging speed, charger protective lock and fuse protection as these are important considerations.

Informed by these key points from the literature review and first workshops, the next two sections present the research findings, firstly from a survey and interviews with Disabled people and caregivers, then secondly, from interviews with retrofit professionals.

¹¹ Ivanova, D; Middlemiss, L (2021) Characterizing the energy use of Disabled people in the European Union towards inclusion in the energy transition. *Nature Energy*, VOL 6, pp. 1188–1197

3. Disabled people and caregivers' experiences of energy advice and retrofit services

To understand the experiences and needs of Disabled people and caregivers in obtaining energy advice and retrofit, research findings are presented commencing with the survey results, followed by insights from interviews and consultation events.

The survey was structured to obtain information from three groups of people who had experienced different stages in the retrofit customer journey in 2022-2024: those who had not taken any action on retrofit, were in the process of retrofit and had completed retrofit. The aim was to understand barriers and possible solutions to retrofit at different stages in the retrofit process. The research findings are preceded by a short description about survey respondents.

Survey results

Survey respondents' characteristics

Appendix 3 summarises the personal and household characteristics of the Disabled people and caregivers that responded to the survey. For disability and health conditions, 70 respondents reported having 131 impairment or health conditions (respondents could select more than one impairment). Physical impairments and 'another disability' were the conditions most reported (20% each) (Figure 3). The only health conditions identified by research participants that were included under 'another disability' were Crohn's Disease and dementia. This category may have included long term health conditions that were not explicitly named like long Covid.

Figure 3: Survey respondent health conditions, as percentage of total conditions reported (131) (n=70)

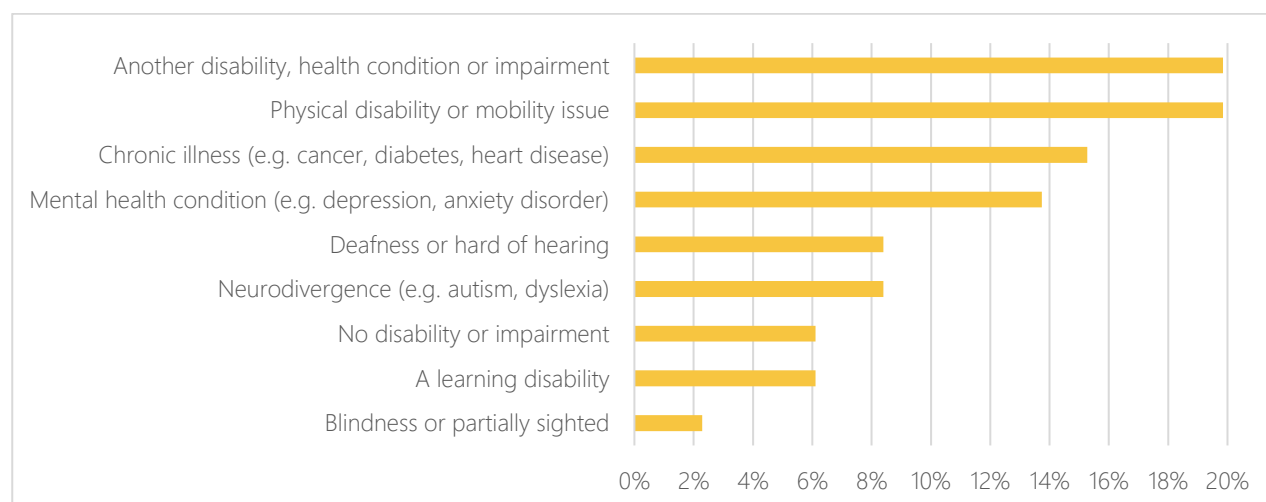
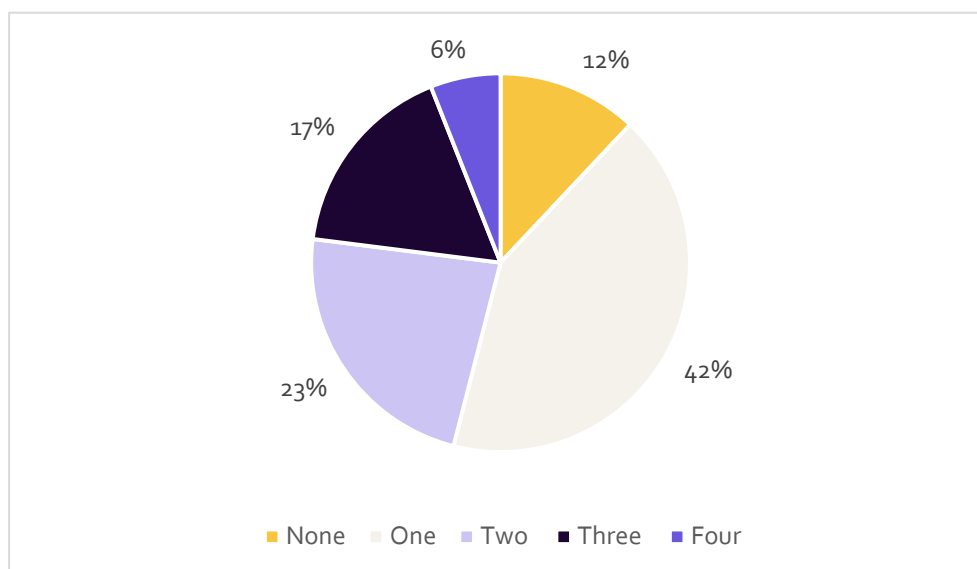


Figure 3 shows the number of impairments that each survey respondent said they had. The majority of respondents had one condition (29, 42%) whilst four respondents (6%) had four conditions. Eight respondents (12%) were caregivers who did not have a health condition.

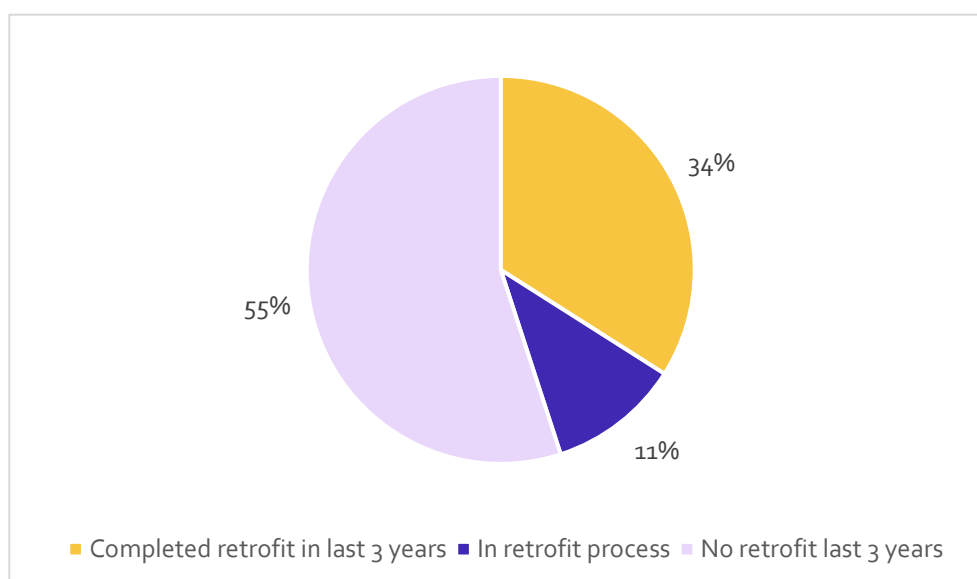
Figure 4: Number of impairments or health conditions per person, percentage of survey respondents (n=70)



Retrofit activity in the last three years

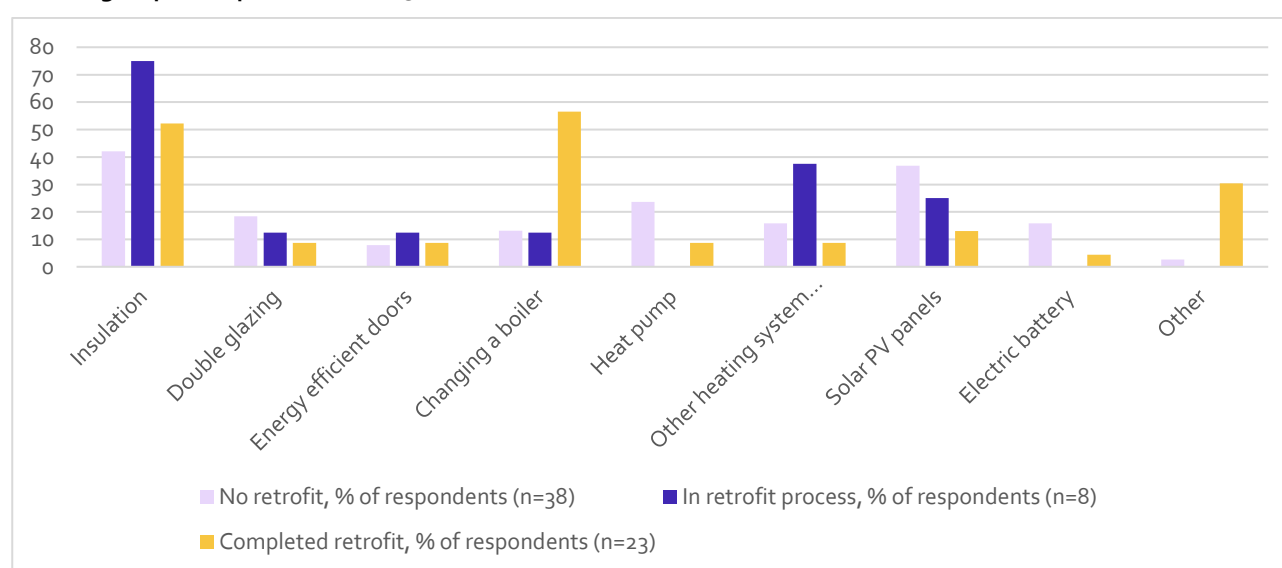
About a third of survey respondents (24, 34%) had completed retrofit in the last three years (2022-2024) whilst more than half had not had any retrofit in that period (38, 55%). Eight respondents (11%) were in the process of having retrofit completed (Figure 5).

Figure 5: Retrofit activity in the last three years (2022-2024), percentage of survey respondents (n=70)



The home energy efficiency improvements that respondents were interested in or had already installed (Figure 6) shows that insulation and solar panels were of most interest to those who had not undertaken any retrofit. Respondents were in the process of having mainly insulation and heating systems installed. Those who had completed retrofit had changed a boiler (57%, 13 respondents) and installed insulation (52%, 12 respondents). There were low numbers of planned or completed installations for double glazing, energy efficient doors, solar panels, heat pumps, and electric batteries. This suggests that whilst Disabled people and caregivers want to install measures like heat pumps, solar panels and battery storage, changing boilers and insulation are undertaken out of need and availability of finance.

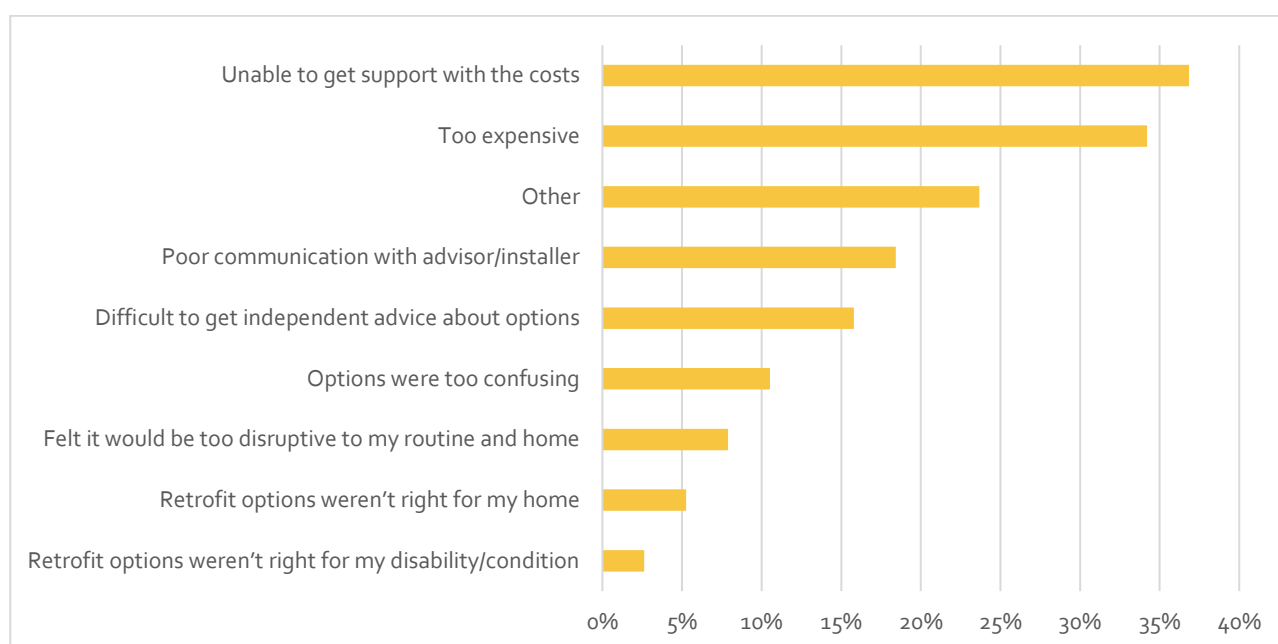
Figure 6: Retrofit measures of interest or installed by survey respondents in the last three years (2022-2024), % of each group of respondents (n=69)



Experiences of those who had not had retrofit

For 38 (55%) of survey respondents who had not taken action on making home energy efficiency improvements in 2022-2024, slightly less than half (18, 47%) indicated that they planned to get their home retrofitted in the next year. The barriers that had stopped respondents going ahead with retrofit are shown in Figure 7. Respondents could select more than one response. Lack of finances was reported as the main reason for not having retrofit. 37% of respondents (14) said that they could not get help with costs and 34% (13) said retrofit was too expensive. The other barriers indicated for not going ahead with retrofit included waiting to hearing from the company again or for information about a grant (4 respondents), the EPC being too low, a leaseholder not being given permission by the management company, and a private tenant who did not know that they could action retrofit (with their landlord's permission). The latter indicates a lack of awareness of grant eligibility. The private tenant also considered retrofit to be their landlord's responsibility.

Figure 7: Barriers to respondents going ahead with retrofit, percentage of respondents (n=38)

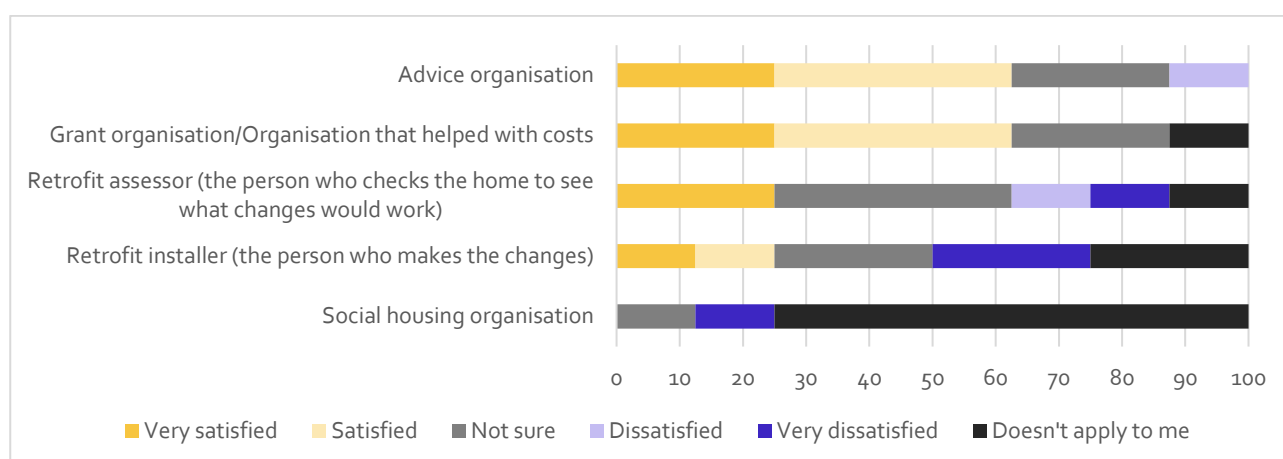


Experiences of those in the process of making retrofit improvements

Of the eight survey respondents in the process of making retrofit improvements, two were in the early stages of obtaining information and advice, one was applying for costs, four were planning the installation and one had progressed to the installation stage. Respondents were considering installing mainly insulation (6 respondents), heating system improvements (not boiler or heat pump related; 3 respondents) and solar panel installations (2 respondents).

When asked how satisfied they were with their retrofit experience to date, half of respondents (4) were very satisfied or satisfied, one was unsure, three were dissatisfied or very dissatisfied. Levels of satisfaction with different energy advice and retrofit professionals communicated with was also explored, to ascertain any communication barriers at stages in the retrofit process (Figure 8). This group of respondents were most satisfied with advice and grant organisations and least satisfied with installers. Challenges that respondents reported included being unable to contact organisations and the time it took to get work done. One respondent commented "we couldn't contact the installer so had another quote for £4200. We had to fund £1200 towards the cost of boiler ourselves."

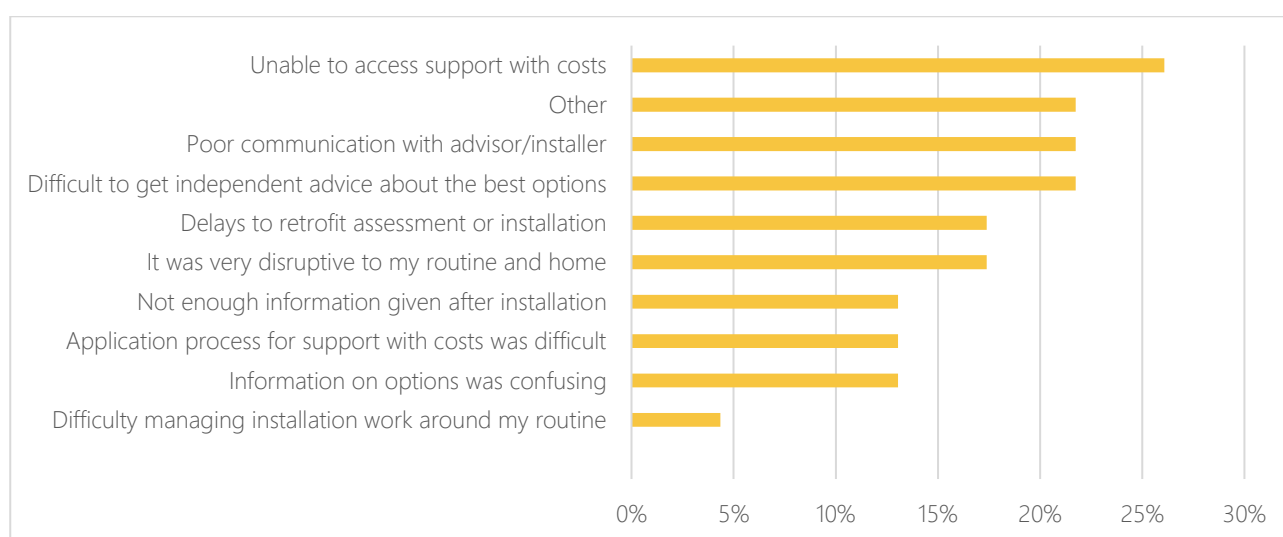
Figure 8: Level of satisfaction with people or organisations communicated with, % of respondents with retrofit in progress (n=8)



Views of respondents who'd completed retrofit

Twenty-three respondents (34%) had completed retrofit in 2022-2024, mainly having boiler upgrades and insulation installed (previously shown in Figure 6). Some respondents reported under 'Other' making roof repairs and conservatory roof insulation rather than standard retrofit improvements. More than half (61%, 14) of this group had experienced barriers that made their retrofit installation more difficult. Figure 9 shows the reported reasons for this.

Figure 9: Barriers experienced by those that completed retrofit in 2022-2024, % of survey respondents (n=23)

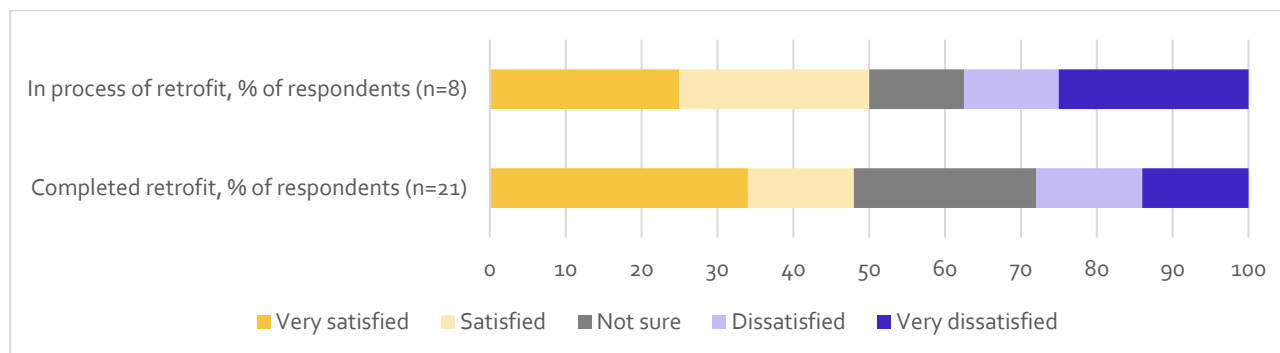


One respondent commented on the difficulties Disabled people without digital skills or devices might face with retrofit: "All professionals involved were amazing but the processes for them and the beneficiary are challenging. Anyone without a good handle on Android, sharing photos, uploading / downloading documents, provided e signatures, WOULD NEED HELP".

When asked how satisfied they were with their retrofit experience to date, almost half of respondents (10) were very satisfied or satisfied, five were unsure, six were dissatisfied or very dissatisfied. Figure 10 compares levels of satisfaction for respondents both in the process of having retrofit and those that completed retrofit, as a percentage of each group. It suggests that

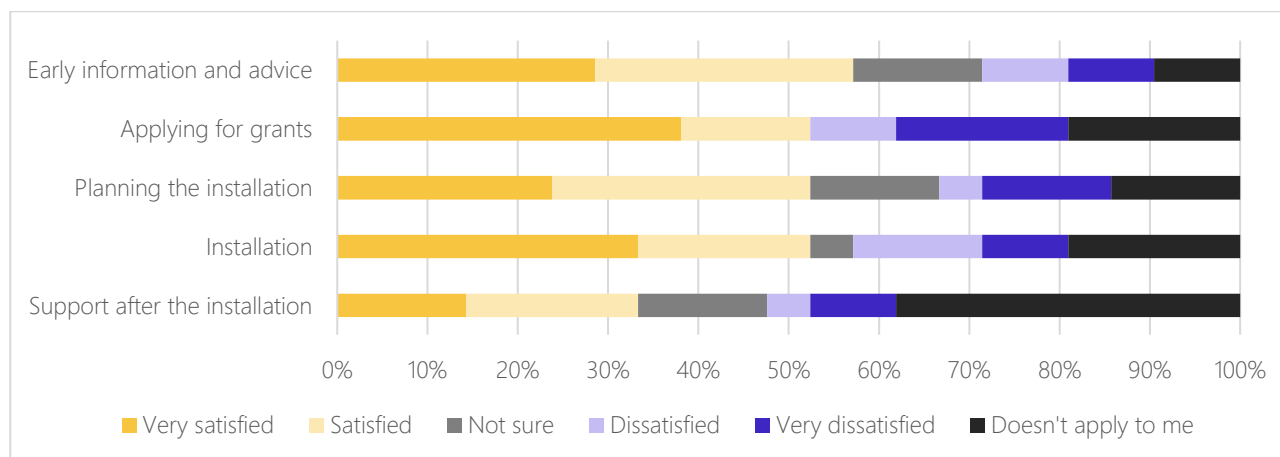
as retrofit progressed, respondents' dissatisfaction decreased and neutrality about the retrofit process (Not sure) correspondingly increased, with little change in positive satisfaction levels.

Figure 10: Level of satisfaction with retrofit experience to date, respondents both in process of having retrofit and that completed retrofit, % of each group. (n=8 and n=21)



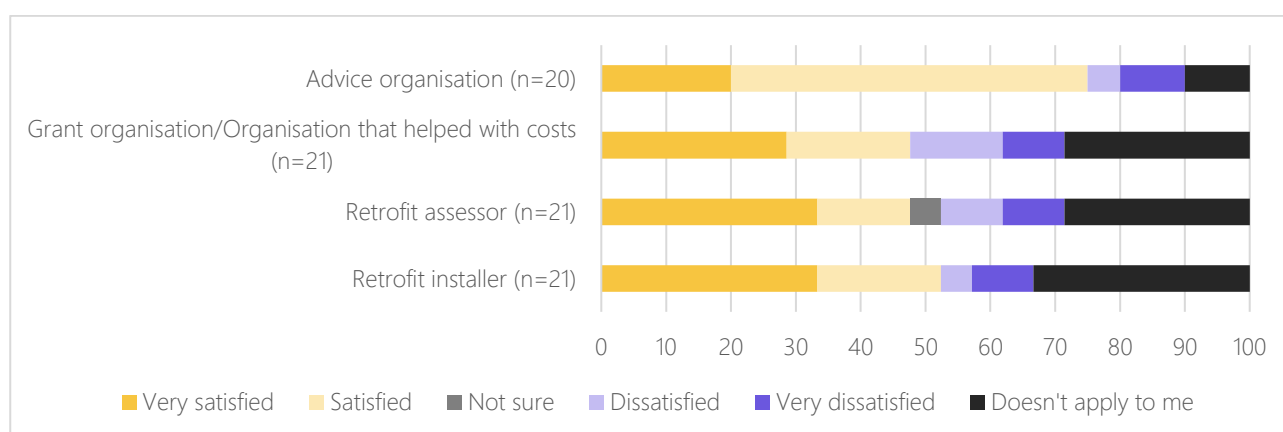
Respondents who had completed retrofit indicated how satisfied they were with different stages of the retrofit process (Figure 11). Positive levels of satisfaction (very satisfied or satisfied) only varied significantly (decreased) for support after installation (33%, 7 respondents). Most dissatisfaction was reported for retrofit stages of applying for grants (29%, 6 respondents), installation (24%, 5 respondents) and planning the installation (19%, 4 respondents).

Figure 11: Satisfaction with each stage of retrofit, percentage of survey respondents that completed retrofit in 2022-2024 (n=21)



When asked how satisfied they were with communication with different energy advice and retrofit professionals, those that completed retrofit were most satisfied with advice organisations and most dissatisfied with grant organisations. Levels of dissatisfaction ranged from 15-24% with all organisations. (Figure 12).

Figure 12: Level of satisfaction with people or organisations communicated with, % of respondents that completed retrofit (n=20 or 21)



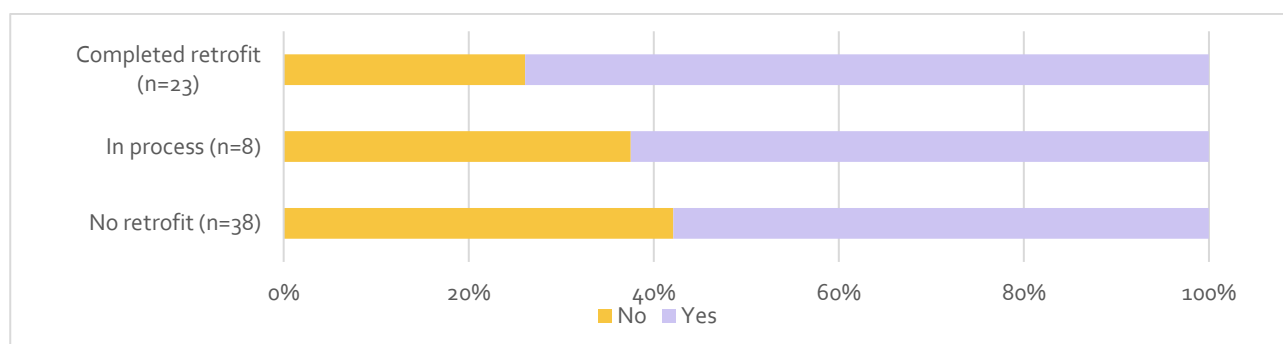
Respondent comments indicated the causes of dissatisfaction, which included information changing about eligibility, appointments not being made and lack of communication during the retrofit process. "Slow target date would change without consultation. The people involved had little understanding of the impact the work has on a disabled household".

Other respondents commented on positive retrofit experiences, with work carried out to a high standard by professional tradespeople with the minimum of disruption. One very satisfied respondent noted that their home was easier to keep warm and energy bill costs had reduced.

Support with retrofit costs

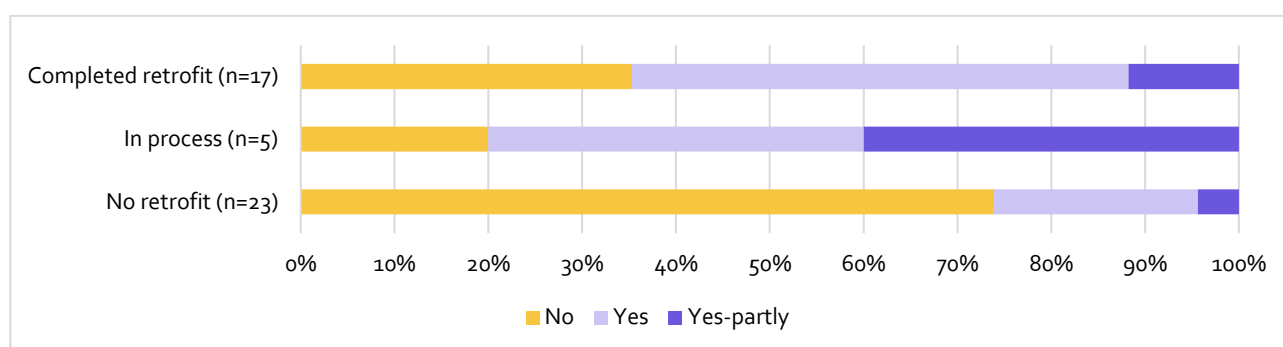
Financial considerations were a key aspect in deciding whether to progress with retrofit. All survey respondents were asked if they had applied for a government or other grant to pay for retrofit; 64% (46 respondents) had applied for a grant. Nearly three quarters of those who had completed retrofit had applied for grants (Figure 13).

Figure 13: Percentage of each respondent group that applied for a retrofit grant (n=69)



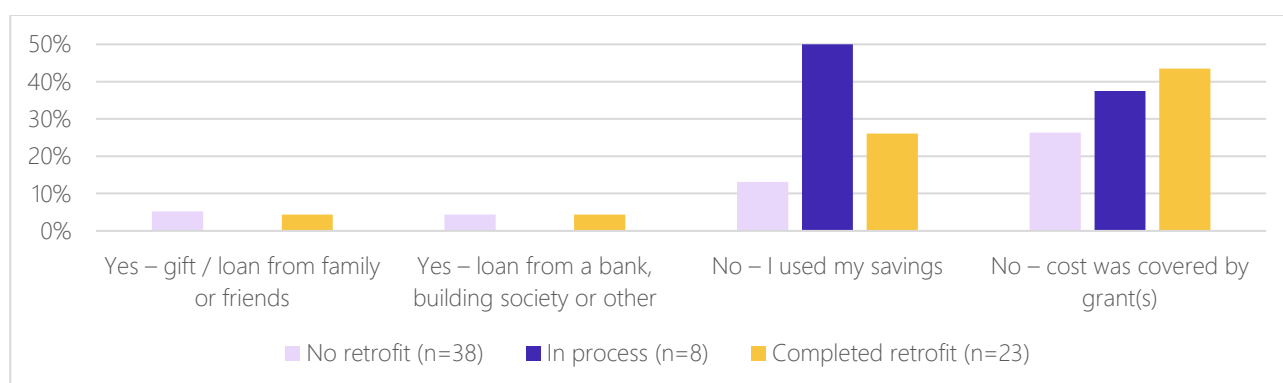
For those that applied for grants, 36% (16 respondents) got a grant, 11% (5) received a partial grant and 53% (24) did not receive a grant. Figure shows that 65% of those that completed retrofit and 80% of those progressing with retrofit obtained full or partial grants.

Figure 14: Percentage of each respondent group obtaining retrofit grant (n=45)



Respondents were asked if they had sought financial support for retrofit from other sources besides a government grant. Respondents could select more than one option (Figure 15). Figures 14 and 15 suggest that respondents that got a partial grant used personal savings to progress retrofit.

Figure 15: Did you seek other financial support for retrofit? Percentage of respondent group (n=69)



Summary of survey findings

- Insulation and solar panels were of most interest to all three groups – Disabled people and caregivers that had completed retrofit in 2022-2024, those in the process of having retrofit and those who had not had retrofit. Insulation and heating system upgrades were the predominant energy efficient measures being installed by those who had completed or were in the process of retrofit. This suggests that need and grant availability supported installing these improvements.
- Disabled people and caregivers want to install other heating systems (like heat pumps), solar panels and battery storage (high interest in the No retrofit and the in process of having retrofit group) but face challenges to do so, such as lack of financial support, lack of permission (leaseholders) or age discrimination for solar panels.
- Disabled people and caregivers were able to make retrofit improvements if they received a grant or had access to other finances like personal savings.
- Problems with accessible communication and digital exclusion compounded ongoing issues around continuity of contact with retrofit professionals, particularly installers.

- For those in the process of retrofit or that had completed retrofit, most dissatisfaction was reported for retrofit stages of applying for grants, planning the installation and installation.



Fitting a solar PV array to the roof of a home.

Insights into the challenges experienced by Disabled people and caregivers in retrofit

From the survey, interviews with nine people who completed the survey, and feedback from two consultation events, themes emerged around the challenges that Disabled people and caregivers experienced in energy advice and retrofit.

Interviewee characteristics

Appendix 4 summarises interview participants characteristics. The nine people and caregivers interviewed reported belonging to the following groups: Deafness (2); blindness (2); mental health (2); long term health condition (3); physical impairment (2); another disability (1); neurodivergent (1). Four participants had one condition, two had two conditions and one person had three conditions. Two people were non-Disabled caregivers.

Concerns around safety, trust and vulnerability

1. Searching for trustworthy providers

At the initial information and advice stage, many interview participants expressed concern about the legitimacy and trustworthiness of the retrofit providers that they were discovering through internet searches. Some participants were worried that what appeared to be retrofit providers were actually scammers or data harvesters. One interviewee described concern over the legitimacy of a company when she started receiving phone calls that were coming from a mobile number. She only felt safe to pursue retrofit when she made contact with a Bristol-based company that had a “legitimate” website and local landline number.

Other participants perceived that legitimate companies were engaging in unethical business practices, such as attempting to sell unnecessary or unsuitable products or services to Disabled consumers and caregivers. There was a predominant sense that many retrofit providers were primarily interested in making money rather than “genuinely trying to help” people. While such practices may be widespread and affect the general population, one person interviewed expressed concern about the potential vulnerability of Disabled people to exploitation by unscrupulous retrofit companies.

There was general agreement among interviewees who raised these concerns that there is an enormous amount of information online about retrofit which can be “almost impossible” to navigate through. One neurodivergent participant stressed the importance of signposting in helping consumers to reach the “right people” but also felt that there was an element of luck in arriving at a reputable provider.

2. Safety in the home

Trust was also a key factor for participants to be able to engage comfortably in home visits. A visually impaired interviewee recounted an incident in which a surveyor had come to her home to do a survey but then left without telling her. Concerned that the man may not have been whom he said he was, she telephoned his company to verify the surveyor’s identity. The participant felt that she had been put in a “vulnerable situation” and was worried that she may unintentionally have let a complete stranger into her home. Being visually impaired can make it more difficult to ascertain someone’s identity; items such as name badges can be difficult or impossible to read, logos may not be visible clearly, and facial recognition may also be impaired. This participant described how such encounters can erode the trust that Disabled people have in retrofit professionals.

Another participant expressed concern about whether his wife, who has dementia, would be able to cope with the presence of strangers in their home should they go ahead with further retrofit in the future. He worried that she might forget why surveyors or installers are in her home and become distressed. Under such circumstances, it is clear that communication about the retrofit professionals’ whereabouts would be key.

Inaccessible information

1. Information overload

Throughout the retrofit journey, from initially finding out about the options available through to learning how to operate their new technologies, participants complained about the volume and complexity of information that they had to deal with. In particular, neurodivergent participants and those with mental health conditions reported feeling anxious, confused and overwhelmed. This information could be “too much” for a Disabled person to deal with, one participant commented.

A participant with a brain injury and mental health condition, for example, said that he found the information he had received following initial advice confusing because so many abbreviations were used and there were so many organisations involved. He questioned the relevance of some of this information, suggesting that maybe it was not necessary to provide a full list of all available retrofit providers at an early stage of his enquiries.

A survey respondent also said that they found the term ‘retrofit’ confusing. At a consultation event, a Disabled person was unsure where to get advice on energy efficiency improvements.

2. Lack of written communication

A common complaint among those interviewed was that most of the information they received throughout their retrofit journey was delivered verbally rather than in writing. All participants who commented on this issue agreed that receiving written information, either in the form of an email or letter, would have made the retrofit process easier.

Relating to the issue of information overload outlined above, participants said that they would have valued a brochure, a letter “in plain English” or an “Easy Read booklet”. At the initial information and advice stage, such written communication would have served to outline their options. Further along the journey, these simple texts could have helped to demystify the process of applying for funding and helped participants to understand the steps involved in getting retrofit.

Following a survey of her home, one participant found it strange that she did not then receive anything in writing about next steps. While another participant who was at the stage of planning his retrofit installation felt that he was made to look “a bit stupid” by not having anything on paper to give to his landlord, with whom he had been liaising about potentially splitting the costs. There was also a perception that getting something in writing added to the legitimacy of a company.

Written follow-up was deemed particularly important by those who were hard of hearing. One such participant noted that it can be easy to mishear what someone has said and to miss important bits of information, so written confirmation can clarify what advice has been given and what work has been agreed to.

3. Inaccessible text and screen formats

Whereas one visually impaired participant was satisfied with letters he had received in large print, another complained that information about her new battery was only sent to her in small print and expressed frustration at not being offered a large-print option. This participant also had to request paper copies of paperwork dealing with the payment and sign-off following her retrofit,

as she noted that it can be difficult to know if you have saved documents electronically when you have a visual impairment. The need for large print letters about grant applications was also mentioned by a survey respondent.

An interviewee who experienced problems reading the small text on a new boiler thermostat suggested that there should be wider availability of retrofit technologies that can “speak” to users with vision loss.

This same participant also experienced great difficulty with using her new solar PV panels due to the technology she was provided with being unsuitable for someone with a visual impairment. For example, during the installation, she was asked to install a solar PV app on her tablet. However, the app was almost impossible to use due to its small font size, bad colour combination and screen that cannot be spread.

“When fitted we had problems with the app, not able to read small print as a severely sighted person. I cannot get 100% use from the app. I contacted the installer and the supplier of panels and battery who promised a call back to talk through my concerns - still waiting. Also had problems with a Wi fi reset after changing supplier, very stressful. Took three attempts to get it reconnected”.

This participant can only access the app inside her home as she has to use a non-portable magnifying device to read the screen. However, the magnifier does not completely solve the issue, as the light it shines changes the colours on the screen and makes it difficult to read.

4. Inaccessible delivery of verbal information

A final point on inaccessible information relates to the accessible delivery of verbal information, either over the phone or during in-person appointments. Participants who were hard of hearing noted the importance of speaking slowly and clearly, and of being patient if asked to repeat what had just been said. One participant also advised that retrofit professionals should stand facing a client with hearing loss during in-person visits to enable them to lip read if needs be. In a consultation event, a Disabled person stated that British Sign Language interpretation should be provided if needed during surveys and appointments. They thought it would be advantageous to have training in deaf awareness available to retrofit professionals.

Similarly, a neurodivergent participant highlighted the need for advisors and retrofit professionals to be aware of the anxiety that can be caused to neurodivergent people when explaining highly technical information to them “too fast”. In these situations, there is a need to “slow down” and ensure that the information is being received and processed in a way that does not result in confusion or distress.

Eligibility for grants and schemes

In the survey, a range of views were expressed about grants and eligibility for them by survey respondents. Two people with COPD found obtaining grants straightforward. Others found grant eligibility frustrating. “I responded to an advert for free solar panels and cavity wall insulation. I then received a phone call where I was questioned on my eligibility. When I said that I was 82 and my wife was 74, I received a quick, blunt reply that I was too old”.

Age is not included in the eligibility criteria for obtaining a retrofit grant. Companies may consider whether someone will recoup any investment they make in solar panels during their lifetime. However, this curtails householder choices and ignores the benefits of reduced carbon emissions.

One respondent took a broad view on grant eligibility: "My views on grants are that they are subject to biased opinions and commercial factors that have nothing to do with eligibility".

Issues with retrofit scheme design were also raised. Sometimes, particularly with electric heating, retrofit does not make the difference needed in the EPC banding (improvement by two bands e.g. a D to a B band) to be delivered under a scheme. A survey respondent commented: "I've applied to three companies to upgrade heating in my home replacing old plug-in electric heaters. The first two simply disappeared and the third said they couldn't do the work as it wouldn't bring my EPC up to a B".

Others commented that schemes restricted the energy efficiency measures that could be installed, for instance only certain combinations of measures were available or specific types of boiler could be upgraded.

Managing disruption during installation

1. Preparing for disruption during installation

Interviewees understood that retrofit is unavoidably disruptive. However, problems reportedly arose because of a mismatch between expectations and the reality of retrofit installation. This appeared to be a result of inadequate communication from retrofit providers. Several participants noted the importance of having timescales, and details of what the work entails, clearly communicated in advance. This would help Disabled people to plan whether or not to be in the house during installation.

A neurodivergent participant who had her small home extensively retrofitted with solar PV panels, a heat pump, internal wall insulation and a new central heating system described the installation as "gruelling" and a "nightmare". She had not been sufficiently warned of how disruptive the installation would be and had therefore not vacated the property. However, it quickly became apparent that it was impossible to be in the house while the work was being done. She ended up leaving the house every day, washing at a local leisure centre, storing clothes in her car, and having to sleep on a friend's sofa for several nights. She said that it was important for installers not to provide false reassurance that they could work around residents in their home. Related to this issue, a Disabled person at a consultation event suggested that when disruption to the home could be difficult, respite care or temporary accommodation should be available and booked. This might require a visit to the accommodation or fly-through images of it.

Another disruption mentioned by interviewees was not being forewarned that homes often need to be redecorated following retrofit. Despite the retrofit company claiming that they would "put everything back the way it was", one participant's internal wall insulation meant that she had to do a lot of repainting afterwards. This created further disruption in her home and meant that she was still having to do "project management" even when the installation was officially finished.

2. Disruption caused by unexpected changes

Even in cases where an installation plan had been sufficiently communicated in advance, problems could still arise due to unexpected changes to the plan during the installation period. Work was sometimes delayed due to installers not arriving on the arranged date or turning up without the appropriate equipment. The latter indicates potential communication failures between those booking the installations, who would have been liaising with the Disabled people and caregivers about their circumstances, and those carrying out the installations. Delays in the completion of retrofit would be frustrating for anyone but can be especially disruptive for Disabled people.

Installers arriving unannounced could also be disruptive. For example, the parent and caregiver of a young autistic child described how his son struggles with noise hypersensitivity. During the retrofit installation, this interviewee often had to take his son out of the house to avoid the noise of machines. The unexpected arrival of installers meant that he did not have the chance to plan for his son's needs.

At a consultation event a Disabled person highlighted the importance of communicating appointments in advance. For her, just trying to get a water meter installed was a challenge if the contractor dropped in unannounced as this didn't fit with her needs due to a pain condition.

Other unexpected changes that resulted in disruption included installers making changes to essential systems or parts of the house. A participant with a long-term health condition and physical impairment whose wife is also Disabled, reported that at one point insulation installers unexpectedly told them as they were leaving that they had switched off the downstairs electricity and water for the whole house and would not be able to reinstate them until the next day. This was disruptive and "unpleasant" for the couple. Had he been warned that this was going to happen, the participant would have had time to make alternative arrangements. In his words: "If I'm told about it, I can plan for it. I won't like it, but I can plan for it."

3. The need to clarify disabled clients' needs

The experience described above was particularly frustrating for the interviewee as he had made it clear to the retrofit company that they were going to be dealing with two Disabled people and that they needed to take this into consideration. Despite this, some installers seemed unaware of the couple's needs. The participant often felt that the service he received came down to the individuals involved – some of whom were more empathetic and understanding than others.

A visually impaired participant felt that retrofit companies could do more to learn about the impairments, access needs and individual situation of their customers. She suggested that they should ask all new customers, "Is there anything that you'd like us to understand about yourself?"

The retrofit process and need for perseverance

1. Barriers to retrofit

Participants described experiencing multiple obstacles that initially prevented them from retrofitting their homes. Some were told that their house was too small to retrofit, partial insulation of a house was not possible, a home visit was not possible due to their location, or they were not eligible for a government grant despite being Disabled. For those who did qualify for

funding, further barriers were sometimes encountered. A resident of a retirement village, for example, was denied permission to install solar PV panels by the property's management. For those who did not qualify for funding, self-funded retrofit was perceived as being unaffordable.

2. Funding application delays

The process of applying for funding was described by one caregiver as "absolutely awful". Multiple participants complained of having applied for government grants to cover the cost of their retrofit, but then not hearing back about their application, as was reflected in the survey findings. This was compounded by lack of communication by contractors, leaving interviewees unable to plan their retrofit due to the lack of confirmation and timescale.

3. Lack of follow-up after home visits

Another barrier emerged at the time of having home assessments and surveys. Several participants reported that there was a lack of follow-up after home visits; one even complained that he had paid for a survey for solid wall insulation, but the installer did not come back with a price for the installation. Again, this common issue required perseverance on the part of interviewees, who were forced to repeatedly chase up retrofit companies that didn't call back and follow up when promised. A survey respondent commented: "Trusting people to do their job properly and me not having to constantly chase people up as they did not follow up on things".

One interviewee with a brain injury and mental health condition said, "If you are disadvantaged and you are of low means and you are elderly and you're disabled, how are you meant to follow up these things?"

4. A lengthy process

Overall, the retrofit journey was described as difficult, stressful to navigate and lacking support at key stages. The retrofit and funding application process also took much longer than participants had originally anticipated. For one participant, it took a year from initially being contacted about her possible eligibility for government-funded retrofit schemes to having the first survey of her home done. She says that she "almost gave up" because everything was taking so long. For one survey respondent, it took 12 years to have a heat pump installed. "Voucher for heat pump in 2012 not completed installation until January 2024. The company didn't know what they were doing. It took over 30 visits and 25 months to eventually complete installation".

Participants described having to be tenacious and determined to get anywhere with the retrofit process. In the words of one neurodivergent participant, the process was "wearing" but she "just kept going".

Lack of post-installation support

Following installation, several participants experienced difficulties with understanding how to use their new technologies, such as heat pumps or solar PV panels, and could not understand the long, complicated user manuals they had been left with. Many also complained of a lack of proactive post-installation support, such as a phone call or in-person visit to check that all was going well with the new retrofit. This could include connectivity issues, for instance with solar PV and Wi-Fi which for some Disabled people are impossible to resolve on their own.

One interviewee with a long-term health condition and physical impairment was sceptical about the post-installation support offered by retrofit providers, reflecting a lack of trust which could block obtaining useful advice. They believed that this was simply an opportunity to sell more products and services such as extended warranties.

Suggestions for improvements

In the survey, interviews and consultation events Disabled people made suggestions for how to improve the energy advice and retrofit process. Those not already shared have been integrated into the recommendations in the Conclusion section, identified with ‘*’.

Summary

- Disabled people and caregivers were able to make retrofit improvements if they received a grant or had access to other finances like personal savings.
- Problems with accessible communication and digital exclusion compounded ongoing issues around continuity of contact with retrofit professionals, particularly installers.
- Inconsistent information was given about grant eligibility and the energy improvement measures that were available. Some retrofit measure decisions amounted to age discrimination (such as not providing solar panels to an older person).
- Retrofit was not commissioned or delivered in a way that accounted for the Disabled customer’s needs. A sentiment was expressed that retrofit professionals had little understanding of how retrofit impacted on a disabled household.
- Some technologies, apps and user manuals did not meet Disabled people’s needs. There was little or no post-installation support.
- Many Disabled people found undertaking retrofit to be a tiring, lengthy process. They didn’t know where to get independent advice or whether they could trust contractors.



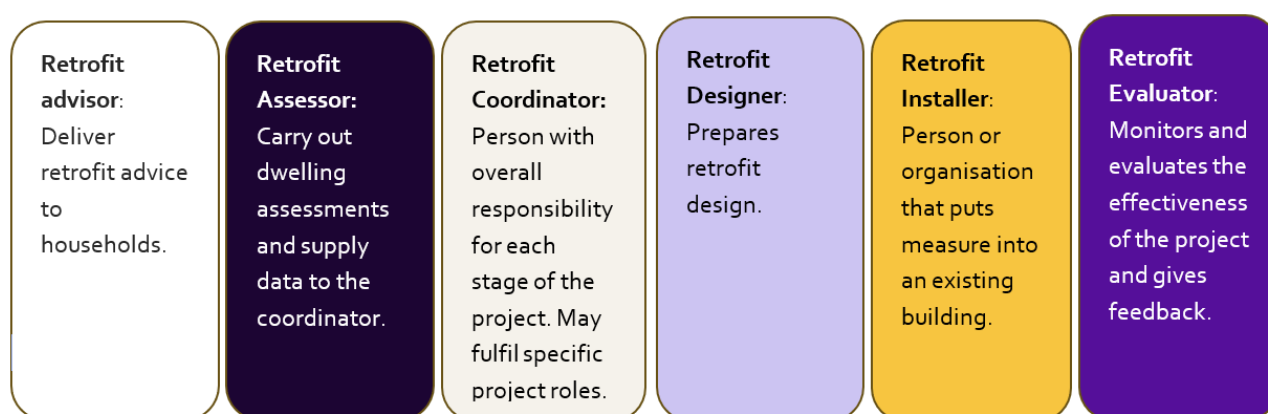
4. Retrofit professionals' and energy advisor practices with Disabled people and caregivers

To learn from energy advisors and retrofit professionals about current service delivery and the extent to which it takes into account the needs of Disabled people, nine professionals involved in managing or delivering retrofit or home improvements were interviewed. Their level of contact with Disabled people and caregivers varied. Five of the interviewees had regular contact by phone or in-person with householders. The remaining four interviewees had mainly indirect contact with households as they managed teams delivering projects, but some had worked closely with Disabled people in previous roles.

The interviewees were involved in a range of projects delivering energy efficiency improvements including local authority grant schemes such as the Home Upgrade Grant Scheme (HUG), national schemes such as the Energy Company Obligation (ECO), large scale home adaptations and retrofit support for householders who are self-funding.

Interviewee roles included the Retrofit Assessor and Coordinator roles of the PAS 2035 retrofit process framework (Figure 16), which was introduced in 2021 to address retrofit delivery issues.¹² PAS 2035 works in parallel with TrustMark, the quality mark for the sector, which has a code of conduct, customer charter and adopts PAS 2035 and PAS 2030 (2019) for installers as its code of practice. All government retrofit schemes use the PAS 2035 process.

Figure 16: PAS 2035 retrofit process roles



The interviewees were clear on the benefits of retrofit for Disabled people – primarily reduced energy bills and a more comfortable living environment with fewer fluctuations in temperature.

¹² <https://retrofitacademy.org/pas-2035/>

The challenges and barriers to retrofit as identified by the interviewees are set out below in terms of the retrofit customer journey for those accessing grant schemes. Current approaches to support and potential solutions to these barriers are discussed afterwards.

Pre-engagement knowledge and awareness

Many householders, including Disabled people, may be unfamiliar with the low carbon technologies available through retrofit schemes. Air source heat pumps were mentioned by a number of interviewees as problematic as householders are not sure how they work, how efficient they are and how much they cost to run.

This lack of awareness is compounded by a shortfall in accessible, impartial advice on energy efficiency measures and retrofit, as mentioned by multiple interviewees. Disabled people may struggle to find information and advice tailored to their circumstances as one interviewee noted:

“A lot of the generic advice that's out there that people would find online will be set up and based on certain parameters. So that generic information wouldn't have the detail and potential tailoring that someone with a disability would require”. (Interviewee 6, Head of Strategic Insight.)

Another interviewee reported that it is now easier to search for grants through the government website but this links to Local Authority schemes and not all local authorities have dedicated pages or websites for their grants. Online information is therefore inconsistent between areas.

Initial engagement

Disabled people may be eligible for grant schemes due to meeting the household income criteria, but in most cases, schemes are not targeted at Disabled people or promoted to them. Where promotional letters and materials are posted to households, an interviewee noted that recipients may struggle to understand them or trust that the scheme is legitimate. As another interviewee observed, many Disabled people have negative experiences with local authorities which may make them reluctant to take up grant schemes.

Household eligibility and building suitability

Retrofit professionals interviewed reiterated the views of Disabled people and caregivers, recognising that applying for grants and going through eligibility checks can be arduous and off-putting. A Retrofit Coordinator thought this was a significant stumbling block:

“[People] can often find that process really difficult, really challenging, really upsetting, difficult to engage with. If it's something that's optional, perhaps it's not always evident what the benefit would be for them. Well, why would they want to engage in yet another bureaucratic process where the benefits to them are not clear?” (Interviewee 2, Retrofit Coordinator.)

To qualify for many grant-funded schemes, both the household members and the property have to meet the eligibility criteria. Funding is not allocated on a basis of need. One interviewee (Head of Retrofit) described it as local authorities taking the “path of least resistance”. In his view, properties and householders who were deemed to be more complex would be skipped.

Therefore, the properties and households most in need of assistance could end up missing out on grant funding.

Procurement and planning

The interviewees who were familiar with the procurement and planning phase felt that it could be potentially problematic for Disabled people. Designing retrofit projects does not involve taking into account the needs of Disabled people and how they use their homes. One interviewee spoke to this. They received enquiries from people who didn't know how to operate their heat pump or were finding it much more expensive to run. Because retrofit planning doesn't take the householder's needs or lifestyle into account, they suggested that initial engagement should encourage people to consider a grant as 'if it were your own money' to avoid potential difficulties further down the line.

"I think too many people are just seduced at the thought of getting £40,000's worth of free home improvements which in the right home and the right technology - nothing wrong with that. And if it's done the right way... but not suitable for everyone". (Interviewee 9, community advice and retrofit organisation)

The interviewee shared an example of a widow in a large house who only heated a few rooms due to financial constraints who found the heat pump too expensive to run. The participant said this could result in people sitting in the cold or turning the heat pump off.

Two retrofit professionals interviewed commented on the energy efficiency measures and technologies that are installed, which are those that the contractors on the scheme are willing and able to install. For example, it might not be possible to install accessible heating controls if the contractor is not familiar with them or if it is not financially viable for the contractor to do so.

"Sometimes the actual installations haven't been installed with the householder in mind, because it's a bit of a tick boxing and revenue collection for the contractors". (Interviewee 9, community advice and retrofit organisation)

One interviewee noted that Retrofit Coordinators cannot recommend measures which are not strictly energy efficiency measures. Assistive technology that might help control a heating system, for example, could not be installed as part of retrofit.

Installation

The disruption of the installation process was mentioned as a significant challenge by the majority of interviewees. Having unknown people come into the home can be daunting and unsettling. Interruptions to the power supply could also be a major barrier for those reliant upon electricity for home medical equipment. Having a new heating system installed is also disruptive, particularly in the colder months. Disabled people may also struggle to find somewhere suitable to stay while the installation is going ahead.

One interviewee (a Retrofit Assessor) mentioned that there was also the potential for information about the householder's impairments or health conditions to have not been passed on to the contractors doing the installation which would cause additional difficulties.

Post-installation

Following the installation of measures, contractors are required to give a handover to householders, but interviewees felt that too often, handovers were inadequate. Although householders are given installer's contact details should they have any questions, one interviewee felt that some Disabled people, particularly those who have cognitive difficulties, might struggle to absorb the details over the phone.

One interviewee noted that some residents with solar panels needed information and support signing up for a Smart Export Guarantee (SEG) tariff to maximise benefits from solar generation. This could be due to lack of adequate handover by installers, particularly on ECO4. Alternatively, information might be included in a warranty pack but got 'lost in the paperwork'. Some residents didn't know how to apply for the SEG themselves or found filling in forms and dealing with energy suppliers a challenge.

Social housing tenants with solar panels may not know whether they can apply for the SEG as it often isn't clear whether the resident or the housing provider gets the benefit of the SEG. This is a national issue. If a resident cannot get the SEG, they need to maximise their use of electricity from the solar panels. This requires some degree of flexibility and energy awareness, which might be a challenge for a Disabled person or caregiver.

Existing support mechanisms

An approach used by CSE to support Disabled householders is to assign a named caseworker to guide them through the process. One interviewee (an energy caseworker) described how she breaks down the retrofit customer journey into manageable steps for her casework clients:

"I remind them again of where they are at the step. So I'm giving them small pieces of information every time and I'm just getting them to focus on the next step. And I remember the rest of it". (Interviewee 3, Energy Caseworker.)

This works well for clients who struggle to retain information or who would feel overwhelmed by the retrofit process and struggle to engage without support.

Two interviewees mentioned the additional support that could be offered to Disabled householders through CSE's Smart Energy Action Plans (SEAP) project. CSE have offered tailored advice to households that have recently had low carbon technology installed through local authority schemes on how to make the most of their new technologies. The interviewees felt that this model worked well at addressing the need for more detailed handovers post-installation.

Training and guidance for retrofit professionals

The interviewees working in retrofit (as opposed to home adaptations) felt that there was very little formal training or guidance available to help them support Disabled people. Although they felt that their team could offer support, there is little formal guidance to base this on. Although

many of the interviewees had experience of working with Disabled people and this informed their approach to offering support, most would like further training and guidance.

The interviewee working in home adaptations reported that her organisation's staff receive training on specific impairments and health conditions, namely mental health conditions and dementia.

Promoting schemes to Disabled householders

One interviewee (Retrofit Development Manager) thought that more could be done to promote retrofit schemes to Disabled householders. It was proposed that GP surgeries could contact patients with impairments and health conditions to inform them of funding opportunities. Another interviewee (Energy Caseworker) suggested partnering with Bristol Energy Network to produce targeted promotional materials for eligible households as "they are very good at going out and targeting certain populations of people in Bristol and getting information to them." It was also suggested by a number of interviewees that better links could be made with organisations supporting Disabled people and caregivers to raise awareness of retrofit schemes.

Early identification of Disabled householders

Several interviewees said that they were unsure about the proportion of Disabled householders and householders with health conditions applying for retrofit schemes. They felt that this information was not being adequately recorded or acted upon. One interviewee (Retrofit Assessor) described arriving at properties for assessments with only scant details about householders. He felt that some initial information about householder's needs could be gathered at an earlier stage, such as when assessment appointments are booked in.

Accessibility plans

An approach suggested by one interviewee (Energy Caseworker) to support Disabled clients undertaking retrofit, was the development of accessibility plans. This is a method she uses with clients she works with on a one-to-one basis including those who are undergoing retrofit work:

"Everyone has an accessibility plan and I put the information at the top of my notes so anyone who accesses the record can see what that person needs.... I had someone with a visual impairment and I wrote what size font he needed, what colour font he needed".
(Interviewee 3, Energy Caseworker).

This approach was effective at ensuring that everyone who accessed the client record and made contact with the client was aware of their communication needs and preferences.

Additional funding stream

Within the current retrofit grant process, there is little consideration given to those with impairments and health conditions, with only one opportunity for additional needs and vulnerabilities to be formally recognised. Currently, Retrofit Assessors enter this information into a form during their assessment of the property, which is a time limited visit. The majority of interviewees mentioned that lack of funding curtails the support that can be offered.

A potential solution was suggested by one interviewee (Head of Retrofit, charity) who felt that an additional funding stream should be made available for Disabled people with more flexibility and support built into the process, including an enhanced Retrofit Assessment to fully understand customer needs and dedicated aftercare support.

Aligning retrofit and adaptations

It was noted by two interviewees that the retrofit process could provide an opportunity to improve the home beyond gains in energy efficiency. One interviewee (a Retrofit Coordinator) suggested that retrofit could align with planned home adaptations to limit overall disruption for the householder. Assistive technologies could also be installed alongside energy efficiency measures. Another interviewee who manages the delivery of home adaptations also saw the potential for the adaptations process and retrofit process to be combined.

Summary

- Energy advisors and retrofit professional reported that there was a lack of accessible, impartial advice for Disabled people. This could result in Disabled people being less aware of energy efficiency improvements available through retrofit schemes.
- The grant application process was recognised as a significant barrier to uptake of government-funded retrofit, which is not allocated on a needs basis.
- Retrofit planning generally didn't consider a Disabled person's needs, which could result in negative financial and health impacts.
- Contractors favoured 'easy jobs' that didn't require flexibility on their part (in delivery or procurement, such as of accessible heating controls). As a result, Disabled households could be excluded from retrofit entirely.
- There was no consideration given in planning retrofit of fitting adaptations.
- Information about Disabled people's needs was sometimes not shared with contractors, creating additional problems.
- Post-installation handovers were often inadequate, particularly around use of low carbon technologies and appropriate tariffs.
- Government retrofit schemes are not targeted at Disabled people. There was a lack of data on what percentage of government-funded retrofit was being taken up by Disabled people and caregivers.

5. Discussion & resources for Disabled people, caregivers & retrofit professionals

This section first explores current EPC metrics and retrofit sector customer vulnerability guidance with reference to disability. It highlights useful practical resources for Disabled people, caregivers and retrofit professional, including the resources that have been produced based on this research.

Discussion

EPC metrics

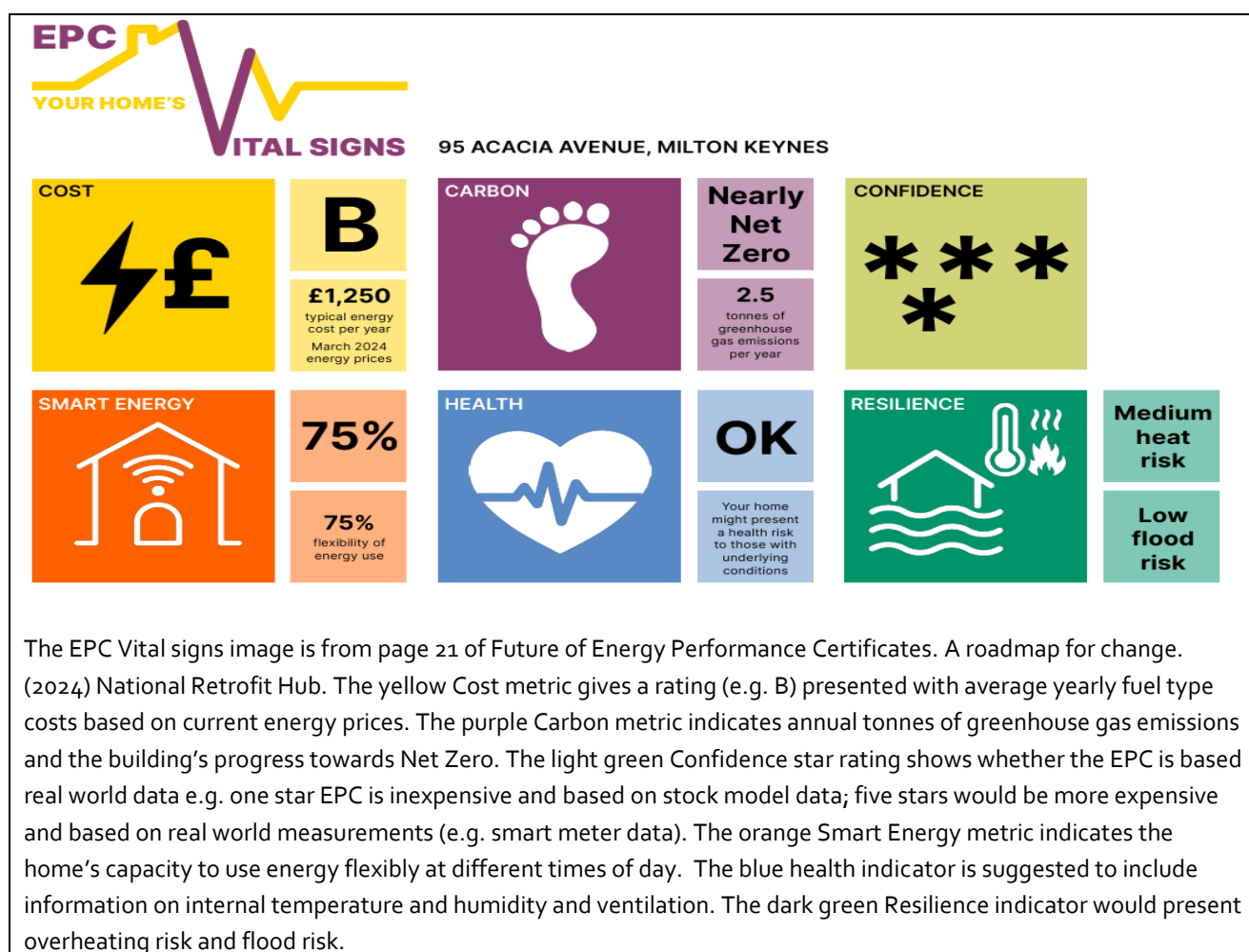
A driver of the challenges experienced by Disabled people and caregivers faced in retrofit was the overwhelming focus on financial (and carbon) savings, with government schemes underpinned by the EPC. EPCs focus on buildings and fail to incorporate any aspect on occupancy, building users' energy behaviours or needs. Thus, retrofit schemes are led by EPC band improvements open to 'commercial optimisation' by contractors, of which there is a shortage. Installers can, therefore, proactively select the 'easy to deliver' profit maximising households for retrofit and avoid projects what might require more flexibility in delivery or different types of technology (e.g. accessible heating controls). Overall, a lack of indicator for health or social value in retrofit ignores the household and social benefits that retrofit can deliver.

New building metrics mooted like the Smart Building Rating, which combines EPC energy efficiency with energy flexibility banding, focus attention on 'being net zero ready'.¹³ People are regarded as 'informed consumers' without acknowledging occupant needs. The National Retrofit Hub has proposed secondary metrics for EPCs for smart energy, a health indicator and resilience indicator (for heat and flooding risk). This would provide a holistic approach to building performance and health, where the health focus is on temperature, relative humidity and ventilation of the building (Figure 17).¹⁴

Figure 17: National Retrofit Hub 'EPC Vital Signs' including health indicator

¹³ Net Zero Building Metrics Smart Homes for the Future Energy System (2025). Centre for Net Zero and Energy Systems Catapult.

¹⁴ Future of Energy Performance Certificates. A roadmap for change. (2024) National Retrofit Hub. The EPC Vital signs image is from page 21.



Combining cost, carbon and health metrics would help to inform and motivate households on the advantages of making retrofit improvements, as the benefits associated with each are clear. A visual indicator in an EPC of occupant benefits like thermal comfort would convey that. It makes the link between healthy buildings and healthy residents. The National Retrofit Hub found strong industry support for a health indicator.¹⁵

Inclusive retrofit

There is guidance in place on how to deliver inclusive retrofit. 'Inclusivity' is either:

- Defined with reference to protected characteristics outlined in the Equalities Act 2010, or
- Linked to 'vulnerability' which includes health, life events, resilience (financial or emotional shocks) and capability (low financial or digital capability) that can affect anyone.

TrustMark's Consumer Vulnerability Policy states that it aims to deliver inclusive services and support all consumers through every part of their consumer journey, and that it is committed to

¹⁵ In a survey of 300 professionals, 87% thought that information on a building's impact on occupant health and wellbeing should be included in an EPC. National Retrofit Hub response to the 'Reforms to the Energy Performance of Buildings regime' consultation 2024-2025.

ensuring that 'consumers get what they need from us and will make reasonable adjustments to support them to access our services'.¹⁶ The policy describes the actions that it expects retrofit professionals to take, which include asking consumers what they need, tailoring communications, treating people with respect and not rushing consumers.

In the PAS 2035 online assessment form, retrofit assessors can record the needs of Disabled People and caregivers in an occupancy question: 'Are there special requirements that should be taken into consideration throughout the completion of the project due to a vulnerable customer being present?' Thus, there is space to record special requirements, but inconsistency in delivery.

A Social Housing Retrofit Accelerator toolkit 'Embedding Equality, Diversity and Inclusion (EDI) in Housing Retrofit' gives detailed guidance for each stage of the retrofit customer journey.¹⁷ This guidance can be useful to retrofit providers that work with owner occupiers and the private rental sector. The toolkit references a Resident Involvement and Empowerment Standard, replaced by the Transparency, Influence and Accountability Standard,¹⁸ which outlines how registered housing providers should engage and communicate with tenants.

The Young Foundation's 'Retrofit for all' toolkit goes some way to providing advice and retrofit professionals with questions to ask Disabled people and caregivers at different stages of the retrofit customer journey.¹⁹ It also suggests how to communicate retrofit (messaging, channels and to specific disability groups) and how to monitor the outcomes of retrofit (outcomes, indicators, methods and tools). Carbon Coop's similarly named toolkit is a useful resource for retrofit scheme designers.²⁰

Resources produced

Based on this research, the following resources have been produced which aim to improve retrofit for Disabled people and caregivers. These have utilised information and documents shared by participating organisations and referenced other research for inspiration.

- Disabled people and caregiver's checklist: What to ask about and check when thinking about or making home energy efficiency improvements.

¹⁶ TrustMark Consumer Vulnerability Policy, March 2024.

¹⁷ Embedding Equality, Diversity and Inclusion (EDI) in Housing Retrofit. (2024) Social Housing Retrofit Accelerator for the Department of Energy Security and Net Zero. Available at: <https://riseretrofit.org.uk/resources/toolkits/embedding-equality-diversity-and-inclusion-edi-in-housing-retrofit> Social Housing Retrofit Accelerator are now known as RISE: Retrofit Information Support and Expertise.

¹⁸ Transparency, Influence and Accountability Standard. (April 2024) Regulator of Social Housing.

¹⁹ [Retrofit for all: a toolkit supporting greener, healthier homes](#). Supporting underrepresented or vulnerable households towards a just transition. (2025) Young Foundation for the London Sustainable Development Commission. See also A Just Transition in Retrofit: interim report and final report (January and May 2025)

²⁰ [Retrofit for All Toolkit. How to centre energy-vulnerable clients in the design of energy efficiency schemes](#) (2021) Carbon Coop.

- Client needs checklist. Questions for energy advisors and retrofit professionals to ask households at the initial engagement stage of retrofit.

We hope these resources will be used by Disabled people, caregivers, Disabled People's Organisations and caregiver's organisations to support effective, appropriate, high-quality advice and retrofit for Disabled people. We also aim to encourage use of these resources by retrofit professionals via national promotion, liaison with national retrofit organisations plus trialling with CSE and affiliated organisations' staff. We will explore the potential to develop training for retrofit providers in disability awareness.



6. Conclusions & recommendations

This final section outlines the research's conclusions, areas for further research, and makes recommendations, organised by target stakeholder.

Disabled people and caregivers experience a range of barriers that risk excluding them from the energy transition. Many Disabled people experience both low income and higher energy use, either from being at home more or to meet energy-related health needs such as additional heating, running assistive-powered equipment (e.g. electric wheelchair) or storing medicine.²¹ This puts Disabled people at risk of fuel poverty. Government income-related fuel poverty statistics do not include disability benefits, which are not means tested. However, when disability benefits are included, a total of 68.7% fuel poor households receive at least one income-related benefit (59.5%) or a disability benefit (Attendance Allowance, Disability Living Allowance, Personal Independence Payment) (9.2%).²² Since 2019, the number of working age Disabled people has risen by 17% and there has been a steep rise in claims for disability benefits, influenced by the pandemic and cost of living crisis. Yet, less than half of the population of Disabled (46%) claim disability or incapacity benefits.²³ Thus, many Disabled people are not included in fuel poverty statistics as they do not claim disability benefits and may not claim an income-related benefit.

This research found that financial barriers were at the forefront in preventing Disabled people and caregivers from taking up retrofit. Grants or personal savings enabled household to progress with retrofit. Disabled people did not tend to use personal loans or financial help from relatives to make home energy efficiency improvements. However, obtaining grants was hampered by the bureaucracy of the grant application process.

Disabled people's awareness of energy efficiency measures and eligibility of grant schemes could be limited by lack of independent, trustworthy advice. Inaccessible communication when finding out about retrofit could result in 'information overload' for Disabled people causing confusion. Lack of written communication, poorly delivered verbal communication, and inappropriate information formats were other challenges Disabled people experienced. Dissatisfaction with communications applied most to grant organisations, retrofit planners and installers. Even when Disabled people had made their communication and other needs clear, there was a risk that this information was not conveyed to all contractors involved in retrofit delivery.

When planning and delivering retrofit, Disabled people's needs and individual circumstances generally were not taken into account, in spite of the TrustMark consumer vulnerability guidance and an occupancy question in the PAS 2035 assessment where household special requirements

²¹ <https://www.equallives.org.uk/post/fuel-poverty-is-a-disability-justice-issue>

²² Annual fuel poverty statistics in England 2025 (2024 data) (2025) Department of Energy Security and Net Zero.

²³ What's behind the rise in disability benefit claims? 06/05/2025 <https://neweconomics.org/2025/05/whats-behind-the-rise-in-disability-benefit-claims>

can be recorded. Decisions on what measures and technologies to install were affected by commercial concerns rather than suitability and accessibility. Installations could be made which were not appropriate for the Disabled person. Both Disabled people, caregivers, energy advisors and retrofit professionals repeatedly highlighted issues with the commissioning and effective use of heat pumps and solar panels. For heat pumps, providing a personalised annual running cost was important to understand whether the technology could keep the Disabled person affordably warm (and therefore whether to install it) and to inform commissioning decisions (like sizing).

Disabled people's need for greater flexibility in retrofit delivery could lead to them missing out, as contractors focused on delivering easier work.

At the installation stage, disruption and unexpected disconnection of essential services (electricity, water) could cause Disabled people and caregivers significant issues. Inadequate discussion around temporarily vacating the home or need for respite could leave Disabled people in difficult situations. Contractors with little disability awareness could inadvertently add to Disabled people's distress.

At handover and post-installation, Disabled people could be distrustful of support offered, considering it to be a commercial opportunity used by contractors to maximise profits by selling extended warranties, for example. This could lead to them not receiving essential information about how to effectively use new technologies. User manuals and product accessibility (apps and screens, connectivity of installations) could also raise issues for Disabled people at the post-installation stage.

The need for impartial advice on smart tariffs, especially the Smart Export Guarantee (SEG) was raised by Disabled people and retrofit professionals. This was found to be particularly relevant in social housing, where it is often unclear whether the tenant can apply for this type of tariff.

Overall, Disabled people experienced the lengthy retrofit process, having to chase contractors and lack of ongoing communications as frustrating and wearisome.

Thus, current retrofit delivery does not appear to take the needs of Disabled people into account to any great extent. Some advice organisations deliver post-installation support such as on the use of heat pumps and smart energy advice. A few organisations (like the Disability Energy Support and water advice service from disability charity Scope²⁴, and the Ideal4All charity²⁵) specialise in the supporting Disabled people with energy advice.

Government retrofit schemes are not targeted at Disabled people, nor does eligibility include disability benefits. There is also scant data about the extent of uptake of government funded schemes by Disabled people and caregivers.

²⁴ Scope Disability Energy Support and water advice service has accessible leaflets for energy and water and accepts referrals <https://www.scope.org.uk/partnerships/refer-people-to-scope-s-disability-energy-support-and-water-advice-service>

²⁵ Ideal4All is a Midlands charity that provides energy advice to Disabled people <https://www.idealforall.co.uk/disability-information-and-advice>

The impact of failed home retrofit installed under government schemes was noted in a report for the House of Commons Energy Security and Net Zero Committee.²⁶ It was found that it exerts enormous mental and financial pressures on households and has negative impacts on the health of residents and the building, as well as denting consumer confidence. Non-disabled people were put off trying to retrofit their home again and said they would rather live in a cold home. With the additional challenges that Disabled people and caregivers face to engage in retrofit the impact of low take up of retrofit or failed retrofit on Disabled households could be profound.

Areas for further research

The literature review found no evidence about possible co-benefits that Disabled people are likely to experience in the energy transition or how co-benefits could vary for different types of impairment or health condition. Similarly, no literature was found on heat networks and disability. This is problematic as heat networks are increasingly being used to deliver low carbon heat and have been used in social housing developments for many years. Bristol is in the process of installing a citywide low carbon heat network. Concerns were raised by research participants about road works when installing heat network pipes and how Disabled people's needs are considered when planning this work. Participants also cited the lack of a heat network Priorities Service Register as an issue. Such a register could help Disabled people in emergency situations if supply of heating and hot water was interrupted. Both these areas would benefit from further research.

Research recommendations

This section outlines recommendations based on this research, with the aim to support effective, appropriate, high-quality advice and retrofit for Disabled people. Disabled people's and caregivers' suggestions for improvements are indicated by '*'. The recommendations are organised by target stakeholder:

- 1) energy advice organisations & retrofit professionals
- 2) national, regional and local government and industry bodies
- 3) Registered Housing Providers

1. Recommendations for energy advice organisations and retrofit professionals

Overall

- Adopt a customer-centred approach. Be flexible to meet the needs of the Disabled person or caregiver. Give information as is needed and can be absorbed by the individual, not to meet quotas. Focus on being with the 'retrofit customer' consistently from start to finish.*

²⁶ Retrofitting for net zero. (2025) The House of Commons Energy Security and Net Zero Committee. HC453.

- Ask about Disabled people and caregivers' needs early in the retrofit process in an 'accessibility plan,' including communication, accessibility and individual circumstances. Share the person's engagement needs with all retrofit professionals involved.
- Train advice and retrofit professionals in Disabled people's communication and access needs, with access to disability-specific awareness resources when needed. This training should be designed and run by a Disabled People's Organisation.*
- Have a specialist or ideally someone with lived experience as a single point of contact for Disabled people and caregivers. This person should have regular check-ins with the Disabled people and caregivers, and ensure actions are recorded and traceable.*
- Provide support with forms and the grant application process, including going through and explaining questions and completing forms, if needed.*
- Work with health services, local advice agencies (such as those advising on welfare benefits), community centres, and Disabled People's Organisations and caregivers organisations to raise awareness of retrofit schemes.

Initial engagement

- Talk to people before they sign up to retrofit, especially for low carbon technologies. Promote that independent advice is available to build trust. Outline clearly the benefits of retrofit (e.g. fuel costs, comfort, convenience, carbon emissions reduction).
- For grant-funded retrofit, ask residents to think about having home improvements made 'as if it were your money' to encourage them to ask installers questions and demand good service. Ensure households understand the retrofit process and any implications about technologies they are considering installing. For example, heat pumps may involve a whole new method of heating for someone who normally only heats a few rooms twice a day.
- Create and support accessible communication during the retrofit process with accessible content, formats and delivery. For example, involve a Communications team to create accessible letters and resources, in Easy Read and Plain English; provide British Sign Language interpretation or Video Relay Service if required during surveys and appointments; and avoid the use of confusing terminology and technical jargon (including the term 'retrofit'). Ideally resources should be codesigned with Disabled People's Organisations. *
- Provide expectation of times between communications so people know how long they will be waiting.
- Organise visits that are accessible for Disabled people and caregivers to local homes or community buildings that have low carbon technologies installed so they can learn from neighbours about their retrofit experiences and see technologies in situ.

- Outline and explain the expected disruption which will result from the retrofit process. Examples include whether or not electricity or water will need to be turned off and for how long, noise disturbance, and how many retrofit professionals will need to enter the home.
- Identify enabling works to support retrofit (repairs, loft clearance, moving furniture) and provide financial support for this.

Household eligibility and building suitability

- Make it clear what retrofit is available and to whom. For example, eligible private tenants can initiate retrofit with their landlord's consent.
- Have transparent eligibility and decision-making processes on retrofit measures available. These appear to be subjected to personal views or commercial decisions (e.g. age exclusion for solar panel installation, EPC band improvement requirements). An unbiased, honest, documented response on retrofit decisions would be useful and build trust.*

Planning and procurement

- Determine how the Disabled person or caregiver's communication and access needs might impact the retrofit process, thinking about the need for flexibility in delivery, disruption and possible need for respite.
- Personalise the retrofit specification and plan to meet Disabled people's and caregivers needs.*
- For heat pumps in particular, give a personalised annual running cost which takes into account the Disabled person's heating needs and regimes to assess whether heating will be affordable and comfortable.

Installation

- Have a specialist or ideally someone with lived experience as the accessibility lead. This will ensure the installation caters for the needs of the Disabled person or caregiver. They should check in on the accessibility of journeys and can be a single point of contact for any queries or concerns from Disabled people.
- Provide a phone number for a contact other than the installer, should the Disabled person need to speak to someone else at this retrofit stage.*
- If the project doesn't have an accessibility lead, it is important that the installer takes the time to speak to the householder, or their carer or caregiver, about the retrofit process and the householder's access needs. It is important that the installer does not make assumptions about the householder's needs. *

- Commit to completing installations, ideally with one installer, to provide continuity in delivery and avoid interruptions and unfinished projects.*

Post installation support

- Provide instruction on how to operate low carbon technologies in an accessible format appropriate for the householder. Instructions should be co-created with a Disabled People's Organisation. Make sure that both the Disabled person and caregiver are shown how to use the technology, and that the technician is aware of the communication needs of the Disabled person. Provide guidance that households can return to, such as filmed instructions or written instructions with imagery. *
- Give extra support for people who require it (for instance, written information or video for repeated viewing, further phone support).
- Offer appropriate SEG and smart tariff advice. Build trust by emphasising that advice is impartial, that you are not trying to sell a tariff.
- Include feedback from Disabled people and caregivers on the extent to which their access needs were met in monitoring and evaluation. Include this feedback in quality assessment of installers.

2. Recommendations for Government, industry bodies and commissioning organisations

- Have a ten-year plan to provide trained professionals, materials and resources to achieve meeting carbon budget targets. This would be widely beneficial, creating jobs, reducing carbon emissions and putting households more in control of their energy bills.*
- Implement a standard, training or certification for retrofit professionals on how to communicate and behave during home visits with Disabled people with a range of health conditions. This should be created with a Disabled People's Organisation. PAS2035 recommendations are not enough.*
- Create installer contract templates which outline customer service standards, consumer safeguards and redress in relation to Disabled people.
- Add extra sums to retrofit grants that can only be accessed by households with Disabled people. This can pay for additional support, so that Disabled people can have what they need and installers are incentivised to take those jobs.
- Enable retrofit with Disabled people by building more flexibility and support into the process, including an enhanced Retrofit Assessment to fully understand customer needs, digital support if needed and dedicated aftercare support.

- Monitor retrofit contractors to promote high quality standards in processes and installations. Require that retrofit professionals who fall short of standards receive sufficient training and monitor their ongoing work..*
- Provide data from government schemes on uptake of retrofit by Disabled people.

3. Recommendations for registered housing providers

- When the installation of heat pumps is being planned for social housing, especially where this is being done through mass retrofit programmes, it is critical that consideration is given to the needs of each Disabled household, and how easy or not it will be for them to adapt to new technologies and heat approaches. This is especially important for households with higher-than-average warmth needs. Blanket installations without undue consideration run the risk of households living with inappropriate technologies.
- Ensure accessible design features, like wet rooms, that are already in properties are not removed as part of energy transition renovations.*

