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Policy Pathways to Justice in Energy Efficiency

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Executive Summary

Introduction

This project addresses two key gaps in knowledge regarding justice in energy efficiency policy in the UK. First, despite disabled people and low-income families with children being defined in policy as vulnerable to fuel poverty, there is very little evidence about how the needs of these groups are recognised or incorporated into policy decisions. Second, there is no clear evidence on how energy efficiency policies actually affect these groups, and whether policy outcomes are consistent across the UK. Drawing on concepts of justice, the overarching aim of this project is to investigate the implications of existing domestic energy efficiency policies across the four nations of the UK, and to use cross-national comparisons and lesson-drawing to identify sustainable future policy pathways.

Objectives

The project had four key objectives:

1. To compare and contrast how distributional, procedural and recognition justice are conceived and implemented within energy efficiency policies across the UK;
2. To explore how distributional, procedural and recognition justice are operationalised within energy efficiency schemes across the UK;
3. To assess the extent to which energy efficiency policy within the UK sufficiently meets the needs of disabled people and low-income families;
4. To consider what lessons can be drawn for future policy and practice

Method

The research used policy reviews and qualitative interviews to explore the research questions, and was divided into three work packages.

Work Package One: The first work package included a policy review that traced the main fuel poverty and energy efficiency policies across the UK over the past two decades. The review identified how eligibility for fuel poverty support has changed over time, the main types of policy, and levels of funding. In addition, 18 key stakeholders working at the national policy level across the UK were interviewed (see Table 2.2). The sample was made up of stakeholders who work/have worked: on policy development at the UK level; on policy development in England, Northern Ireland, Scotland and Wales; for national level organisations that represent families with young children and disabled people/those with long term health conditions; for local authorities; within the energy industry, and within the field of fuel poverty.

Work Package Two: Two sets of qualitative interviews were undertaken, the first with 60 practitioners involved in the delivery of energy efficiency schemes, and the second with 48 households who were either eligible for, or who had received, energy efficiency measures.

Work Package Three: This part of the project synthesised the initial research findings from the first two work packages, two workshops were held to ‘sense check’ the research findings through a

process of respondent and expert validation, and to provide early research findings to those working in the field. The first workshop was held in June 2018 with 28 practitioners (including local authorities, housing associations, and installers). The second workshop was undertaken in July 2018 with 10 stakeholders working at the national level (including government Departments, national charities, and representatives from the energy sector). The majority of those invited to the two events had taken part in the Work Package One/Two interviews. The workshops enabled a clearer indication of how the final practitioner guides might be developed in a way most relevant to practitioners and policymakers.

Headline findings and recommendations

Five substantive themes emerged from the research:

1. 'The numbers game';
2. Households in need are not always eligible;
3. Households are difficult to find;
4. A Failure to understand households' needs
5. Eco delivery is 'patchy'.

Headline Finding One: the numbers game

Current challenges

Current energy efficiency policy design leads to an emphasis on meeting targets at the lowest cost, 'the numbers game'. Specifically:

- Energy advisors are not always able to recommend the energy measures that would be best suited to the property and the household living there, and instead are limited to centrally defined, inflexible targets that restrict the types of interventions available.
- The drive to reduce costs has also resulted in more households being required to make financial contributions to enable retrofit work to go ahead. It is clear from our research that this is a substantial barrier to taking up measures.
- Disabled people and families often live in the poorest quality houses and have additional needs that require support throughout the retrofit process. This can make it more expensive for scheme providers and installers to reach these households and treat their homes. Incentives to deliver targets at least cost have resulted in these households being side lined.
- Short-term programmes, and their associated targets, do not allow time for thorough evaluation and the development of more effective approaches to implementation.
- Evidence gathering is reduced to aggregate quantification of measures installed rather than the qualitative impact on people's lives. Programmes in Scotland and Wales with different priorities and targets can soften the effects of ECO delivery as they are able to draw down additional funds. Local authority ECO Flexibility can also play a role, putting vulnerable households at the centre of delivery, but only where proactive local councils have published a Statement of Intent (SOI) and have funding and resources dedicated to eradicating fuel poverty at a local level

Where existing practice works well

Tax payer funded schemes typically place their emphasis on households rather than on buildings and are grounded in social policy (e.g. fuel poverty alleviation). Consequently, they are less driven by volume targets and are less regressive since they are not funded from levies on energy bills. While such schemes operate in Scotland, Wales and Northern Ireland, there has been no tax payer funded scheme in England since Warm Front was closed in 2013. The schemes in Scotland and Wales, plus some local council and partnership offerings in England, can provide match funding for ECO, thus minimising the need for household contributions. Scotland in particular has been highly successful in working in this way. This activity is likely to help more people in need regardless of specific eligibility criteria and could drive up the number of households receiving support.

How policy could be improved – rethink policy targets

There has often been internal conflict between policy and programmes that sought to tackle environmental and social objectives simultaneously. Policymakers should recognise that there needs to be dedicated focus on fuel poverty alleviation and rethink how action is guided and how targets are set. We recommend that a taxpayer funded scheme is reintroduced in England, and that fuel poverty alleviation is considered in social policy terms. If programmes such as ECO continue to support vulnerable households, there needs to be a greater emphasis on the positive impact of intervention to the household rather than a focus on least cost.

Headline Finding Two: households in need are not always eligible

Current challenges

Where eligibility criteria are inflexible, vulnerable households, including disabled people and low income families, may find they are unable to access support despite being in need. Whilst stakeholders considered that some progress has been made on this issue in ECO2 through the introduction of local authority ECO Flexibility, which enables councils to set extended eligibility criteria, this is dependent on whether councils are proactive in having a Statement of Intent (SOI) in place. While eligibility criteria have been expanded under ECO3, much more needs to be done to support households that fall foul of funding conditions. In addition, in some cases, the availability of funding may vary according to the period that ECO is in. For example, the availability of funding may be reduced when ECO obligated energy suppliers and their delivery agents are close to meeting their targets and offerings are closed to households.

Where existing practice works well

Where match funding for ECO can be found, such as through dedicated tax payer funded fuel poverty schemes, partnership working or local government contributions, this is likely to help more people in need regardless of specific eligibility criteria. It was reported by stakeholders that there is much more flexibility to top up support in Scotland and Wales, whereas activity in England was far more variable.

How policy could be improved – make eligibility as stable and consistent as possible

National government should promote longer term delivery models to prevent households being turned away from support where ECO delivery agents are close to meeting their targets. National government should do more to support and promote the development of local authority ECO Flexibility across all local government areas and consider the possibility of additional flexible

eligibility criteria being used across national policy. Clear, equitable and stable eligibility criteria need to be developed so that referral agencies and households have confidence households will meet eligibility criteria.

Headline Finding Three: households are difficult to find

Current challenges

Often households are highly risk averse and suspicious about offers of energy measures, especially if these come through the private sector, including energy companies. During interviews, some households noted that they are unable to negotiate the 'information minefield', whilst others noted that they were reluctant, or unable, to share personal information with scheme providers. Such households may miss out on support that they are entitled to as a result. In addition, obligated energy suppliers have in the past relied heavily on referral partners and 'lead generators', whereas others used broad marketing strategies, relying on households to make contact with them or their agents. Without proactive targeting and promotion of schemes, some families and disabled people who are either socially isolated or not engaged in typical communication channels miss out on support. This is most notable in England where access typically relies on local arrangements, and impact varies substantially as a result. Whilst the health and social care sectors have some insight into the location of vulnerable households, and may be well placed to make referrals into energy efficiency schemes, their time and resources are restricted. Furthermore, in many instances caseworkers have nowhere to make referrals to. Our evidence shows that where such trusted intermediaries are absent or under-resourced, schemes struggle to reach vulnerable households. Such trusted intermediaries are therefore essential for facilitating access to fuel poverty support schemes.

Whilst Northern Ireland is considered the leader in terms of targeting households, Scotland and Wales have made progress in targeting specific households. England remains behind in this area.

Where existing practice works well

Greater success in terms of take up was reported where there was consideration of who is involved in marketing - messages from the public and voluntary sectors were considered most trustworthy by our households compared to the private sector. These intermediaries have community knowledge and can identify households in need and are more likely to be trusted compared to other organisations.

Word of mouth is a key factor determining levels of uptake of energy efficiency measures. Households want to understand what the works will entail, and this can improve uptake. The value of social media should not be underestimated. Households interviewed as part of this research used social media to find out more about schemes and discuss eligibility, sharing information and photographs, and discussing the risk of potential mess and disruption. Interestingly households using social media were less concerned about the trustworthiness of the information they received compared to those contacting their energy company. This was because individuals were sharing their experiences and making the unknown, known.

How policy could be improved – improve mechanisms for finding households

Delivery agents need to capture how well schemes support vulnerable groups. We recommend that monitoring should be implemented to determine whether programmes are effectively

targeting vulnerable groups. As part of this, there needs to be greater access to quality data, data matching and data sharing to enable households to be targeted more effectively.

In more general terms, the trustworthiness of energy efficiency programmes needs to be improved, most notably in England. Once again, a clear, recognisable scheme, backed by national government may be the solution to this, especially one supported by or delivered through trusted intermediaries. With an emphasis on the role of trusted intermediaries, formal recognition to their role needs to be given and resources allocated. Furthermore, intermediaries need to be clear about how and where to refer a household, and they need to be confident that referrals will not waste a householder's time or raise their expectations unnecessarily.

Headline Finding Four: a failure to understand needs

Current challenges

Policy design and implementation does not take into account how households engage with energy efficiency. This means that the design and implementation of measures is blunt and potentially ineffective for some households. Whilst many households expressed a preference for face-to-face advice, such intensive support is difficult to resource. The Government's digitalisation agenda now means that there are now limited advice options for households. Despite this, households undergoing work may drop out of schemes if their needs are not taken into consideration. This may also prevent households from taking up support and improving their properties and their lives.

Where existing practice works well

The most vulnerable fuel poor households often need more support than the retrofit of energy efficiency measures to take them out of fuel poverty, such as income maximisation and tariff support. Households were more inclined to apply for energy efficiency schemes if these support options had been achieved and where trust had been built with intermediaries (e.g. a successful Warm Homes Discount Scheme or a debt relief application). The use of 'one-stop-shops' was the preferred approach of policymakers and practitioners alike. For example, in Scotland there is a single agency that offers advice and installation work and this has proved instrumental in the successful delivery of programmes. Different aspects of a customer journey were said to reduce drop-out rates:

- Home visits are considered an essential part of ensuring scheme uptake among vulnerable groups.
- A clear plan of action agreed with the household in advance in order to address specific needs of the household. This action plan detailed the most appropriate work for the household, any additional support that they required during the process (including moving furniture), what to expect, when works would take place, and for how long.
- Informed installers: installers need sufficient information, knowledge, and understanding of the needs of the household.
- Having a single point of contact throughout the duration of a household's involvement in a scheme is useful for building trust and oversight.
- The inclusion of advocacy services and agencies (i.e. trusted intermediaries) during delivery can provide additional support.

How policy could be improved – focus on the needs of households, and how they use and engage with energy, instead of the current focus on technical improvements to buildings

There should be improved consultation and participation with key groups and charities representing vulnerable groups to help the energy efficiency industry understand their needs. Customer journeys must support all households through the process, recognising different needs.

Trusted intermediaries are essential for facilitating access to support, and where they are absent or under-resourced then our evidence suggests that energy efficiency schemes struggle to reach and retain vulnerable households throughout the process. If they are to continue in this role, formal recognition to their role needs to be given and resources allocated.

Headline Finding Five: ECO delivery is patchy

Current challenges

The different ECO delivery models often lead to differences in terms of the support that is available and how it is delivered. Success can depend on the level of match funding available, the nature of contracts between delivery agents and obligated energy suppliers, suppliers' progress towards ECO targets and the proactive use of Local Authority ECO Flexibility Statements of Intent. Different ways of working can also make delivery complex and problematic. For example, local authority procurement works very differently to private sector business models.

This all leads to complex and variable delivery across Great Britain. This is particularly true in England where a scheme's success often depends on local actors, such as engaged local authorities and the health and voluntary sectors. However, these are under resourced and have many other priorities. As there is no single strong and consistent approach in England, intermediaries find it difficult to refer households into schemes and as a result it is harder to support vulnerable households.

Where existing practice works well

Once again, approaches in Scotland and Wales tend to be less 'patchy'. Both Scotland and Wales have been able to combine funding sources to address some of the issues that exist with ECO. In England this has been achieved through partnership working, yet this approach depends on the resourcing and objectives of the different actors.

How policy could be improved – aim for consistent outcomes for households wherever they live

In England, intermediaries need to be clear about how and where to refer a household, and they need to be confident that referrals will not waste a householder's time or raise their expectations unnecessarily. The government should consider re-introducing a treasury funded scheme in England, similar to those operating in Northern Ireland, Scotland and Wales.

Policy pathways to justice

In addition to supporting the eradication of fuel poverty, energy efficiency policies can lead to improvements of health and well-being in UK households, with a variety of benefits including a reduction in the burden on the NHS (see for example Brenda Boardman writing in the Guardian on the 9th December, 2018). Policies can also support economic growth in the energy efficiency sector and potentially reduce carbon emissions. Yet, energy efficiency and fuel poverty policy and programmes have been in continual flux over recent years. Action needs to be taken on energy justice – in terms of recognition, procedural and distributive justice – to ensure that the needs of disabled people and families on low incomes are addressed. This section draws sets out possible directions for future policy, clustered under the three headings of recognition, procedural and distributive justice.

Policy pathways to recognition justice

Our findings have highlighted current ways in which practitioners are enabling greater recognition of the needs of households who live with, or are at risk of experiencing, fuel poverty. Nevertheless, far greater attention needs to be paid to issues of recognition justice – most notably not only the way that households engage with energy, but also the way that energy efficiency schemes engage effectively with households. This focus needs to relate not only to understanding the variety of needs and experiences at the level of individual households, but also to how policymakers (from local level to national; across different sectors such as energy, health and housing) recognise and act on fuel poverty. Specifically, the findings have highlighted three main areas relating to recognition justice.

The findings have highlighted how the eligibility criteria that entitle households to energy efficiency measures can raise issues of recognition justice. The use of passport benefits, income thresholds, demographic characteristics, tenure, or property characteristics as eligibility criteria will all, by their nature, exclude some households that are in need, or are so complex that households exclude themselves. Policies such as ECO Flexibility have the potential to overcome some of these issues, allowing local authorities to make judgements about household need, and to support households that fall foul of existing eligibility criteria. However, this relies on a Local Authority's knowledge of vulnerable groups in its area, and capacity to act (see *Distributional Justice* below).

The importance of recognising and treating the households' needs holistically was highlighted. In part, this was to ensure that energy efficiency interventions had their intended impact - for example – if a new heating system was installed but the household could not afford to use it this would negate its benefits, however, if entitlement checks for Warm Home Discount/other cash based benefits were also made this would have a much greater overall impact.

Issues around being able to recognise, understand, and respond to households' needs were raised by a variety of practitioners interviewed. Some organisations did not have the capacity, skills or knowledge to support households. Other, often larger, organisations had specialist teams trained in the needs of vulnerable customers, and were more able to identify where additional support might be necessary. However, even where household needs were acknowledged, these could often be lost in the long supply chains associated with the UK's current energy efficiency market, and whilst the organisation providing the initial eligibility checks might have been aware of a households' needs, the installers entering the home were not. Within this research the importance of intermediaries (often charities, but also through local authority departments not traditionally associated with fuel poverty) in both finding and supporting vulnerable households

was highlighted, given their knowledge of household needs. In the most positive cases intermediaries were able to locate eligible households and support them through both the application and installation process. Whilst intermediaries are often overstretched, and may not naturally engage with issues of energy efficiency, the potential offered by this sector, if sufficiently funded, is clear.

To enhance recognition justice the findings from this project suggest the importance of putting the needs of vulnerable households at the centre of energy efficiency policy, rather than being driven by policy settings or mechanisms (e.g. eligibility criteria and supply chains). Considering households' wider circumstances and needs is essential, where possible, households should be supported holistically, with entitlement to energy efficiency measures being one aspect of a wider set of benefits checks and support offered. Whilst considered hard to reach by those delivering energy efficiency policies, there is substantial knowledge about how to locate vulnerable households and support them within other sectors, and the challenge for energy efficiency policy is to harness this.

Policy pathways to procedural justice

Our findings have highlighted ways in which procedural justice - making sure that the voices of individuals, as well as the organisations that represent the diverse needs of disabled people, and families on low incomes, can be heard and taken on board, by policymakers at local and national level. Specifically, the findings have highlighted three main levels where issues relating to procedural justice are raised.

Procedural justice typically considers issues of participation within policy development and implementation. In British policy making (ECO) organisations representing disabled people and families have had a limited presence in consultation processes. This not only limits the level of consideration of these groups views in decision making but can also reinforce a perceived disengagement / lack of cross-sector policymaking. There is also evidence to suggest a lack of detailed and systematic evaluations of energy efficiency policies and programmes at the household level. However, it should be noted that more active engagement at both ends of the policy process was reported in Scotland, Wales and Northern Ireland.

At the scheme level there was substantial evidence of joint working both through formal partnerships and *ad hoc* arrangements. Energy efficiency advice/fuel poverty support was offered in a variety of settings including Children's Centres, hospitals, charities, and GP surgeries. These forms of collaborative working aimed to improve take up of measures by both finding vulnerable households and being able to consider their energy needs in a trusted environment. Partnerships of this nature (formal or otherwise) allowed the knowledge and skills of the non-energy sector, and to some extent the needs of vulnerable groups, to be considered within policy delivery.

At the individual level, whilst current domestic energy efficiency policy aims to support the most vulnerable fuel poor households through the provision of home improvements, what has been underestimated by policymakers is the high levels of mistrust that many households have in the energy industry. For households with additional or complex needs, the combination of mistrust and perceived risks of needs not being addressed sufficiently may outbalance the potential benefits of energy efficiency measures.

To enhance procedural justice there is a need for vulnerable households' voices to be heard throughout the policy process. At present, especially with relation to ECO, the voices of vulnerable groups are not being systematically sought during policy development. This is likely to impact on all aspects of policy delivery including the setting of targets, eligibility criteria, and funding priorities. At the end of the policy process household level evaluation is essential in order

to enable future policy learning. The role of trusted intermediaries is once again prominent as a research finding here, with the potential for vulnerable groups' needs being addressed through the range of formal and informal partnerships that exist. However, as noted elsewhere, whilst this approach can prove successful in finding and supporting households, it must be met with adequate resources and a robust system to refer eligible households into. Finally, in order to implement policy more successfully in the future, it needs to be considered trustworthy by households. In the short term, those referring households into schemes need to be clear about how and where to make a referral, and they need to be confident that referrals will not waste a householder's time or raise their expectations unnecessarily. In more general terms the trustworthiness of energy efficiency policies and schemes needs to be improved, most notably in England. Once again, a clear, recognisable scheme, backed by national government may be the solution to this.

Policy Pathways to distributive justice

Our findings have identified a number of issues of distributive (in) justice. Disparities in terms of access to measures exist within each country of the UK, and across all four. In England substantial local and regional disparities are evident, for example, where some local authorities have worked successfully with other sectors or with ECO Flexibility to access funds, and others have not had the capacity to do so. Moreover, cross-national comparisons indicate that Scotland has consistently delivered more measures per household via ECO than England (see Chapter 3) as a result of its policy of providing additional treasury funded resources. The emphasis on a supplier led focus in England leads to questions about the regressive nature of this type of approach. Ironically, greater attention on households living in vulnerable situations - with subsequent higher costs involved - accentuates the regressive nature of this type of funding for those households who continue to miss out on support.

Rural communities and those in costal locations have also been identified as more expensive to deliver measures to and, despite rhetoric about supporting these areas, are less likely to receive measures in their current form. The emphasis on the private housing sector, and restrictions around social housing have also affected how support has been delivered, and to who, with some households in need in the Social Rented Sector being ineligible. Equally, ECO settings/scores have historically encouraged an emphasis on larger houses (given the way that ECO scores are calculated), despite more vulnerable households often residing in smaller houses. Linked to this the way in which competition within ECO works (via long supply chains, contacting and so on) can mean that households may not always be referred into the most appropriate schemes, regardless of their needs. Finally, there are instances of households in England (or landlords in the case of Northern Ireland) being asked to make financial contributions, which for those on low incomes has usually been prohibitively expensive. As highlighted throughout this report, vulnerable households are difficult to find, and many of the factors identified above make it harder to locate those eligible for support (because eligibility is so complex) and to provide appropriate support for them in a consistent manner.

In order to address issues of distributive justice a key objective should be to aim for consistent outcomes for households wherever they live, both within the different UK nations and between them. In terms of finding households better data, data matching and data sharing is necessary if households are going to be targeted more effectively. Whilst Northern Ireland is the leader in terms of this approach, and Scotland and Wales have also targeted specific areas of concern, England remains behind, often relying on proactive local authority partnerships, referral networks, and in many cases individuals to come forward and ask for support. The use of energy 'one stop shops' may enable greater consistency – for example, in Scotland there is a single agency that

offers advice and installation work, compared with England's highly variable policy landscape. Whilst one stop shops have limitations, they provide a clear route for referrals to be made, have a clear 'safe' identity that is removed from some of the less trusted elements of the energy industry, and can become a data hub.

In England, whilst ECO Flexibility is to be welcomed, it has the potential to add disparity between areas, with households in the most mobilised local authorities, with the greatest capacity, benefiting at the cost of those in the least mobilised. Arguably more flexibility within eligibility criteria built into policy at the national level may reduce these local effects. Finally, given the variability of English policy delivery, we recommend that a national scheme is reintroduced in England, rather than relying on proactive local authorities and household contributions, in order to end the effects of the 'postcode lottery'.

Chapter One: Introduction and theoretical framework

Background

Improving domestic energy efficiency has been one of the main ways of addressing fuel poverty in the UK for several decades. However, policy has changed drastically over the last decade, and whilst schemes exist across all four nations of the UK, these have become increasingly divergent in nature. Changes to energy efficiency policy have occurred within the context of broader public policy reforms. Cuts to public budgets across almost all policy areas combined with extensive changes to welfare provision have been linked to increased poverty, especially amongst those of working age, including disabled people and low-income families (Beatty and Fothergill 2013). In comparison, whilst also considered vulnerable to fuel poverty by the Department for Business, Energy, and Industrial Strategy (BEIS), older people have generally been protected from these reforms.

Retrofit programmes have historically suffered from low take up (see for example Hamilton et al, 2016). At present, there is limited evidence on whether UK energy efficiency schemes have successfully reached groups that are vulnerable to fuel poverty (distributive justice), and whether outcomes for these groups vary due to different national policy approaches. Moreover, the research that does exist (e.g. Guertler and Royston 2013, Snell *et al* 2015) questions whether energy policy has sufficiently acknowledged and responded to the needs and priorities of working age disabled people and low-income families (procedural and recognition justice). These two under-researched groups, who are both vulnerable to fuel poverty and exposed to broader welfare reforms, are the focus of this project report.

Gaps in knowledge and overall research objectives

Very little has been written on how disadvantaged groups engage with retrofit measures. The literature that does exist has identified several key barriers to take up (largely) amongst low income households which are: a lack of tailored information and support (Crosbie and Baker 2010, Mallaband *et al* 2012), relatively high costs associated with measures and lack of access to credit (Defra 2004, EST ND, Gillich and Sunikka-Blank 2013), lack of awareness about free/subsidised schemes, or a lack of trust about them really being cost free (Gilbertson et al 2006), and landlord behaviour (EST 2016, Ambrose 2015, ERP 2016, EP 2016). Research to date is largely quantitative and typically fails to consider household perspectives. Despite this, qualitative evidence is starting to emerge that questions the prevailing policy assumption that a lack of suitable information prevents scheme success, rather than whether schemes are actually delivering the measures that are most suitable for households, in a manner that meets their needs (see for example Mould and Baker, 2017). Our project adds to this emerging debate by considering how households vulnerable to fuel poverty engage with energy efficiency measures, the factors that enable and prevent retrofits from being undertaken, and the particular needs households have during the installation process.

The project uses an energy justice framework. Emerging from theories of social and environmental justice, energy justice is usually conceptualised as three distinct but interrelated forms of inequality: distribution, procedure, and recognition (Sovacool and Dworkin, 2014).

Walker and Day (2012) apply each of these to the issue of fuel poverty, arguing for greater consideration of recognition and procedural issues in order to remedy the distributional inequalities that are thought to be responsible for fuel poverty i.e. low income, high energy costs, and inefficient dwellings. For them, these distributional inequities are compounded – and also potentially ameliorated – by recognition and procedural issues such as energy needs and the ability to exercise legal and political rights. Beginning from the same basic assumption, that meaningful recognition and fair procedures are prerequisites to distributional justice, this project uses theories of justice to consider what makes fuel poor households vulnerable and applies this understanding to the policy challenge of improving their dwellings' energy efficiency.

This project addresses two key gaps in knowledge regarding justice in energy efficiency policy in the UK. First, despite disabled people and low-income families being defined in policy as vulnerable to fuel poverty, there is very little evidence about how the needs of these groups are recognised or incorporated into policy decisions. Second, there is no clear evidence on how energy efficiency policies actually affect these groups, and whether policy outcomes are consistent across the UK. Drawing on the concepts of justice described above, the overarching aim of this project is to investigate the implications of existing domestic energy efficiency policies across the four nations of the UK, and to use cross-national comparisons and lesson-drawing to identify sustainable future policy pathways. Linked to this the project has four key objectives:

1. To compare and contrast how distributional, procedural and recognition justice are conceived and implemented within energy efficiency policies across the UK;
2. To explore how distributional, procedural and recognition justice are operationalised within energy efficiency schemes across the UK;
3. To assess the extent to which energy efficiency policy within the UK sufficiently meets the needs of disabled people and low-income families;
4. To consider what lessons can be drawn for future policy and practice

Developing a theoretical framework and operationalising the research objectives

A conceptual review linking the three forms of justice with both the fuel poverty, disability, and child poverty literatures was conducted and published (see Figure 1). The review identified key gaps in knowledge relating to the two groups, fuel poverty, justice and energy efficiency, and it also allowed specific research questions to be developed. A summary of the key issues identified in the review and resulting research questions is highlighted below.

Figure 1: Conceptual review

'Gillard, R., Snell, C., and Bevan, M. (2017) Advancing an energy justice perspective of fuel poverty: Household vulnerability and domestic retrofit policy in the United Kingdom *Energy Research and Social Science* Volume 29, July 2017, Pages 53-61' and is available: https://www.sciencedirect.com/science/article/pii/S2214629617301202.

Recognition justice

Energy is an integral part of human welfare, but some people need more than others just to have access to the same opportunities and fulfilment (e.g. Snell et al 2013; Extra Costs Commission, 2015). Not taking these needs into account, or misrepresenting them, is a fundamental injustice of recognition, which results in unfair distribution and lack of due process. As McCauley et al (2013) note, 'without recognition of difference, specific needs and vulnerabilities can remain hidden and neglected in the formulation of policy interventions'. It can also lead to stereotyping of the fuel poor, with negative consequences for policy efficacy and households'/communities' experiences (Hards, 2013; Bulkeley & Fuller, 2012). Specifically, recognition injustices arise from both *formal arrangements* (such as policy eligibility criteria) and more *informal practices* (such as community engagement). For example, the diverse needs of disabled people are not adequately reflected in fuel poverty metrics (Snell et al., 2015), and other 'vulnerable groups' report feeling stigmatised by energy saving schemes (Day & Hitchings, 2011; Middlemiss & Gillard, 2015). Within this project the following questions relating to recognition justice were developed and explored (Table 1.1).

Table 1.1: Recognition justice research questions

How are 'vulnerable groups' portrayed?
What is seen as the cause of their vulnerability?
Are they described using pejorative or empowering language[1]?
Are within group differences considered?
What assumptions are made about how they will respond to policies?
Do eligibility criteria cause some people to be missed?
How are energy needs portrayed?
Are different energy needs described as a right or a burden?
Are within group differences considered (e.g. type of disability)?
To what extent do policies seek to meet and safeguard additional/differentiated needs?
Are certain energy needs not considered (e.g. non-heating needs)?
What are policy developers' experiences of engaging with 'vulnerable groups'?
Who engages with households and what are their protocols?
How do they respond to input and feedback?
Do households view the schemes (and their providers) positively or negatively?
Do stakeholder interactions reinforce stereotyped behaviour and beliefs?
Are 'vulnerable groups' views and self-identities respected?

[1] For example, does the portrayal fit with broader framings about 'undeserving poor', or does it draw on the preferred terms of the groups themselves?

Distributive justice

The unequal distribution of energy is central to all definitions of fuel poverty. At the broad level this is represented as a segment of the population that has insufficient energy as a result of low incomes, high prices and inefficient housing. Extending questions of distributive justice reveals a more detailed picture of exactly *who* is affected by *which* of these issues and *what* impacts it has on them (Walker & Day, 2012; Walker et al., 2014; Liddell et al., 2012; Shortt & Rugkåsa, 2007). Key questions arising from the review are outlined in Table 1.2.

Table 1.2: Distributive justice research questions

Who is affected?
Are there differences in terms of who gets what between the nations?
Who is eligible and how are they targeted?
How is the policy funded e.g. by taxpayers or consumers?
What effects are addressed?
Which energy services are affected e.g. heating or other energy consumption?
Is there evidence of a reduction of fuel poverty?
Do households report co-benefits or unintended consequences?
Which causes are addressed?
Which efficiency measures or technologies are included?
Are there links to benefits payments or other policy areas?
Are consumers' tariffs affected?

Procedural justice

Captured by the phrase 'due process', procedural justice refers to the balance of power in decision making, as well as issues of accountability and impartiality (Sovacool, 2014: 208). In the context of fuel poverty and energy efficiency, this raises questions about who is consulted during the policy process, what information about prices and schemes is available, and how any problems with energy services of efficiency schemes can be rectified (Walker and Day 2012). When considering procedural justice in specific policies, social science research offers two important pointers. First, policy participation comes in many forms[2], but what matters most is whether the process affords 'parity' to all contributors and ultimately encourages active, rather than passive, involvement (Arnstein, 1969; Fraser & Honneth, 2003). Second, we should be wary of assuming that more information simply equates to more justice or more effective policies; it is the accessibility, content and usability of information that matters most (Hajer, 2009). Key questions arising from the conceptual review are outlined in Table 1.2.

[2] E.g. the Help to Heat consultation aimed at experts or Open Policymaking aimed at citizens and stakeholders

Table 1.2: Procedural justice research questions

Who was included in policy development? Who was consulted? How were those consulted identified and included? Which advocacy groups or NGOs were involved? Were some voices not heard? Could they express themselves on their own terms? Were interactions with stakeholders fair and respectful?
How was the policy developed? Who made the final decisions? Which views most clearly influenced the outcome?
What information was involved? Were alternatives fully discussed? How was information presented? Was it presented clearly and comprehended fully by stakeholders? When was it used and by whom? Were there any biases or omissions?
How was the policy implemented? Are households given active roles in the policy or are they end-of-the-line recipients? Can certain aspects be challenged or changed? How was feedback gathered and responded to? Were any changes made over time or 'on-the-ground'?

Report Structure

Following on from this chapter, the report outlines the project methodology (Chapter 2). Three empirical chapters then follow. Chapter 3 considers the design and implementation of energy efficiency policy across the UK. The Chapter draws on existing literature and data (gathered as part of the policy review conducted in Work Package 1), and then draws on the empirical data collected through the WP1 and WP2 stakeholder interviews. Issues of procedural and recognition justice are explicitly considered with reference to both the design and implementation of UK policies. The Chapter also provides contextual information about policy implementation across the four countries.

Chapter 4 focuses largely on the data from the Household Interviews, identifying what the energy needs of low income families and disabled people are, and how the households in our sample engage with information, advice and support around energy efficiency. Where appropriate additional data from the WP2 interviews is also discussed, as is academic knowledge on issues around household needs, impacts of fuel poverty, and engagement with energy efficiency measures.

Chapter 5 focuses on the impact of energy efficiency policies in the UK, especially amongst low income families and disabled people. Empirical findings from across the work packages are used to highlight potential aspects of distributive (in) justice, identifying for example, where households in need are not able to access support. Within the second section of this Chapter issues of recognition justice are discussed in detail, considering, with reference to existing literature and the household interviews, how the energy needs of low income families and disabled people needs might be better understood and addressed in policy making and implementation.

Chapter 6 provides a synthesis of the research findings, outlining five headline findings and associated policy recommendations. Chapter 7 concludes with, a series of suggested 'Policy Pathways to Justice in Energy Efficiency'.

Chapter Two: Methodology

Research design

A mixed methods approach was originally chosen with the rationale that questions of distributive justice would be best addressed via quantitative data analysis of levels of fuel poverty amongst the two groups of interest, numbers of installations, and eligibility to measures and so on. Whilst an initial analysis was conducted with English data via the English Housing Survey (EHS), following an investigation into fuel poverty datasets across the UK it was established that no statistics exist that would allow cross-country comparison. Given this, an entirely qualitative approach was employed. The empirical phase of this research was split into three work packages, Work Package 1 (WP1), Work Package 2 (WP2), and Work Package 3 (WP3). WP1 was led by ACE, WP2 and WP3 by the University of York.

Work Package One

WP1 consisted of two pieces of research that focused on the development of energy efficiency policies across the UK. The key questions addressed, and their relationship with the three concepts of energy justice, and the overall research objectives are outlined in Table 2.1.

Table 2.1 Key questions about policy development and justice addressed by WP1

Distributive	Recognition	Procedural
Who is affected? Who is eligible for help and how are they targeted? How is the policy funded e.g. by taxpayers or consumers? Are there differences between the nations?	How are 'vulnerable groups' portrayed by policymakers? What is seen as the cause of their vulnerability? Are they described using pejorative or empowering language[3]? Are within group differences considered? What assumptions are made about how they will respond to policies? Do eligibility criteria cause some people to be missed?	How was the policy developed? How are vulnerable groups identified and included? Who was consulted and who made the final decisions? Which views most clearly influenced the outcome? Did policymakers struggle to include certain voices? Were interactions with fair and respectful?
Which causes are addressed?	How are 'vulnerable groups' energy needs portrayed by policymakers?	What information was involved during consultation processes?

[3] For example, does the portrayal fit with broader framings about 'undeserving poor', or does it draw on the preferred terms of the groups themselves?

Which efficiency measures or technologies are included? Are there links to benefits payments or other policy areas? Are consumers' tariffs affected?	Are within group differences considered (e.g. type of disability)? To what extent do policies seek to meet and safeguard additional/differentiated needs? Are certain energy needs not considered (e.g. non-heating needs)?	How was information presented? Was it presented clearly and comprehended fully by stakeholders? When was it used and by whom? Were there any biases or omissions?
What effects are addressed? Which energy services are affected e.g. heating or electricity? Is there evidence of a reduction of fuel poverty?	How are 'vulnerable groups' included in policy development? Which advocacy groups or NGOs are involved? Are 'vulnerable groups' views and self-identities respected? Do interactions with vulnerable groups reinforce stereotyped behaviour and beliefs? Are some voices not heard?	How was the policy implemented? Are households given active roles in the policy or are they just end-of-the-line recipients? Can certain aspects be challenged or changed? How was feedback gathered and responded to? Were any changes made over time or 'on-the-ground'?

These questions were addressed using two methods. The first was a policy review that traced the main fuel poverty and energy efficiency policies across the UK over the past two decades. The review identified how eligibility for fuel poverty support has changed over time, the main types of policy, and levels of funding. Findings from this review are summarised in Chapter 3. The second aspect of WP1 consisted of empirical research. Between January and February 2017, 18 key stakeholders working at the national policy level across the UK were interviewed (see Table 2.2). The sample was made up of stakeholders who work/have worked: on policy development at the GB level; on policy development in Northern Ireland, Scotland and Wales; for national level organisations that represent low-income families and disabled people; for local authorities; within the energy industry, and within the field of fuel poverty. Thus, some interviews focused exclusively on one nation – for example Scotland, whereas others included a discussion of several nations (for example, when respondents had a remit that covered the UK).

Table 2.2 WP1 Interviewees

Code	Organisation	Code	Organisation
P1	Local authority	P10	Energy Industry
P2	NGO	P11	NGO
P3	NGO	P12	Energy Industry
P4	Government	P13	NGO
P5	Public sector	P14	Local authority
P6	NGO	P15	Government
P7	Public sector	P16	Academia
P8	NGO	P17	NGO
P9	NGO	P18	NGO

Semi-structured interviews were conducted and these investigated issues of justice at the national policy level (see Table 2.1). Questions focused on how and why policies had been developed; how inclusive consultation processes have been; how effective policies were at reaching vulnerable groups; why certain groups have received more attention than others and whether there were particular groups who had missed out (a topic guide is available in Appendix 1). 14 interviews were recorded and transcribed, 4 were not recorded and notes were made instead.

A coding framework was developed collaboratively by the research team members. This was based partly on a number of *a priori* codes based on the project research questions (e.g. around recognition justice) and also on the basis of emerging themes (e.g. around the impact of carbon targets) following an initial read through the interview transcripts by two researchers. Once the coding framework was developed this was applied to the data and initial findings were written up thematically into a draft report.

Work Package Two

WP2 aimed to understand household needs and perspectives (in terms of both energy and having energy efficiency measures installed); how the main energy efficiency policies have been implemented, and who has benefited from this (again, linked back to the project research questions outlined in Chapter 1). Operationalised research questions that formed the basis of the topic guides are outlined in Table 2.3.

Table 2.3 Key questions about policy implementation and justice addressed by WP2

	Asked to →	Households	Stakeholders
Justice dimensions	Recognition	How do households engage with energy? What do households need in order to engage with energy efficiency schemes? Do schemes meet needs and expectations?	How are vulnerable households identified and approached? To what extent are household needs understood during policy implementation? Does policy allow different needs to be addressed? Are households' needs and expectations considered and/or responded to?
	Procedure	What information was available was it useful? How easy / difficult is it to gain access to, and navigate through, schemes? Is there scope for contesting decisions or seeking redress?	How are households' needs canvassed, and how are these fed into scheme implementation? How are national policy targets and guidelines operationalised in schemes? Which governance actors and arrangements work best and why? What are the biggest barriers to connecting households with schemes and how are they overcome?
	Distribution	What schemes are they aware of? What are their reasons for (not) accessing schemes? What are the effects of (not) accessing schemes?	Which households are prioritised and why? Which households do / don't access schemes and why? And what are the effects of this? How has scheme eligibility and reach changed over time and what has driven this e.g. funding, policy priorities, demand?

Two sets of qualitative interviews were undertaken, the first with 60 practitioners involved in the delivery of energy efficiency policies, and the second with 48 households who were either eligible

for, or who had received, energy efficiency measures. The initial proposed approach was to interview practitioners involved in delivering specific schemes and the households receiving associated measures, however, this was discounted on both methodological and practical grounds. From a methodological point of view, it was decided that specific examples such as this would lead to a number of very specific case studies that would be too bounded in their context to address the relatively broad project research questions (Yin 2014). From a practical point of view data protection regulations were also likely to have made this approach untenable. Instead a broader approach was taken that involved interviews with a range of practitioners involved in a variety of schemes across the UK, and focused on general household experiences relating to energy efficiency.

Practitioner/stakeholder interviews

Interviews were carried out between October 2017 and February 2018, with individuals involved in the implementation of the main UK energy efficiency policies (outlined in Chapter 3). Interviewees were initially chosen on the basis of theoretical sampling - for their ability to provide insights relating to the research question(s). As such, interviews were carried out in waves, using preliminary findings and snowball recruitment to fill gaps and address key issues as the research progressed. An outline of the sample is provided in Table 2.4.

Table 2.4 WP2 Practitioner Interviewees

Code	Description	Code	Description
1	National charity	31	Energy company
2	National charity	32	Local government
3	Academic	33	Local scheme agent
4	National energy efficiency company	34	Local scheme agent
5	National energy efficiency company	35	Local scheme agent
6	National energy efficiency company	36	Local scheme agent
7	National charity	37	Local government
8	National charity	38	Energy Company
9	Energy Company	39	Managing agent
10	Local scheme agent	40	National government
11	Local government	41	Managing agent

12	Local branch of national charity	42	Charity
13	Local scheme agent	43	Government
14	Local government	44	Charity
15	Local government	45	NGO
16	Local government	46	National NGO
17	Managing agent	47	National NGO
18	Regional scheme agent	48	National scheme agent
19	Regional scheme agent	49	National NGO
20	National body for local government	50	National NGO
21	Energy company	51	National NGO
22	Regional scheme agent	52	National charity
23	National managing agent	53	National charity
24	Local government	54	Local government
25	Local government	55	Local scheme agent
26	Local government	56	Housing association
27	Local government	57	Local government
28	Managing agent	58	Industry
29	Local scheme agent	59	Managing agent
30	Local scheme agent	60	Energy Company

Data analysis

An analysis framework was developed based on *a priori* coding by three project team members. Data analysis was conducted within Nvivo by one researcher. Where new themes and unexpected points emerged new, inductive codes, were created.

Household interviews

Households interviews were undertaken across the UK between November 2017 and May 2018 (44 households were recruited through a market research company on behalf of the University of

York, the other four through a national charity). Households were purposively sampled using the criteria outlined in Table 2.5.

Table 2.5 Sample frame

Criteria	Purpose
The presence of a household member with a disability or long-term illness (self-defined)	To understand further how low-income families and disabled people engage with energy
AND/OR Household is on a low income as defined by ECO2t[4] and the presence of children under 16	
AND The household has received energy efficiency support (in the form of advice, or has been offered measures, or has received measures) OR The household has not sought out/received energy efficiency advice or measures	To understand how low-income families and disabled people engage with energy efficiency measures and whether current policy recognises and responds to their needs

Whilst an 'ideal' sample frame was agreed with the market research company, recruitment was difficult, and in line with the well documented challenges associated with recruiting 'hard to reach' groups (Shaghaghi et al, 2011, Abrams, 2010). This led to a loosening of the initial recruitment criteria, and ultimately greatest priority was given to recruiting households containing people with disabilities or on low incomes with children. As a result a higher proportion of households in the Social Rented Sector were recruited than initially planned.

Four households were recruited through a Disability focused NGO. Attempts were made to recruit households through a child poverty focused NGO, however, this was unsuccessful. The four households recruited through the NGO actively responded to the call for research participants (rather than being approached like the other 44). These respondents defined themselves or a member of the household as having a disability, being in the private housing sector, and having received energy efficiency measures. It is possible that these four respondents were different to the other 44 given that they actively decided to take part in the research (there is some suggestion that this form of recruitment can lead to the recruitment of individuals with stronger viewpoints or particular agendas – see Hamilton and Bowers, 2006), however, no substantive differences were apparent in the interview transcripts.

Thirty six interviews were initially conducted, and following an analysis of the data a further 12 participants were recruited through the market research company. This second round of interviews was conducted for two reasons – firstly, a slight under representation of people living

[4] This comprises income from all sources, such as net earnings (after tax), income from savings and investments, pensions, all benefits (including housing benefit), and net council tax payments:

within the private rented sector (PRS) in the initial dataset, and secondly in order to test the typology developed during the data analysis (see Figure 4.1). The sample is presented in Table 2.6.

Table 2.6 Household interviews

Code	Country	Group	Tenure current/previous[5]	Recruitment[6]
H13	England	Disability	SR	NGO
H25	England	Family	OO/PRS	MR
H26	England	Family	SR	MR
H27	England	Disability	SR	MR
H28	England	Disability	OO	NGO
H30	England	Disability	PRS	MR
H31	England	Disability	OO	MR
H32	England	Family	SR	MR
H33	England	Disability	OO	MR
H34	England	Family	SR	MR
H41	England	Family	PRS	MR
H42	England	Family	OO	MR
H45	England	Disabled	OO	MR
H47	England	Disabled	PRS	MR
H48	England	Disabled	OO	NGO
H1	Northern Ireland	Family	OO	MR
H2	Northern Ireland	Disability	SR	MR
H3	Northern Ireland	Family	PRS	MR
H4	Northern Ireland	Family	OO	MR
H11	Northern Ireland	Family	OO	MR

[5] SR = Social Rented; OO = Owner Occupier; PRS = Private Rented Sector

[6] MR = Market Research Company; NGO = Disability Charity

H12	Northern Ireland	Disability	SR	MR
H14	Northern Ireland	Disability	SR	MR
H36	Northern Ireland	Disability	OO	MR
H5	Scotland	Disability	SR	MR
H8	Scotland	Family	SR	MR
H10	Scotland	Disability	OO	MR
H17	Scotland	Disability	SR	MR
H19	Scotland	Disability	OO	MR
H22	Scotland	Disability	OO	NGO
H29	Scotland	Disability	OO	NGO
H35	Scotland	Family	SR	MR
H37	Scotland	Family	OO/PRS in England	MR
H39	Scotland	Family	OO	MR
H6	Wales	Disability	SR	MR
H7	Wales	Disability	OO	MR
H9	Wales	Disability	SR	MR
H20	Wales	Family	SR	MR
H21	Wales	Disability	PRS	MR
H23	Wales	Family	SR	MR
H24	Wales	Disability	SR	MR
H38	Wales	Family	OO	MR
H40	Wales	Disability	PRS	MR
H43	Wales	Disability	OO	MR
H44	Wales	Disability	PRS	MR
H46	Wales	Family	PRS	MR
H50	Wales	Family	OO	MR
H51	Wales	Family	OO	MR

Semi-structured telephone interviews were conducted with all participants. The interviews were undertaken by two researchers and typically lasted 30 minutes. Participants were given £20 as a thank you for their participation. Questions were asked about four key areas (a full interview script is in Appendix 1):

1. Contextual information – household composition, type of building, type of heating, payment method for energy
2. Household energy use – any specific issues around disability/children, extra costs associated with situation
3. Who the participant would go to for help and who they wouldn't
4. Experience of engaging with energy efficiency schemes – how found out about it, who helped, what was received, how did the installation go, what worked/what didn't

Interviews with households that had not received measures focused on the first three points and also included a discussion around the barriers that prevented interviewees from engaging with energy efficiency.

Data Analysis

One researcher developed and implemented the coding framework for the first 36 interviews, a second researcher coded the second wave of 12 interviews. Unlike the other two sets of interviews, analysis of these was inductive in nature with the aim of capturing the range of household experiences rather than looking for specific elements within the data. An initial inductive analysis of the interview transcripts suggested three main themes based around the interview questions: 1) patterns of energy use; 2) accessing support; and 3) experiences of having retrofit measures installed. Subsequent data analysis focused on these three themes, with the second and third themes being used to describe the 'customer journey' of vulnerable households. The customer journey is a helpful framework given that it is described in ideal terms in most policy documentation, usually in a linear manner. The main elements of the customer journey were used to structure the remaining findings from information, decision, installation through to aftercare.

Work Package Three

WP3 consolidated the research findings, bringing together the findings from WP1 and WP2. Two workshops were held, the first in June 2018 with 28 practitioners (including local authorities, housing associations, installers etc.), and the second in July 2018 with 10 stakeholders working at the national level (including government Departments, national charities, and representatives from the energy sector). The majority of those invited to the two events had taken part in the WP1/WP2 interviews. The workshops were held for two reasons, firstly to 'sense check' the research findings through a process of respondent and expert validation, and secondly, to provide early research findings to those working in the field. Whilst no substantial criticisms of the research findings were made at the workshops they allowed some of the key policy implications and recommendations to be strengthened and made more relevant to the policy area. The

workshops also enabled a clearer indication of how the final practitioner guides might be developed in a way most relevant to those working in delivering energy efficiency measures.

Ethical approval and limitations of the data

Full ethical approval was given by the Department of Social Policy and Social Work's ethics committee at the University of York on 8/9/2016. An information sheet was sent to participants. All interviewees were asked for their consent to take part in an interview, for the interview to be recorded, and whether an anonymised version of their data could be submitted to the UK data archive. For some stakeholders working at the national policy level the risk of their contribution being identifiable (given the limited number of people involved in the policy field) was raised and again, consent was sought on this basis. All interviewees were given research team contact details, were told how they could withdraw from the research, and information about data storage and archive. Further a data management plan setting out how data would be stored securely and in line with legal, institutional and ethical requirements was developed using University of York protocols[7].

No notable issues occurred during the data collection other than a request not to record the interview by one householder (however, the interviewee was still prepared to go ahead with the interview). For practical reasons it was not possible to record all WP1 and WP2 policy/practitioner interviews, however, extensive notes were taken and were used within the data analysis.

As with other qualitative data collection and analysis there was no intention of generalising the findings to all vulnerable households or to other countries beyond the UK. Instead, the authors are aiming for theoretical generalisation – that is to compare these findings with existing literature, and where possible to extend this. Furthermore, it is essential to note that the needs of vulnerable households are heterogonous and that it is not appropriate to use this dataset to make generalisations about the experiences of people with particular impairments or conditions, or the routines and practices of low income families.

[7] https://www.york.ac.uk/library/info-for/researchers/data/

Chapter Three: Addressing energy efficiency across the UK – Policy analysis

Introduction

There are a number of ways to fund energy efficiency interventions to support households vulnerable to fuel poverty – this can be through the application of levies on energy bills, as seen with supplier obligations; through general taxation; and in some instances loans. Scotland has the widest range of publicly funded energy efficiency programmes followed by Northern Ireland and Wales, whilst England currently has none. Given that the main UK approach to energy efficiency is via supplier obligations, a brief background to these is identified below. Following this, the most recent 'flagship' schemes of each nation are identified and discussed. Given administrative differences between Great Britain and Northern Ireland, the latter country is discussed separately. This chapter starts by outlining the key policies, describing how they have developed. It then turns to the WP1 and WP2 interview data to consider how these have been implemented.

A background to supplier obligations

Supplier obligations, administered and enforced by the Office of Gas and Electricity Markets (OFGEM) have been in place since 1994 following the liberalisation of the energy market. The scale of supplier obligations has dramatically increased over time, and as such they have become the principal instrument to reduce carbon emissions in the UK's housing stock and have delivered a range of (usually) cheap-to-deliver, easy to install measures such as cavity wall insulation, loft insulation and boiler installations. The underlying rationale is that private companies will pursue a least-cost pathway to achieving their targets and therefore policy goals will be achieved in the most cost-effective way. Usually companies can undertake the work themselves, subcontract it, or trade it through a brokerage system (BEIS 2018). As energy companies must pay for the work to be carried out they are allowed to pass this 'running cost' on to consumers.

Early programmes such as Energy Efficiency Standards of Performance (EESoP) 1 and 2 obliged energy suppliers to spend a certain amount of money on energy efficiency measures, however, later obligations only provided indicative figures that were non-binding and instead focused on lifetime savings of carbon dioxide (CO_2). A significant change in targeting occurred with the introduction of the Carbon Emissions Reduction Target (CERT) and Community Energy Saving Programme (CESP) in 2008 and 2009 respectively where a greater emphasis was placed on targeting households in need (a change that continues into the current scheme ECO). Whilst, as with previous schemes, the CERT programme's rationale was focused on carbon abatement in housing, government sought to develop obligations that required suppliers to focus on particular households in greatest need. Within CERT Suppliers were required to focus at least 40 per cent of the carbon savings of the obligation on a priority group of households in receipt of certain benefits – the Priority Group (PG) and Super Priority Group (SPG). This policy intervention was to abate distributional concerns about regressivity and to tackle fuel poverty amongst vulnerable households. Both PG and SPG eligibility criteria noted the importance of supporting households with children, disabled people, or those with long term health conditions through their eligibility

criteria. CESP was introduced in 2009 and it sought to carry out deep retrofits and involve local authorities and communities in delivery. CESP was designed to promote a 'whole house' approach (suppliers obtained additional carbon credits for installing multiple measures in households) and to treat as many properties as possible in defined geographical areas selected using the Income Domain of the Indices of Multiple Deprivation (IMD) in England, Scotland and Wales, rather than basing eligibility on demographic criteria. Households in the 10 per cent most deprived LSOAs were targeted. For a full academic review of previous UK energy efficiency schemes see Eyre (2014).

'Flagship' energy efficiency policies reviewed by this project

There has been a downward trend in levels of funding for energy efficiency policies in England and Wales and Northern Ireland, but an increase in Scotland. Despite the reduction in funding for ECO in Great Britain, Government rhetoric places energy efficiency firmly within the Clean Growth Strategy (BEIS, 2017a), and has called for evidence on ways to increase market activity in this sector (BEIS, 2017b). The most recent flagship domestic energy efficiency policies (at the time of writing in 2018) are summarised in table 3.1

Table 3.1 Flagship energy efficiency policies

	Policy	Focus	Funding[8]	Scope
England/Great Britain	Energy Company Obligation Carbon Emissions Reduction Obligation	Carbon reduction in hard to treat properties	£380m	All households, all insulation measures
	Energy Company Obligation Carbon Saving Community Obligation	Low-income and hard to reach areas (discontinued in 2017)	£190m	Poorest 25% LSOAs, 15% of which should be rural, all measures
	Energy Company Obligation Home Heating Cost Reduction Obligation	Low-income households, emphasis on reducing bills	£350m	Households in receipt of certain benefits AKA 'Affordable Warmth group', extra incentives for off-grid houses

[8] Most recent annual figure

Scotland	Home Energy Efficiency Programmes Area-Based Scheme	Fuel poor, especially hard to treat homes, and draw in ECO funding	£50m	Fuel poor households, mostly solid wall insulation
	Home Energy Efficiency Programmes Warmer Homes Scotland Scheme	Target the most vulnerable households	£19m	Households in receipt of certain benefits and an EPC <64, all measures incl. micro-generation for off-grid
	Home Energy Efficiency Programmes Loan scheme	Incentivise more expensive retrofit measures	£24m	Owner occupiers and private & social landlords, various limits on amount available
Wales	Warm Homes Programme Arbed	Street-by-street and 'whole house' principles	£19m	All measures, social housing residents, but prioritising Strategic Regeneration Areas
	Warm Homes Programme Nest	Inefficient homes and vulnerable households, accompanied by advice service and BECs	£25m (19.5m + 3.9m)	All measures, households on means tested benefits living in E, F or G rated properties
N. Ireland	Affordable Warmth + means-tested grant for replacing boilers over 15yrs old in owner occupied housing	Fuel poor households	Unclear	All measures (in priority order) under £10k, all households under £20k income. PRS or Owner Occupier. Under 40k for boiler scheme
	Northern Ireland Sustainable Energy Programme	Households not eligible for Affordable Warmth	£7m	80% targeted at low-income households, private tenure only

Energy Company Obligation (ECO)

The Energy Company Obligation (ECO) was introduced in Great Britain in 2013, replacing CERT and CESP. It is a market-based policy instrument backed by a state determined target and threat of economic sanctions for non-compliance. Energy companies are given a set of targets for retrofitting domestic dwellings that is proportionate to their share of the market. The targets are

set and monitored by the state regulator Ofgem. Performance is typically measured using modelled energy or carbon emissions savings and the Energy Performance Certificate (EPC) system i.e. showing how many homes have been improved and by how much. The first phase of ECO, known as ECO1, ran from January 2013 to March 2015 and initially had a budget of £1.3billion per year[9]. The programme was spilt into different categories:

- The Home Heating Cost Reduction Obligation (HHCRO) (also referred to as Affordable Warmth)
- Carbon Savings Communities Obligation (CSCO)
- Carbon Emissions Reduction Obligation (CERO)

Both HHCRO and CSCO were designed to support lower income and vulnerable households. HHCRO provided insulation and heating improvements to qualifying low-income and vulnerable households in private rented or owner-occupied properties. CSCO provided insulation measures and connections to district heating schemes to people living in the bottom 25 per cent of the UK's most deprived areas and bottom 25 per cent of rural areas by income. CSCO also supported qualifying low-income households in all areas that were designated as rural and was available to households in all tenures. CERO was focused on hard-to-treat properties and provided funding for wall (particularly solid wall) and roof insulation measures and connections to district heating schemes. Energy suppliers were encouraged to install primary and secondary measures and it was available to all households in any housing tenure. Both HHCRO and CSCO explicitly aimed to support households with children or those with disabled people/long term health conditions, although with CSCO this was only in rural areas. Eligibility for CERO on the other hand related solely to physical build issues. The UK Government announced changes to ECO within the Autumn Statement 2013, reducing the overall annual budget to £920million. ECO2 launched on 1 April 2015 and ended on 31 March 2017.

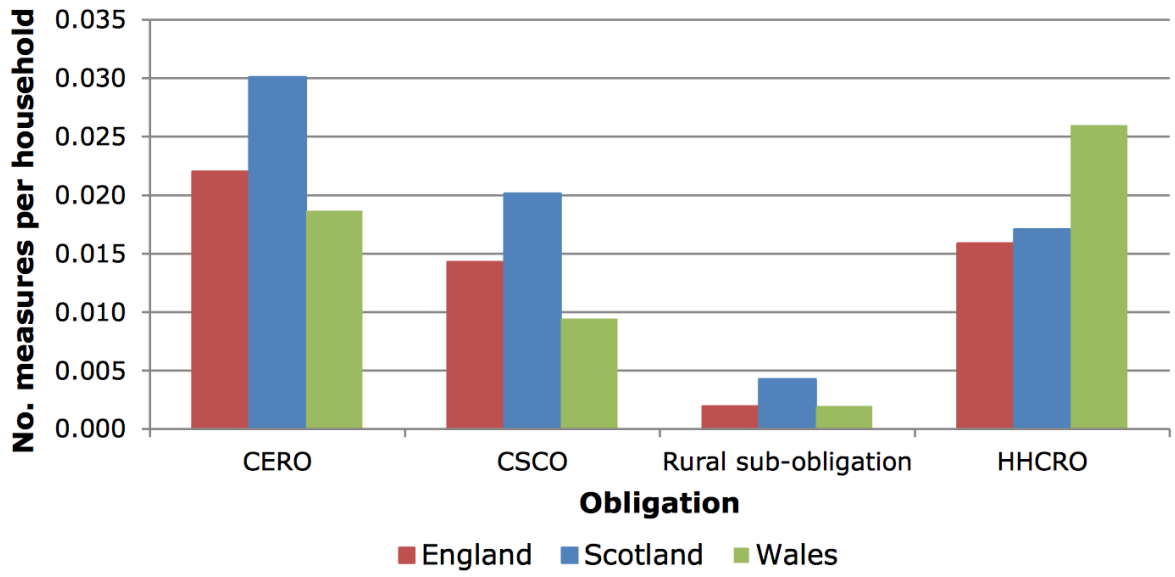
By 2015, 1.5m houses had been retrofitted, but only 708,000 of those were low-income (Hough 2017). This was partially due to the weighting of the three sub-policies' targets and funding, as well as variation in its implementation (Ofgem, 2015). In response to this, ECO'S transition period (known as ECO2t) focused almost exclusively on the 'Affordable Warmth' group (HHCRO) (DECC, 2016). Given this, whilst ECO2t continued HHCRO and CERO, CSCO was scrapped. ECO2t also introduced 'ECO Flex', which allowed suppliers to achieve up to 10 per cent of their Affordable Warmth obligation (estimated at a value of approximately £70m over 18 months) by installing measures in households declared eligible by local authorities (BEIS 2017c). Beyond ECO2t, the UK government has confirmed that a supplier obligation will run until 2021-22 at the very least. Whilst at the time of writing the exact details of the new obligation are unclear, it is likely that ECO3 will focus almost entirely on affordable warmth.

Both Scotland and Wales have national frameworks governing local delivery of energy efficiency programmes and these are designed to lever in funding from other sources, such as ECO. Ofgem's

[9] the funding and focus of ECO has been repeated altered, being reduced within the 2013 Autumn statement to £920, with further reductions over the lifetime of the various ECO schemes, at the time of writing the cost of ECO2t is approximately £620m p/a see Citizens Advice 2018

Final Report on ECO1 (Ofgem 2015) suggests that this match funding has resulted in greater ECO funding being drawn down in Scotland and Wales, compared to England, as indicated in Figure 3.1.

Figure 3.1 ECO measures per household by country



Source: Ofgem (2015)

Scotland

Scotland's Home Energy Efficiency Programmes (2013-) are state funded and have three distinct components: grants via local authorities, subsidies for vulnerable households, and a loan scheme. The Warmer Homes Scotland Scheme (HEEPS:WHS) targets the most vulnerable households. The scope of its eligibility criteria are comparable with other similar policies (e.g. the Affordable Warmth group of ECO in England). Warmer Homes Scotland has a central managing agent, which provides oversight and linkages between governance levels.

The Area-Based Schemes (HEEPS:ABS) distributes funds proportionately among local authorities (Scottish Government 2017). The programme seeks to reduce fuel poverty and carbon emissions, lever in ECO funding and to support the local economy and sustainable local economic development. The programme is made up of two distinct parts:

- The Core Allocation Programme (CAP).
- Proposals for Additional Funding (PAF) (removed in 2016/2017).

All councils in Scotland have a core allocation based on a needs-based assessment, while enabling the Scottish Government to provide additional funds to councils to enable delivery of larger scale and/or more ambitious projects. Eligibility criteria applied to both CAP and PAF proposals include:

- Targeting fuel poor areas beginning with those households in most need of assistance.

- Private sector properties (including private rented sector properties, and those in mixed tenure blocks).
- Where loft and cavity wall insulation measures are being offered, the guidance stated that support be restricted to houses in council tax bands A-C in order to maintain a focus on the fuel poor.
- A cap of £6,500 per property operates unless there are 'exceptional circumstances'

The Home Energy Efficiency Programmes for Scotland (HEEPS) is a loan scheme which provides interest-free, unsecured loans for installing a variety of measures such as insulation, double glazing or a new boiler. The loan scheme is open to all owner-occupiers and registered private sector landlords in Scotland (limited to 5 properties). Loan values and repayment periods vary depending on the technology. Loan rates are calculated as 1 per cent plus the highest base rate in force at a selection of banks 28 days prior to entering into the loan agreement. Cashback grants have also been made available for a limited period of time.

Wales

Arbed (2010-2015) was an area-based grant scheme funded by the Welsh Government and the EU European Regional Development Fund (ERDF). At the time of writing, a number of projects remain active, and the Welsh Government has agreed to continue its funding for as long as possible despite the fact the EU funding will cease when the UK leaves the EU. Arbed is governed by area-based eligibility criteria intended to benefit deprived regions. Implementation is managed by Local Authorities and by private contractors (Wilmott Dixon in the north and Melin Homes in the south).

Nest (2011-present) operates in much the same way as the affordability-based policies in England and Scotland and is funded through the Welsh Government, with an additional 3.9m of match funds from ECO. Nest provides an energy advice service to any householder living in Wales via a helpline, and it also provides free or subsidised retrofit measures to households on certain benefits or low-income thresholds (Nest 2017). At the time of this research: '*British Gas was the scheme manager for Nest, with The Energy Saving Trust acting as a sub-contractor and providing the front end service. Small and medium sized enterprises across Wales are sub-contracted by Nest to install agreed energy efficiency measures at domestic properties. The Nest scheme does not cold call households and all marketing materials carry the 'Nest' and Welsh Government logos'* (Welsh Government 2018).

Northern Ireland

Energy efficiency and fuel poverty policy in Northern Ireland remains distinct from the rest of the UK, and is regulated through the Northern Ireland Utility Regulator rather than Ofgem. Despite this, policy has developed in a similar way to Great Britain.

The Energy Efficiency Levy (EEL) ran from 1997 until 2010. The EEL was originally introduced to implement energy efficiency schemes for domestic consumers, with the aim of reducing carbon emissions. As the importance of tackling fuel poverty moved up the political agenda, the majority

of levy funding (80 per cent) was targeted at the alleviation of fuel poverty. The remaining 20 per cent was available for energy efficiency and emission reduction projects in the domestic and business sectors. While suppliers had to propose projects which predominantly focused on the priority group (e.g. elderly, disabled people, or with child under 16), programmes changed each year, the Energy Saving Trust had oversight of the programme to ensure that support would reach priority groups. Following a consultation, the EEL was renamed the Northern Ireland Sustainable Energy Programme (NISEP) which continues to run at the time of writing. The name change sought to reflect the contribution which the programme made to both social and environmental policy goals. The main features of the EEL remained, although additional innovative and renewable technologies were included in the programme. The scheme is implemented by energy companies, who provide a list of grants that can help with the cost of insulation, new heating boilers and controls, and energy efficient lighting. Each grant has its own eligibility criteria and households need to be on a low income to qualify for many of them.

The Affordable Warmth Scheme is funded by the Department for Social Development and aims to improve the domestic energy efficiency of households living in severe fuel poverty. The scheme is targeted at households in the private sector (owner occupier or private rented) that have a total gross annual household income of less than £20,000. Areas deemed most at risk are identified and contacted by local authorities. Households are then screened for eligibility (based on income and tenure). For households in the PRS a 50 per cent landlord contribution is required (Housing Executive 2018). The maximum grant award payable is £7,500, unless a property has been selected for solid wall insulation. If solid wall insulation is approved, the grant limit rises to £10,000. In addition to this a boiler replacement scheme operates, Owner Occupiers earning less than £40,000 may apply and the value of the grant depends in part on household income and also on the nature of the work conducted.

Understanding the development of domestic energy efficiency policies and the inclusion of vulnerable groups

Recognising the needs of low income families and disabled people in policy

Throughout the interviews in both work packages there was consensus that the needs of disabled people and low income families were not well understood at the policymaking level, and that this had an impact on both policy design and implementation [WP1 interviews 4, 8, 11, 9, 14]. Particular attention was paid by Work Package One interviewees to the representation of disabled people's needs within existing policy:

> *'I don't think the energy needs of disabled people are well understood at all'* [WP1 Interview 8]
>
> *'For someone who is disabled...they wouldn't necessarily always be captured within existing criteria in terms of policy around vulnerable customers'* [WP1 Interview 9]

Furthermore, whilst mental health has been the focus of recent attention within the sector (Ramone et al, 2017), interviewees repeatedly raised the point that this was an area with a limited evidence base, that policymakers poorly understood [WP1 Interview 5].

One possible explanation given for this lack of knowledge and recognition of disabled people and low income families was related to perceptions of who *should* be helped. There was a suggestion that highly politicised notions of 'deserving' and 'undeserving' fuel poor groups pervaded policy design [P1 interviews 8, 1, 10]. Some interviewees commented that the political climate created a reluctance to be seen to support perceived 'undeserving', although no specific comment was made about which groups might be perceived in this way [WP1 interview 8].

Several respondents also pointed out that in England until the Hills review of fuel poverty in 2013 there was an emphasis on pensioners in both measures of fuel poverty and programmes to alleviate it:

> *'It is only since Hills that we have downgraded pensioners and upgraded households with families…so you can't say we should have targeted families more without saying we should have had a different approach to the definitions earlier' [WP1 Interview 9]*

Whilst the effect of the Hills Review and the adoption of a new measure has '*removed a lot of elderly people from the definition of fuel poverty'* [WP1 Interview 1]; '*demonstrated that families with kids are more likely to be fuel poor* [WP1 Interview 11], and '*shone a light on the huge gap around off-gas households*' [WP Interview 13] this legacy is still evident within policy implementation. Furthermore, interviewees argued that the emphasis on older people has been reinforced by this group being the easiest to find, largely as a result of available data [WP1 interviews 8, 1, 10]. In the three other nations there has been a shift in rhetoric around who should be helped, but interviewees questioned the extent to which this was translated into policy action.

Including the voices of low income families and disabled people in policy

Within WP1 and WP2 participants were asked about and commented on the inclusion of disabled people and low-income families in the policymaking process. Overall there was a view that organisations representing disabled people and children have had a limited presence in British (i.e. ECO) policymaking [WP1 Interviews 3, 10, 5, 7, 11], with the consultation process described by one respondent as 'haphazard'.

Several explanations were given for this lack of representation. Amongst the energy sector interviews it was suggested by some respondents that disabled people were not recognised as an important group to engage with [WP1 interviews 3, 10, 11]. Conversely, within the interviews conducted with those working with disabled people there was the suggestion that energy was not necessarily regarded as a priority. Indeed, Work Package One interviewees named various NGOs representing the energy needs of low-income families, but identified none specifically representing the needs of disabled people. Moreover, given the diversity and often small scale of organisations working to support disabled people, it was suggested that beyond London there is not the critical mass to enable engagement with consultations [WP1 interview 8].

More active engagement was described in Scotland, Wales and Northern Ireland [WP1 interviews 2, 3, 6, 15, 17]. In Wales, roundtable discussions were held with key stakeholders working in both fuel poverty and with vulnerable groups alongside formal written submissions. In Scotland, fuel poverty forums and expert working groups played a role in shaping policy, running pilots, and evaluating policy. In Northern Ireland, interviewees described how responses to consultations had

actively shaped policy. The existence of advocacy groups and coalitions such as the Fuel Poverty Coalitions in Northern Ireland and Wales was described as important for keeping fuel poverty on the political agenda and protecting the interests of vulnerable groups [WP2 interviews 4, 5, 6, 43]. For instance, the coalition in Northern Ireland was largely seen as responsible for ensuring the continuation of the NISEP scheme [WP2 interview 43].

Advocacy, particularly involving disabled people's groups and children's charities, was reported as having mixed levels of impact [WP1 interviews 1, 14; WP2 interviews 23, 28, 4, 5, 6, 43, 53, 7, 8, 9] and group-specific organisations reported mixed levels of success and engagement with policymakers [WP2 interviews 23, 28, 4, 5, 6, 43, 53, 7, 8, 9]. Large coalitions and groups focusing on fuel poverty in general found that they were mostly engaged in trying to keep the issue on the political agenda, reiterating well-rehearsed arguments and evidence, but sometimes pursuing new collaborations or avenues such as focusing on health sector issues. In England, working with scheme providers was regarded as more effective than targeting national policymakers as NGOs were more likely to be able to influence the design of local schemes. However, in Northern Ireland, advocacy groups representing disabled people described being able to influence national policy level decisions, for example, the fuel poverty coalition was able to secure a commitment to ring-fence certain levels of funding for vulnerable households [WP2 interview 42].

Understanding the implementation of domestic energy efficiency policies and the inclusion of vulnerable groups

As outlined in Chapters 1 and 2, WP1 and WP2 stakeholder interviewees were asked about the design and implementation of domestic energy efficiency policies across the UK, and its impacts on disabled people and low income families. Throughout these interviews points were raised about both the evolution and unintended consequences of the flagship policies during their implementation.

Policy emphasis

Interviewees discussed how ECO had evolved since its inception, and its predecessors. Initially designed with an emphasis on climate concerns, almost all elements of ECO have emphasised low cost carbon savings rather than social impact. Whilst ECO has undergone substantial changes and now emphasises fuel poverty alleviation, the focus on carbon has implicitly remained and is evident within policy settings and targets. Whilst interviewees discussed this mismatch in broad terms (e.g. the problem of adapting a carbon based policy to address a social problem), they also discussed specific policy settings.

One key issue highlighted was the emphasis on delivering low cost carbon measures, with interviewees arguing that the marketised system led to an emphasis on installations that were cheap and easy. As a result of this interviewees suggested that those in most need might not be helped, that the specific needs of the household might not be met, or even that the most appropriate work for the building might not be undertaken (cost constraints may mean that only partial retrofits are completed, or that work completed is suboptimal – for example, not flushing a heating system before installing a new boiler). Indeed, scheme providers interviewed argued that installers preferred certain measures because of their profitability under ECO rules – regardless of

a household's needs [see WP1 interviews: 8, 9; WP2 interviews: 10, 21, 4, 5, 6, 58, 9]. As a result, for instance, there was relatively little interest in smaller measures such as low-energy lighting or upgrading pipework, despite engineers and frontline workers stressing their importance for the household [WP2 interview 14]. Indeed, it was suggested that previous iterations of ECO led to perverse incentives related to predicted carbon/financial savings – for example, several interviewees discussed extensive fitting of new boilers that were then 'back claimed' to meet ECO targets. Technical and economic calculations were said to have driven the supply chain rather than household's needs. Furthermore, industry actors and the supply chain were said to prefer to target buildings, principally relying on EPC rating data, so much so that certain measures became synonymous with different elements of ECO e.g. boiler replacements were associated with HHCRO, whereas CERO tended to focus on insulation and boilers, rather than the needs of the recipients [WP2 interview 21].

Comparing how ECO has functioned in England with Wales and Scotland is of benefit here. Whilst the English focus has been driven by the legacy of low cost carbon targets (as described above), in Scotland interviewees suggested that the broader political climate enabled a greater emphasis on fuel poor households (as part of wider concerns around reducing inequality and addressing social justice issues). In Wales, the emphasis on regeneration and renewal was said to allow extensive retrofits (i.e. more measures provided to a single home), rather than mass installations [WP2 interviews 19, 13].

The impact of delivering low cost measures via the market

Interviewees discussed the impact of the complex terrain that emerged from ECO's emphasis on delivering measures at a certain price per tonne of CO2 or projected bill savings. They described how ECO's marketised system led to complex contractual arrangements, sub-contracting, and long supply chains involving a large range of state, NGO and private sector actors. Energy company interviewees [WP2 interviews 9, 21, 31] suggested that when contracting for ECO delivery there was a preference for working with private companies, charities and consortiums of local authorities because economies of scale could be achieved, and they could 'shop around' for work (compared with simply working with individual local authorities which are geographically bound). Furthermore, scheme providers and installers [WP2 interviews 22, 18, 19, 33, 34, 35] expressed a preference for area-based schemes or the flexibility to do entire streets, as it enabled economies of scale, and was easier to monitor.

It was suggested by some interviewees [e.g. WP2 interviews 23, 17, 4] that bigger and wealthier administrative areas were better able to build larger business cases and secure significant levels of ECO funding, for example when making a case through HEEPS: ABS in Scotland. In England several multi-region partnerships between local authorities were described as having been developed in response to energy companies' preference for working with consortiums (for example, Better Homes Yorkshire, which includes 10 local authorities). However, there were significant differences across the English regions, largely as a result of the capacity of different local authorities. Furthermore, interviewees suggested that as a result of ECO's supply chains and sub-contracting arrangements, responsibility and culpability was essentially passed onto intermediaries (such as local authorities) where staff tended to be already over-capacity and did not always have specific expertise in energy efficiency.

Several other points were made about the (unintended) consequences of ECO, largely around its cost and availability to vulnerable households. The long supply chains and brokerage involved in

England (and to a lesser extend in Wales and Scotland) were criticised by some interviewees who argued that as each organisation within the supply chain took its financial share this reduced what was actually available for vulnerable households [WP2 interviews 7, 44]. Furthermore, interviewees described ECO as being subject to significant volatility. ECO's obligation periods were described as making it gradually harder to access, with scheme providers describing how towards the end of ECO periods, and when energy companies were close to reaching their targets they came up against stricter contractual arrangements, less flexibility for doing smaller numbers of cases, and lower prices for work.

As such, ECO was described as resulting in 'an ever changing funding landscape' [WP2 interview 14] that resulted in a complex system for households and agencies to navigate and understand. The arrangements described above affected which schemes were available (and where) and as a result which households were eligible for support. In England, given the absence of an alternative state funded scheme, interviewees suggested that this led to geographically 'patchy' delivery of support. Amongst the interviews in England, those working in referral and support services were not always willing to refer vulnerable people to ECO as they were concerned about the degree of volatility and variation, and could not be sure that a scheme that had been available at one stage would continue to be available at another [WP2 interviews 18, 20, 21].

Given the emphasis on cheap installations and carbon, interviewees across the industry were critical of the funding of ECO, suggesting that it had failed to support those in most need despite increasing energy bills. This criticism was less pronounced in Northern Ireland, Scotland and Wales where state funded schemes operated, and had the ability to mitigate some of these effects. However, it should also be noted that some interviewees criticised the high administrative costs associated with using centralised managing agents in Scotland and Wales (compared to the purely market driven approach used in England). Scheme providers commented unanimously that the level of funding inadequate and had been decreasing for many years [see for example WP2 interviews 18, 20, 35]. This was seen as especially problematic given that emphasis has moved towards the hard to reach/treat which are generally more expensive cases [WP interview 20].

Many of the complexities described above were absent in the interviews conducted with stakeholders from Northern Ireland. However, two distinct issues emerged. Firstly, there was a distinction between the way ECO and NISEP function. In Great Britain, ECO companies generally regarded it as a risk to their business and something that needed to be met at least cost. Some had in-house ECO teams and installers that benefited from the retrofit work it generated, but this was not described as a significant or particularly profitable part of the business. Whereas in Northern Ireland, NISEP companies submitted bids to the utility regulator to attract as much of the overall policy funding as possible – as a result, delivery of the installations was seen as a profitable enterprise and as 'good for the company image' [WP2 interview 60]. However, it should be noted that, at the time of the fieldwork for this project plans were being discussed to replace NISEP with a supplier obligation provisionally named 'EnergyWise'. Due to various delays, this policy had yet to be developed, and NISEP had been extended but with a reduced budget with uncertainty over subsequent levels of funding. This meant that participating companies were unable to guarantee measures to eligible customers in the short or long term [WP2 interview 60].

Partnership working

Securing additional funding for energy efficiency schemes was a common theme across the three British nations. Local scheme designers and providers reported drawing on various funding

sources to cover shortfalls and increase access (e.g. for households that couldn't afford to make a contribution or that were not eligible) and to provide a consistent offer over time [WP2 interviews 18, 33]. Most notable was the combination of dedicated public and private funding streams in Scotland and Wales, and its absence in England. The increased number of installations per household (as indicated in Figure 3.1) has been attributed to this combination of funding streams (Ofgem 2015), and our interviewees also suggested that it led to a greater number of vulnerable/fuel poor households being reached (see for example WP2 interviews 16, 56).

As described above, a variety of partnerships with local authorities (or groups of authorities), NGOS, and other stakeholders have developed in response to ECO, most notably in England. Interviewees suggested that the National Institute for Health and Care Excellence (NICE) guidelines on excess winter deaths and illness and the health risks associated with cold homes was seen as a valuable framework for engaging the health sector. Several examples of schemes explicitly linking to this framework were given, with the Liverpool Healthy Homes Programme described on several occasions as an example of a highly effective partnership. A wide range of examples of partnerships involving the health sector were given, in some cases these enabled ECO funding to be combined with additional funding sources, for example, from the Clinical Commissioning Group (CCG). Whilst this had the potential to target particular groups (e.g. those with particular health conditions), it also enabled eligibility criteria to be broadened (e.g. focusing less on technical requirements or receipt of certain benefits) [WP2 interviews 20, 24, 33, 35]. These types of partnerships, regional/local policy networks and frameworks (e.g. regeneration and health policy networks) were described as extremely helpful for coordinating work with multiple partners and project goals. However these were also said to add a further level of procedural complexity as they typically had more reporting/contractual requirements, different priorities, and potentially different eligibility criteria. Furthermore, changes in funding, policy and staff meant that sometimes partnerships became dormant. Having a dedicated forum or staff responsible for orchestrating this work and keeping it active was seen as a priority by managing agents in Scotland and Wales but was left to local authorities or individual scheme providers in England and Northern Ireland. Generally interviewees suggested that joined-up working and service delivery was easier in Northern Ireland, Scotland and Wales because of the presence of various fuel poverty forums and because the sector is much smaller, allowing for close and consistent working relationships to be maintained over time.

Whilst there has been substantial attention paid to the role of the health sector, interviewees noted that developing partnerships with health teams and encouraging referrals was not always successful. In England, the success of working with the health sector was described as mixed, with some relatively superficial partnerships that resulted in limited buy in, compared to others that were far more extensive. Despite the benefits described above, there was limited evidence of systematic partnerships with organisations representing disabled people or low-income families, although some successful partnerships involving children's services were reported.

Recognising the needs of low income families and disabled people in policy implementation

In some interviews frontline charity interviewees reported acting as intermediaries between households and scheme providers, guiding them through the process. Without this it was suggested that the households' additional needs and/or the complexity of the scheme would prevent the installation from going ahead. Interviewees gave a range of examples of this: people with sensory impairments, learning difficulties, or in need of translation services might struggle with scheme information and processes [WP2 interviews 34, 42, 16] that over rely on one form of communication (e.g. telephone calls or letters). This might make take up of schemes impossible

for certain groups without 1) other forms of information or 2) additional support [WP2 interviews 16, 19, 28]. The inclusion of a variety of actors representing disabled people or low-income families (either through formal partnerships or less formal means) in delivering energy efficiency measures was considered valuable by interviewees for a number of reasons. Firstly, they had community based knowledge about how to find vulnerable households. Secondly, they were considered helpful in building relationships and trust with vulnerable households. Thirdly, they were able to help with the specific needs of particular households. Fourthly, in rural areas, partnerships were said to enable some activities that could otherwise be prohibitively expensive. Fifthly, some partnerships were thought to prevent high attrition rates with additional organisations (that understood household needs) being able to provide support during installation work.

In addition to working with intermediaries, the provision of holistic approaches to support (combining benefit checks, debt advice etc.) was reported. Wider forms of support and advice were regarded as positive as they could often provide immediate and multiple positive impacts alongside the longer term effects of energy efficiency improvements. These forms of support and advice typically included: Warm Home Discount entitlement checks, tariff switching, behavioural advice and emergency help (e.g. PPM top ups). These 'co-benefits' were important for gaining trust and keeping a household engaged through to the more substantial retrofit work and its associated benefits.

Despite the positive work described above, throughout the interviews there was consensus that the needs of disabled people and low-income families were not well enough understood during policy implementation. Throughout both WP1 and WP2 stakeholder interviews the ability of energy companies and scheme providers/installers to work with vulnerable groups was questioned (e.g. WP1 Interviews 8, 3, 5, 1). Mental health was described as a hidden vulnerability that many contractors and energy companies – and anyone not trained in working with vulnerable people – might misinterpret as households being 'awkward' and may not make sufficient allowances for when interacting with them [WP2 Interviews 10, 11, 12, 16, 19, 23, 25, 28, 29, 30, 3, 33, 35, 26, 29, 40, 44, 48, 49, 52, 54, 55]. More training around the variety of needs of vulnerable customers was described as essential for all those involved in the supply chain (although it was noted that energy advisors in Scotland are given training around different energy needs). It was also suggested that people's needs were often lost within the long supply chains and contractual arrangements described above. Furthermore, there was frustration within the interviews that health workers and other support services (e.g. children's services) were not engaging more with energy efficiency policy despite its potential to improve health outcomes. Interviewees suggested that whilst there have been some, albeit limited, successes achieved through partnerships with the health sector and between large charities and energy companies, however, these have been relatively limited in terms of their reach.

Monitoring and evaluation

Monitoring and evaluation is an essential part of the policy process as they enable lessons to be learnt and applied in subsequent policy making (Hudson and Lowe 2009). The WP1 and WP2 interviews revealed differences reported in the levels of openness to scrutiny and detail of monitoring and evaluation in each nation [WP2 Interviews 1,2, 23, 21]. England and Wales were seen as performing relatively poorly in terms of recording household level information for policy reach and impact, or in making this available to independent evaluation (unless directly

commissioned) [WP2 interview 1, 2, 21, 23]. Scotland and Northern Ireland were seen as having a better record of engaging in policy evaluation [WP2 interview 40].

With regards to monitoring impacts at the household level, all four nations were regarded by interviewees as underperforming. Actual energy use or experiences of fuel poverty was not accurately analysed by any policy or scheme, but only ever modelled based on assumptions about income, consumption, dwellings and efficiency gains. Some schemes that partnered with academics were able to draw on research funding to monitor impact, but this was isolated to a limited number of projects. Similarly, wider impacts for the local community and supply chain were not recorded systematically. Local contracting for scheme delivery was common across the nations, but it rarely led to information about job creation, community development or non-economic benefits (despite it being written into official policy documents as best practice).

Chapter Four: Understanding how UK households engage with energy and energy efficiency

This chapter considers how UK households engage with both energy and energy efficiency. Where possible it first introduces the available literature on the subject, before introducing the findings from this research. Most of the empirical research discussed here relates to the household interviews, however, where relevant WP2 stakeholder interviews are also included.

Households and energy

Context

The ongoing austerity agenda in the UK has had a substantial impact on the incomes of working age people (Fothergill and Beatty 2016) especially those on the lowest incomes and disabled people. The effects of this were evident across the WP2 household interviews where many participants described a situation of poverty, juggling day-to-day finances, and playing 'a constant game of catch up' [Household Interview 20]. The majority of the households were on Pre-Payment Meters10 (PPMs), and food bank use was reported by two households, one of which [Household Interview 8] had undergone a month without any money as a result of a benefit delay. Another interviewee had recently been to court to appeal a disability benefit decision [Household Interview 7]. Other households described a constant fear over losing disability benefits [Household Interview 27].

Several specific contextual factors relating to Northern Ireland and Scotland were discussed in the household interviews. Firstly, in Northern Ireland, the more limited number of energy suppliers when compared to the rest of the UK, and secondly the prevalence of households off-grid 11. Within this sample four households reported being reliant on oil heating. Using oil came with a number of challenges, for example, Interviewee 36, who had a disabled child received oil deliveries in bulk, found that these did not always last through the winter, and interviewee 1 reported that she had once used some savings to buy extra oil, but that this had been stolen from her tank while she had been out at work. As with NI there were several distinctive features about the Scottish household interviews, with two being off grid, and one of these householders no longer being fit enough to cut peat for her range [Household Interview 22]. Rurality was thus highlighted as an additional challenge, and one that typically came at additional financial cost.

Low income families and energy

Research indicates that children in low income families are more likely to live in poor quality housing, the effects of which have negative consequences for health and well being, psychological development, and social mobility (Liddell 2008; The Children's Society/NEA 2015; Marmott Review 2011). Specifically, the 2011 Marmott Review of health and fuel poverty found the following

[10] Typically regarded as detrimental for households as they cannot smooth over high costs in the same way that a direct debit does

[11] 15 per cent of UK households are off-grid, with large variation between the four nations: 80 per cent of homes in NI are off-grid, compared with only 12 per cent of homes in England. Proportionally more off-grid households are single occupancy (in GB) and/or house a person over the age of 60 (in the UK) (Oft 2011)

negative health effects of cold housing on children: low weight gain amongst infants, increased hospital admission rates, poorer developmental rates, and increased severity and frequency of asthmatic symptoms (2011: 9). Amongst adolescents living in cold housing poorer mental health was also identified with 1 in 4 adolescents who live in cold housing experiencing mental health problems compared to 1 in 20 of those living in warm housing (ibid). Equally there is a very clear evidence linking existing health conditions to fuel poverty.

Within our research respondents with children were very conscious about the importance of providing a warm home. Several households made the comparison with their lives before they had children, making the point that having children made them more conscious about housing conditions and more prepared to seek help (e.g. by moving house, asking for energy efficiency measures or other benefits): 'You've got to keep the little ones warm, it's not just a case of putting another jumper on' [Household Interview 38]. Similar to the findings highlighted by Gibbons and Singler (2008), most respondents with children described strict heating routines that maximised children's warmth, for example, heating the home according to the presence/absence of children in the home, around school hours, or for not resident parents, visiting times [Household Interviews 36, 30, 26, 20, 11, 8, 6, 4]. Some households also described practices undertaken to minimise energy spent cooking or washing [Household Interview 6]. Interviewees also described the additional energy costs associated with having children, ranging from increased washing and drying, to adolescents' energy use [Household Interviews 34, 33, 26, 4].

Disabled people and energy

Whilst living in poor housing conditions is linked to an increase in health problems (Marmott Review 2011), there is also extensive evidence that suggests a relationship between health conditions, disabilities and fuel poverty. Certain medical conditions require additional heating, and an absence of this heating may prove both harmful, or indeed fatal. For some this additional heating regime may also be for longer periods. This is largely attributed to the greater lengths of time that disabled people or those with life limiting illnesses may spend in the home, and also the relationship between old age, declining health and time spent in the home (e.g. see Age Concern, 2006, Stewart and Habgood 2008, Hamza and Gilroy 2011). There are additional factors that may also increase energy needs, such as the cost of running equipment and other factors such as increased laundry needs. These factors all have the potential to increase household energy costs and also increase the risks to households where insufficient energy is used.

Disabled people/parents of disabled children within our research described a variety of factors that led to additional energy use [Household Interviews 36, 27, 2]. This included the need for higher temperatures and/or ensuring a warm home [Household Interviews 33, 14, 13, 36], for example, Interviewee 36's daughter had a heart condition which meant she needed constant warmth in the home in order to prevent a deterioration in her health. Running equipment such as stair lifts, hoists, running and charging wheelchairs, and additional washing and drying requirements were also described as being energy intensive and increasing energy costs [Household Interview 2, 7, 27]. In the case of Interviewee 2, her daughter had multiple impairments which meant she needed energy dependent equipment including a feeding machine and nebuliser:

'I have a daughter that's on a feeding machine…she's fed every night for 12 hours'.

These circumstances led to an increased cost in household energy and also high risks associated with disconnection and a drop in ambient temperatures. Even brief disconnection from the energy supply had potentially severe consequences. In her case, despite reassurances that she could not be disconnected from her PPM given her daughter's disability, she was disconnected on several occasions

> *I've arranged with the [provider] that my electric doesn't go off at all even though I pay through a top up meter, it's not meant to go off at all but it does… [Household Interview 2].*

The perspectives of practitioners and other organisations

The WP2 stakeholder interviews also added to this evidence base. Sudden changes in health or income were said to leave families and disabled people in difficult and often fluctuating circumstances [WP2 interview 22]. Interviewees suggested that resilience to life events depended to a large extent on having good social capital, and that social isolation was an important part of a person/household's vulnerability. For instance, poor mental health may lead to increased social isolation whilst simultaneously increasing energy needs because of more time spent in the home [WP2 interviews 10, 14, 22, 28, 35, 43].

Accessing information about energy and energy efficiency

Existing literature

Throughout the literature there is evidence to suggest a lack of knowledge amongst the general public about what energy efficiency measures are available and how they should be best used (Houses of Parliament Parliamentary Office of Science and Technology 2017, Sorrell et al 2004, IEA 2007, Retrofit Report 2009, EST 2016, EP2016). This lack of knowledge is also found amongst private landlords, acting as a barrier to energy efficiency improvements within the Private Rented Sector (PRS) (Mallaband et al 2014, Ambrose 2016).

The formal provision of information about energy efficiency measures in the UK is spread across diverse sources, ranging from Energy Companies and Installers, the Energy Savings Trust (EST), NGOs, Local Authorities, and also varies by nation. In England, the active promotion of supplier funded schemes such as CERT, CESP, and ECO has largely been left to delivery bodies such as energy suppliers (ERP 2016: 22), and low consumer confidence in the energy industry is cited throughout the literature as a barrier to uptake (ERP 2016). Even the (former) Government Department with oversight of energy efficiency recognised that 'accessing trusted and appropriate energy efficiency information has often proven difficult' (DECC 2012: 19-20). In addition to official sources of information, households were also said to use social and familial networks to discuss the viability and trustworthiness of work. Research suggests that where friends, family or neighbours have had positive experiences of measures being installed, this encourages other households to undergo work (Policy Connect 2016, Fornara et al 2015: 8, Gillich and Sunikka-Blank (2013)). However, research also indicates that this may be an unreliable source of knowledge when seeking technical information, and may reinforce existing preconceptions or beliefs (c.f Fornara et al (2015)).

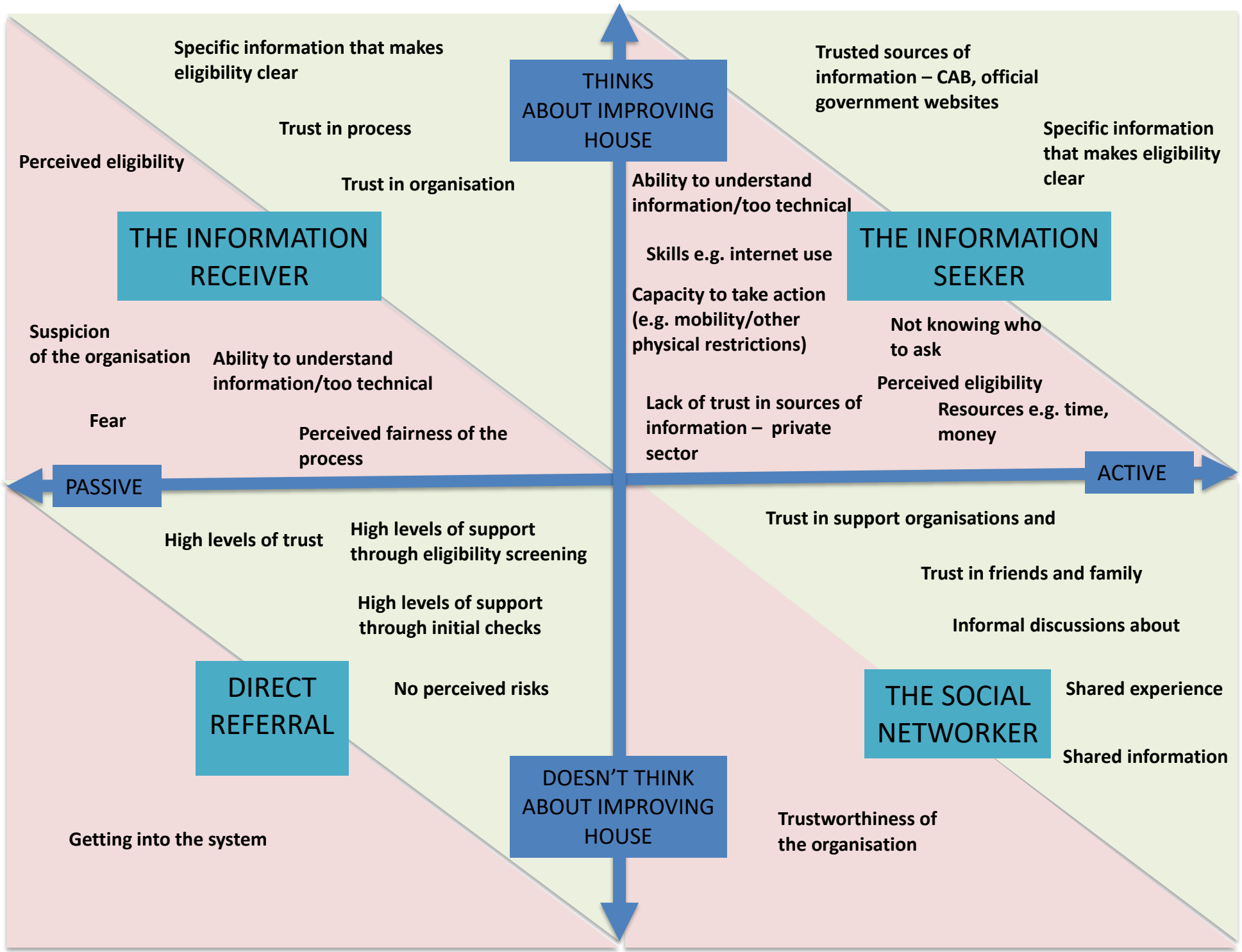
There is also evidence within the literature to suggest that there is a mismatch between how households use energy, and the promotion and provision of retrofit measures. Judson and Maller (2015) and Crosbie and Baker (2010) emphasise the importance of understanding how people use energy as a precursor to designing interventions. Furthermore, how actual interventions are promoted and targeted must also reflect the needs of intended participants, for example, Mallaband et al (2012) stress the importance of understanding the routines of households and how these might affect willingness to undertake a retrofit (e.g. not wishing to have an installation around school holidays). Despite this, whilst energy use is heterogeneous, and as a result, so too are the benefits of energy efficiency measures (EP 2016), often information and advice is provided in a generic manner that does not reflect a household's particular circumstances (EP 2016, DECC 2012). Furthermore, there is criticism within the UK policy literature that retrofit marketing has been too narrowly focused on cost saving (rather than emphasising wider benefits such as health and comfort), and that this may be at odds with householders' needs (Policy Connect 2016, Houses of Parliament Parliamentary Office of Science and Technology 2017).

How households in this research accessed information about energy and energy efficiency

The WP2 stakeholder interviews suggested a general lack of knowledge amongst UK households about either energy efficiency or the support that might be available to them. Households that did engage with information, advice, and energy efficiency schemes were said to do so in a variety of ways, shaped by both individual circumstances, the support on offer, and how it was offered.

These different ways of engaging with information, advice, and support (i.e. measures) were also reflected in the household interviews. Household engagement broadly fitted into four categories and these have been developed into the matrix presented in Figure 4.1. The top two quadrants of the matrix represent households that have actively sought out information, advice or support, or have responded to publicity about it. The bottom two sections reflect households who have come across it as a result of engagement with other activities. Households whose engagement with energy has been passive (i.e. in response to external stimuli) are on the left hand side of the matrix, whereas households on the right hand side have played an active role in seeking out information, advice and support.

Figure 4.1 Initial household engagement with energy information, advice and support


THINKS ABOUT IMPROVING HOUSE
DOESN'T THINK ABOUT IMPROVING HOUSE
PASSIVE
ACTIVE
THE INFORMATION RECEIVER
THE INFORMATION SEEKER
DIRECT REFERRAL
THE SOCIAL NETWORKER
Specific information that makes eligibility clear
Trust in process
Perceived eligibility
Trust in organisation
Suspicion of the organisation
Ability to understand information/too technical
Fear
Perceived fairness of the process
High levels of trust
High levels of support through eligibility screening
High levels of support through initial checks
No perceived risks
Getting into the system
Trusted sources of information – CAB, official government websites
Specific information that makes eligibility clear
Ability to understand information/too technical
Skills e.g. internet use
Capacity to take action (e.g. mobility/other physical restrictions)
Not knowing who to ask
Perceived eligibility
Resources e.g. time, money
Lack of trust in sources of information – private sector
Trust in support organisations and
Trust in friends and family
Informal discussions about
Shared experience
Shared information
Trustworthiness of the organisation

The information seeker - 'it's a minefield' [Household Interview 39]

Households within this quadrant were those that actively and independently sought out energy efficiency information, advice and support. When asked about their research strategies numerous respondents described the process as *'a minefield'* [Household Interviews 39, 38], finding it difficult to know where to go and which sources to trust. Some householders reported a sense of frustration and powerlessness:

> *'See I'd always look online if I was to look for that sort of thing, but I find it such a minefield.....I find it quite complicated. I guess I'd be better for me to speak to someone I think, but yes I do have a quick look on the internet now and then, but like I say it just confuses me' [Household Interview 38]*

> *'I think that there needs to be more, with, with anything to do with grants or any energy efficiency, they need to be less wordy websites. I mean I'm reasonably articulate and they just, the information and the clarity of information about if you qualify is very "and/or, in addition to", and it's not, it's not clear if you qualify straight away. I mean I, I have quite, got quite a good understanding of language and I still had no idea if I qualified or not... (laughs)' [Household Interview 42]*

> *'I wouldn't know which direction to go…surely there's some information out there for people who are on benefits…you'd think one would tie in with the other just to let you know what's available to you' [Household Interview 7].*

Google was mentioned as the most common place to seek information, and Citizen's Advice was highlighted as a trusted source of information on numerous occasions although interviewees commented that it could be difficult to get an appointment). Government websites were generally regarded positively, however, there was particular scepticism about the private sector when compared to charities and the public sector:

> *I know they can't lie to you but they can certainly make it confusing for people like myself'…we all know how business works' [Household Interview 38]*

> *'The perception I have if I were to go to my energy provider…I have a feeling there would be a cost attached to it…you hear so much on the news about how much money they're making...that they've ripped off with this and that…energy company is the last place I'd go' [Household Interview 37]*

The capacity to access and understand advice was problematic for some interviewees, for example, if they had limited internet access or skills - '*I wouldn't be that great on the internet you know'* [Household Interview 4], limited physical mobility that might prevent trips to the CAB or advice centres, or as a result of information being difficult to understand:

> *'I rang [large energy company] for a bit of advice and quote on a boiler…but most of it was goobledygook to me, it just went over my head' [*Household Interview 25]

Perceptions of eligibility, especially for households in the PRS, mitigated against households from taking action: '*We didn't feel we had the right to look at any incentives and to sign up with it because it wasn't our property'* [Household Interview 37]. This doubt prevented some households from taking action even if they came across information that suggested they might be eligible: '*Sometimes you think there's no point because you just get fobbed off'* [Household Interview 14].

A key perception amongst many households in low paid work was that support available for energy efficiency measures was only targeted at people not in work. Households had tried, and failed, to obtain help and now perceived that current support measures were 'not meant for them':

> *'…when I first got poorly I went to Citizens' Advice for a lot of things to find out what I could and couldn't do, and how I went about certain things to do with the boiler. We did look into whether or not I could get it under a disability grant. They said, at the time, no, because I was still working. Obviously, now, after two years, I'm now not working anymore, and because my husband earns over £15,000 a year, we now know that that seems to be the standing figure for most things. If you've got a household income of over £15,000, then not many people want anything to do with you in order to help'. [*Household Interview *33]*

This perception may limit the potential of policy changes offered by ECO flex, where former stipulations on eligibility can be relaxed. The same barrier faces disabled people who have not been able to access the disability benefits that are used as eligibility criteria for energy efficiency measures. A couple of respondents who were self-employed highlighted particular difficulties in being able to prove eligibility in circumstances where their income fluctuated significantly over any given period of time.

The information receiver – 'if it hadn't been for the leaflet about cavity wall insulation I wouldn't have thought about getting any energy efficiency measures' [Household Interview 3]

Households within this quadrant were typically those responding to a generic leaflet, advert, or cold caller (as opposed to someone being approached as a result of their specific circumstances). For example, Household Interviewee 10 responded to a newspaper advert, and 3 and 39 responded to an information leaflet that came through the door. As discussed above, some households in this position regarded this information with cynicism and doubts about eligibility:

> *'a lot of people like myself out there that are not eligible for half of the stuff because they're still on a low income but not as low as people who don't work'* [Household Interview 3]

However, where eligibility criteria were made clear from the outset households were more willing to take further action with the confidence that they were less likely to be rejected further along the process. A lack of confidence in the information and support offered was also evident:

> *'these folk that phone you up and promise you the earth and when you get it its different…you're inundated with phone calls* [referring to private companies offering works]…*The government have set up an outfit [to give advice] but to me they're not very good…I don't think they give the right advice'* [Household Interview 10]

However, where the organisations involved were trusted this tended to encourage action and whilst there was some mistrust of public sector organisations, the greatest levels of mistrust were reserved for the private sector, in particular energy companies.

The Social Networker 'I'm in a group on facebook' [Household Interview 33]

Households within this quadrant typically came across energy efficiency information, advice and schemes through social networks, both on and offline. Several households accessed schemes as a result of 'word of mouth' [Household Interview 22, 11]. Family and friends were regarded as trusted and valuable sources of information, especially where someone had technical knowledge about energy efficiency, or first-hand experience of measures [Household Interview 39, 25, 6, 1]. Online social networks were also described as playing an important role in raising households' awareness about energy efficiency measures. Several respondents reported being in facebook groups for people on benefits, disabled people, or parents of disabled children [Household Interview 27, 33, 36]. These groups provided informal information about what schemes existed, potential eligibility, and how to apply. The information shared within these forums was regarded as positive (and by implication trustworthy). Compared to households in other quadrants of the matrix the information that was shared and exchanged within this group was regarded as much more trustworthy, although the same suspicions about the private sector and concerns about eligibility remained.

Direct Referral 'someone rang us up and said that we were qualified because we had a disabled child' [Household Interview 36]

The households within this quadrant were typically those who were given entitlement checks as part of a broader set of state delivered benefit checks or were directly approached as a result of their specific circumstances. For example a participant with a disabled child reported that '*someone rang us up and said that we were qualified because we had a disabled child*' [Household Interview 36]. Another household with children reported being given an entitlement check as they engaged with state welfare services:

'My husband was on the bru [unemployed, attending employment bureau] at the time, he wasn't working,….it's the benefits place. They were able to tell us that we were entitled so we got all that [cavity wall and loft insulation] for nothing' [Household Interview 4].

The experiences of these households were almost entirely positive, with households reporting high levels of trust in the organisations involved, and surprise about the degree of support offered. The main barrier for households in this quadrant was being eligible in the first instance, with concerns that subsequent changes in income thresholds and benefits would lead to a larger number of households being ineligible for support.

Table 4.1 provides a summary of the main factors that encouraged or prevented further engagement with energy efficiency schemes following the initial forms of contact outlined above.

Table 4.1 Factors that encouraged or prevented further engagement with energy efficiency schemes

Factor	Household viewpoint (Household Interviews)
Eligibility	Unclear eligibility criteria off putting; perceptions about eligibility. However, where eligibility criteria are clear households more likely to put themselves forward
Quality and quantity of information	Information not clear – 'gobbledegook' Too much information from a variety of different sources. Described as a 'minefield'. Impossible to know which sources are credible and which are not.
Social networks	Family and friends regarded as trusted and valuable sources of information, especially where someone had technical knowledge about energy efficiency, or first-hand experience of measures. Online social networks described as playing an important role in raising households' awareness about energy efficiency measures and the process involved.
Distrust of service providers and installers	Lack of trust in sector, especially private companies. In general much less trust in energy companies and installers, in terms of the information provided, schemes, and work. Higher levels of trust reported in public sector/charitable organisations.

Engaging with energy efficiency schemes

Existing Literature

Previous research highlighted a range of key barriers that affect the extent to which people engage with energy efficiency schemes, including disruption, hassle, mess as well as cost. Household concerns about disruption, hassle and mess are evident throughout the literature (Houses of Parliament Parliamentary Office of Science and Technology 2017, Mallaband et al 2012, Caird et al 2008, Scott et al 2013, ERP 2006) and are central to DEFRA (2004) and EST's (ND) analysis of barriers to the adoption of energy efficiency measures, indeed, in Scott *et al's* (2013) study, 23.7 per cent of the sample named 'disruption, noise, or mess' as the 'worst things' when asked about what would put them off undertaking a retrofit. Perceived disruption to the daily life of the household, the perceived size of the task, requirements of the householder (e.g. in preparation or following the work), the length of the job, the householder's own time constraints, and their perceived emotional/physical capacity to go through the process all underlie these concerns (Mallaband et al 2012). The effort taken to arrange the installation of measures, a lack of self confidence in selecting appropriate measures, and the complexity of the administrative process are also identified as barriers (ERP 2006: 22). Furthermore, specific measures may be associated with particular concerns, for example, loft insulation is typically met with concerns about a loss of storage space and the physical demands associated with emptying the loft (Caird et al 2008: 6). It is important to stress that whilst some of these concerns are based on concrete requirements by the installers (such as a loft clearance), in other cases they are based on beliefs (Scott *et al* 2013).

Cost to the householder is also frequently cited as a barrier, especially where households are required to pay upfront costs for large proportions of work undertaken (EST ND, DEFRA 2004, EP 2016, Houses of Parliament Parliamentary Office of Science and Technology 2017, Gillich and Sunikka-Blank 2013). Furthermore there is evidence to suggest that households are concerned that there may be hidden costs (Gilbertson et al 2004). In some cases the 'split incentive' also acts as a barrier where landlords are unwilling to invest in energy efficiency because they do not believe that there are financial benefits of doing so (Ambrose 2015, EST 2016, EP2016, Houses of Parliament Parliamentary Office of Science and Technology 2017, DECC 2014, Sorrell et al 2000, ERP 2006, Gillich and Sunikka-Blank 2013, IEA, 2007; 2008, Retrofit Report, 2009).

The views and experiences of households

WP2 stakeholder interviewees across all countries reported a high level of dropout from schemes wherever the administrative, or financial, burden for the household was considered too high. Stakeholder interviewees throughout both Work Packages reported encountering reluctance among some families and disabled people to take on the stress and demands associated with the installation of energy efficiency measures, on top of meeting their own daily needs (which in some cases were described as being complex and varied) [e.g. WP1 interview1; WP2 Interviews 12, 39]. If the application process and installation process was difficult or intimidating then households were less likely to pursue them [WP2 interviews 48, 39, 28, 16].

Whilst the stakeholder interviews clearly demonstrated an understanding of some of the main barriers facing disabled people and families, the household interviews provided insight into the complexity of these. Households in our research taking the first steps towards retrofit measures described considering a number of potential risks before deciding to go ahead. In some instances these led to households dropping out of the process completely. Household interviewees described a number of potential concerns associated with undertaking retrofit measures. The ability of programmes/installers to address these made a substantial difference to continued household engagement.

For families, interviewees were averse to any risks that might endanger energy based routines and for some households this fear prevented them undertaking work [Household Interview 36]. Equally any costs associated with retrofit measures, whether direct or indirect, were highly undesirable, even if these were a relatively small proportion of the overall work, as low-income households reported that they did not have the capacity to raise these additional funds. Household Interviewee 29 reported that when she had approached an organisation for help with energy efficiency measures she was required to provide information on the amount of insulation she already had. However, her impairment meant she could not access her loft to undertake this requirement, but also stated that she could not afford to pay someone to do this for her. In the case of Household Interviewee 21 uncertainty about explicit or hidden costs prevented her from going ahead with the retrofit. The time involved in discussing the installation of measures was also mentioned, especially for those in employment, with young children [Household Interviewee 19 reported long periods of time on the phone that was problematic with a child in the house], or with restrictive health conditions.

Uncertainty about the extent of physical disruption was a particular issue, especially where a member of the household had a strict medical routine, and/or required energy dependent equipment. For example, in the case of Household Interviewee 2:

> *'Because I have a disabled child they need to give me half an hour's notice before they arrive at my door because I could be giving her medication or she could be on the nebuliser'*

Some households reported undergoing an initial telephone assessment, whereas others described a home visit. Although assessments over the phone were said to work by some of the respondents, the desire for face-to-face support was expressed throughout many of the interviews especially by households with a disabled person.

> *I quite like, you know, like one-to-one. It's like this online banking thing, I don't do that because I like to see, I like to go and talk to them and make sure it's right, what you're getting or what you're not getting [*Household Interview 49].

Households that received a home visit tended to report a more positive experience as they were able to talk through their concerns in a more focused (and relaxed) manner. Conversely,

Household Interviewee 36 received a telephone assessment. She was offered cavity wall and loft insulation, but only took up the former as she was concerned about the disruption and amount of physical work she would have to do herself following the retrofit. Given her daughter's disability she said that she would have preferred a more detailed assessment process to discuss her specific needs, however, this did not fit with the way in which the scheme was being delivered:

> *'I would have liked maybe more…I would like to have discussed the attic room because it probably would make a real difference…I would have preferred a face to face…I was under the impression that it was coming to the end of the scheme and they were wanting to spend money'*

A key point here is the flexibility to offer tailored support to meet individual needs. So whilst many respondents suggested that this tailored support was best offered through a face to face discussion within someone's home where their needs were apparent, this was not a universal view. One respondent discussed dealing with her partner's needs, and that she felt she could not commit to having someone visit amidst all that was going on:

> *'He did offer to come out and see me, but, like I said, me husband was having an hip operation and I didn't know where I'd be or, so I had to say, you know, I'm sorry but at the moment I, I can't have you coming because I don't know where I'm gonna be. Cos I was going to the hospital, then I got him home, and then I had to sort of sort him out and, and, oh it was hectic'. [Household Interview 41].*

For some participants who lived with impairments or conditions the ability to complete the application process was also raised [Household Interviews 28, 7, 22]. Support through the process, either through official channels or familial and social networks helped with this:

> *'the wife helped out as well because at the time I was on really strong painkillers and I found everything slightly confusing' [*Household Interview 7].

Table 4.2 summarises these key concerns alongside additional points from the stakeholder interviews where relevant.

Table 4.2 – Household concerns about undertaking retrofit measures

Key issue	Low income families	Disabled people	Stakeholder perspectives
Fears about mess	Damage and mess, lack of trust in information given, lack of information to make an informed judgement		Concerned about the disruption of work and about whether any mess would be cleaned up.
Direct or indirect cost	Prohibitive upfront costs and hidden costs (e.g. redecoration)		Direct household contribution and/or indirect costs such as redecorating were off putting. Loans (even zero interest) were not seen as attractive options
Administrative requirements	Lack of time – long phone calls associated with process problematic	Prohibitive administrative requirements – e.g. completing paperwork, providing proof of eligibility.	Application and/or installation process is intimidating. Households not always able to engage with the system, or need support to make systems work post installation.
Physical requirements	Not mentioned	Prohibitive physical requirements	Prohibitive physical requirements
Mental energy required to engage with process	Not mentioned	Process of proving eligibility and liaising with different organisations described as draining	Not mentioned
Disruption to household and energy routines	Disruption to household routines – children's nap times, school collection Disruption to tightly organised energy routines – heating is often strictly planned around school	Disruption to household/medical related routines Disruption to equipment/having to move aids. Disruption to energy supply (for households with energy dependent medical equipment). Impact of fluctuating conditions on being able to manage installation.	Where there is a lack of tailored support for someone with a fluctuating condition that might prevent an installation or visit on a particular day, this could lead to a failed installation.
Loss of space	Loss of space		Not mentioned

Installations

Within the WP2 stakeholder interviews, contractors and the installation aspects of delivery were regarded as the element of schemes most complained about by customers, although, some of the larger firms who have dedicated customer service teams were spoken of more highly [WP2 Interviews 28, 29, 30]. Miscommunication and under-preparedness on behalf of the scheme providers and installers was said to leave householders feeling undervalued and frustrated. Many complaints reportedly arose from lack of information or clarity, and disagreements about the details of work [WP2 Interviews 32, 42, 56].

There were mixed experiences amongst the households that went ahead with retrofits. Most respondents reported positive experiences, and suggested an efficient process where information was clear and consistent, the work carried out was as promised (or exceeded expectations), and appropriate support and recognition of specific needs were provided throughout [Household Interviews 7, 3, 2, 1, 30]. Furthermore, in the most positive cases, installers had prior knowledge about the households' needs and took these into consideration during the retrofit:

> *It was streamlined…they had the problem with the asbestos but once that was sorted it just sailed through, the installation was great, all the guys doing it were friendly, very respectful towards me and my needs, they just cracked on with it' [Household Interview 7].*

In some cases householders' additional needs were met by the installer, or through social and familial networks to undertake the necessary preparatory work (e.g. clearing lofts in advance of insulation) [Household Interview 10]. In other cases they were not considered or discussed at all (as described above).

As with the stakeholder interviews, some negative experiences were reported, with two interviewees expressing suspicion and a lack of trust in the workmen themselves [Household Interviews 6, 10], others describing poor workmanship, and damage and mess that wasn't repaired [Household Interview 25]. Technical issues were raised with some householders being unclear about how to use new technology (e.g. a new boiler) or not being provided with enough information/support about how to use it appropriately [Household Interview 6]. Some interviewees suggested that they wouldn't complain about the quality of work undertaken given that it was free [e.g. Household Interview 4], others indicated that when they did complain they were given the impression they should be grateful [Household Interview 22] for any free measure provided. Householders that did complain found the process problematic, taking long periods of time to resolve. Both Household Interviewees 22 and 28 described this as being challenging given their impairments or conditions:

'I was severely anaemic for six months at the time I was trying to sort this out and I'd barely got the energy to get out of bed let alone fight with people over stupid things' [Household Interview 22]

Furthermore, some respondents reported that the impact of energy efficiency measures were negated by the effects of other ongoing problems with their homes that had not been addressed such as draughts, damp, rotten windows, heating systems such as storage heaters, or for example a wet room that was still cold.

Well the thing is it's not the schemes that's wrong, like I said, it's, it's …, well the council setup. The schemes aren't at fault probably, it, it, the, if this place wasn't damp or as bad as it was, everything we had had put in would have worked [Household Interview 8].

Additionally, although some respondents reported a physical benefit in terms of feeling warmer, this did not necessarily translate into economic benefits, with little or no alteration in the amount they were paying for energy (see for example Sorrell, 2007).

Summary: where the customer journey works well

From a household point of view, the most positive overall experiences of the retrofit process were described as 'streamlined' [Household Interviews 7, 3, 2, 1, 30], with consistency throughout the process, clear and accurate information provided at an early stage (helping to allay the concerns raised in Table 4.2), and with eligibility criteria being clear early on [Household Interview 30], rather than being rejected from a scheme later in the process, the work carried out was as promised (or exceeded expectations), and appropriate support and recognition of specific needs were provided throughout [Household Interviews 7, 3, 2, 1, 30]. Furthermore, in the most positive cases, installers had prior knowledge about the households' needs and took these into consideration during the retrofit. Table 4.3 summarises this.

Table 4.3 Where the customer journey works well

	Where it works well	Where it doesn't work
Information	Clear, accurate, consistent, provided early on	Where information is ambiguous, isn't tailored to needs, or isn't considered trustworthy
Eligibility	Transparent, clear early on whether eligible	Rejected once time and energy has been put into process, unclear that a household might be eligible so they don't apply, too generic

Assessment	In person (home visit), same point of contact, personalised to needs	Multiple points of contact, doesn't recognise household needs, phone only (which may lead to a lack of trust in work offered)
Installation	Is flexible to household needs, provides additional physical help if necessary, installers are aware of household needs, explanations provided about how to work technology	No recognition of additional needs, inflexible, disruptive, impersonal, no aftercare offered
Aftercare	Provides swift resolutions to problems that have arisen, household can return to original point of contact	Households left to chase up the problem themselves, many different points of contact

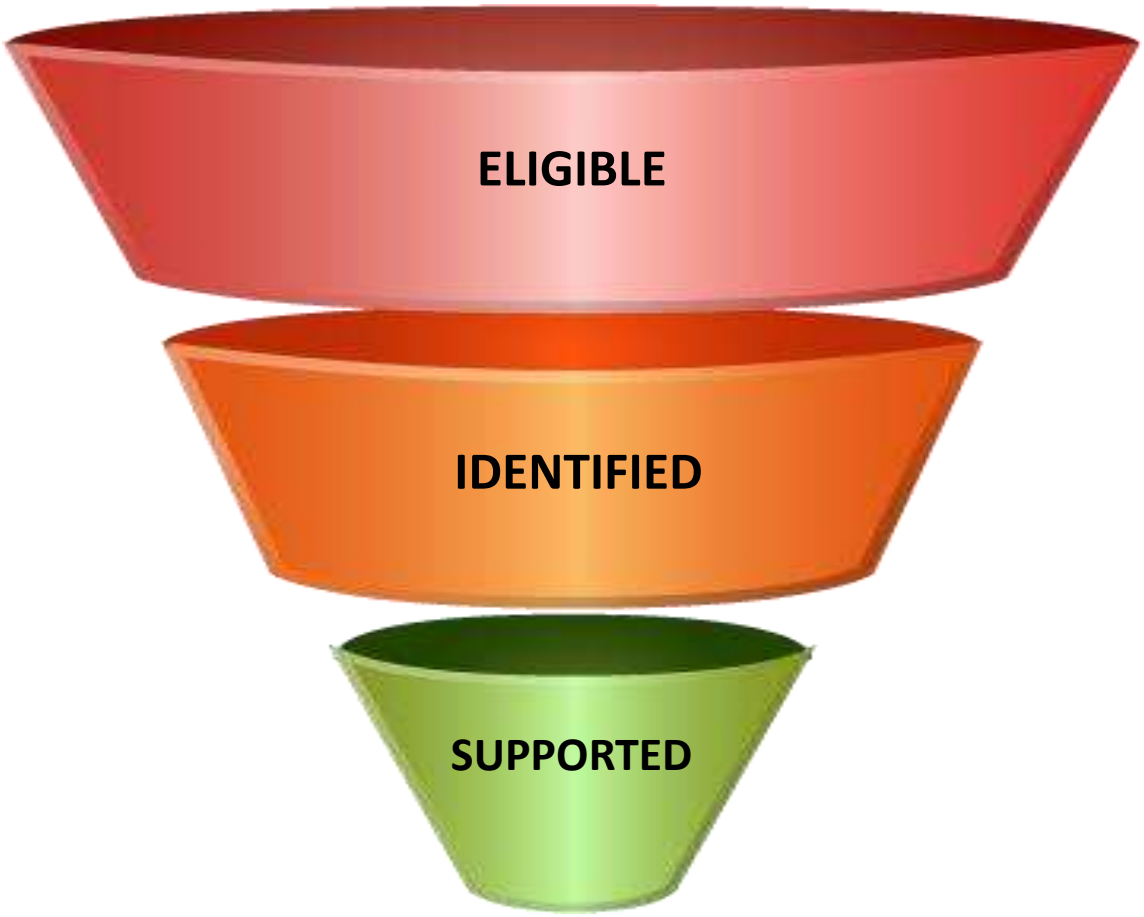
In concluding this chapter it is important to note the positive impact that energy efficiency schemes can have. From a household perspective, most interviewees were very positive about the changes made to their homes, with descriptions of physical benefits of the installations such as feeling warmer.

For those involved in delivering schemes, direct personal wellbeing and mental health improvements were reported for households receiving support, particularly for individuals who spent a lot of time in the home or who were regularly concerned about their energy consumption and bills [WP2 interviews 33, 50, 12, 28]. This was usually the result of improved thermal comfort and finances but was also attributed to indirect factors such as better social relationships and perceptions of their home and its value [WP2 interview 12]. Feelings of self-worth, respect and empowerment were also mentioned, often attributed to the impact of households going through the scheme process successfully, claiming entitlements and gaining control over a costly but essential part of life [WP2 interview 32]. Additionally, several scheme providers reported overseeing retrofit work that had been life-changing for households e.g. for those without hot water or heating because of cost or broken systems and for those living in single rooms or regularly rationing their consumption [WP2 Interviews 16, 18, 35].

Chapter Five: The reach and impact of domestic energy efficiency policies in the UK

This chapter compares and contrasts the findings from the policy and stakeholder interviews with the household interviews in order to consider the impact of domestic energy efficiency policies on low-income families and disabled people. In the absence of quantitative data about the reach of energy efficiency policies (especially with relation to these two groups), the analysis of the qualitative data collected suggests a number of stages where households miss out on the support that they need. Indeed, the findings suggest that existing domestic energy efficiency policy has a funnelling effect in terms of its reach - Figure 5.1. Firstly, households may not be **eligible** for support (either because of eligibility criteria, or a lack of schemes in their area). Secondly, they may not be **identified** – either because they are not targeted by schemes, or because the households themselves have not come forward. Thirdly, schemes may not meet the needs of the household, or households' concerns may not be sufficiently addressed or **supported** to enable take up. These issues are likely to reduce the number of households successfully engaging with energy efficiency measures, raising concerns about distributional justice. As described in Chapter 1, and 3, it is likely that this is caused in part by a failure to fully understand the needs and practices of low-income families and disabled people (recognition justice), and by their lack of voice in both formal and informal decision-making processes (procedural justice). This chapter discusses these points in turn, before considering how these issues might be overcome.

Figure 5.1: The reach of energy efficiency policies



Eligibility - who policy supports

Official eligibility criteria

Across all four countries eligibility criteria restricted the number of households eligible for support, either through income thresholds, passport benefits, tenure, property characteristics, demographic criteria or a mixture of all of these features. In Wales and Scotland more flexibility was reported around eligibility given the mix of funding sources and ability to use ECO funds more flexibility, whereas the English approach was described as highly varied given the reliance on ECO funds (and specific arrangements such as local partnerships between energy companies, installers and local authorities). Northern Ireland's main scheme 'Affordable Warmth' was potentially the one with the most inflexible eligibility criteria, and nor did it take referrals, however, households and areas targeted were based on substantial data about levels of fuel poverty.

Discretion and flexibility during scheme development and implementation was fairly common in all countries, although this often required top-up funding or other sources [WP2 Interviews

10, 14, 16, 20, 21, 24, 25, 26, 29, 30, 32, 33, 43, 48, 54, 57, 60]. This was particularly useful in instances where a household contribution was needed but wasn't viable or where a household was vulnerable but fell 'the wrong side' of eligibility criteria [WP2 Interviews 10, 29, 30, 34]. Such practice was reported more often in Scotland and Wales, where ECO was also available, and in English regions that had secured funding additional to ECO (such as through the health sector).

Eligibility for energy efficiency measures was criticised across the four countries. Absolute income thresholds were criticised as they do not recognise the additional costs that families and those with disabilities often face (an issue described as problematic in Northern Ireland). However, it should be noted though that despite these criticisms, the introduction of a sliding income scale to determine (in part) eligibility for ECO was praised given that it recognised the increased needs of larger families (although, once again, failed to recognise the needs of disabled people).

The use of passport benefits to determine eligibility were discussed throughout both sets of stakeholder interviews. These were thought to be limited because they excluded people who were in need but didn't claim benefits – either because they were ineligible, unaware of entitlement, or because their eligibility fluctuated as a result of their circumstances. Property characteristics were also determined eligibility for schemes. Smaller properties (often occupied by lower income groups, see Boardman et al, 2005) typically receive lower ECO scores and were less likely to be eligible for support. Similarly, 'hard to treat' homes were also considered problematic as they were often too expensive to treat (all countries had spending limits in place).

Other factors determining eligibility

In addition to official eligibility criteria, several other factors determined whether a household would be eligible for support. These factors included the presence/absence of flexible eligibility criteria (usually linked to a particular scheme); the presence/absence of partnerships; specific contractual arrangements within schemes; and geographical factors such as rurality.

In order to help a wider range of households, one action evident throughout the WP2 stakeholder interviews was to bring in additional finance, with fewer conditions attached to it [WP2 interviews 26, 57]. For example, some schemes in Wales replicated the national Nest criteria but added in health conditions as an extra qualifier (which effectively pre-empted the Government's decision to do the same in the latest version of Nest). Across the schemes that had secured additional funding (and thus flexibility) there were many different ways of determining eligibility, including different bands of income threshold relating to levels of subsidy, specific health conditions and the presence of very young children [WP2 interviews 11, 26, 27, 14]. There was no clearly discernible pattern to this targeting, as it was partly linked to the scheme provider's geographical area, expertise and priorities. In England schemes typically included partnerships between mobilised local authorities, the Health Sector, and Energy Companies. These could offer a wider range of support (with no

additional cost to the household), and were able to be more flexible with eligibility criteria (for example, because additional health related funds were matched with ECO finance). This had beneficial impacts for those living in areas with such arrangements in place, but overall the impact was highly uneven.

Linked to this, in England, contractual arrangements between energy companies, supply chains and scheme providers were seen as sometimes negatively affecting the functioning of schemes. Some contracts reportedly limited intermediaries and scheme providers, meaning they couldn't refer households into competing schemes, even if it was in their best interest [WP2 interview 14]. Whilst ECO Flex was in its early stages at the time of this research, similar concerns were raised about it leading to uneven policy delivery (determined by which Local Authorities were able to develop an SOI). It was suggested that the highly varied contractual arrangements led to geographically 'patchy' delivery of support in England. There were discussions about this across the other three nations, however, these were much less pronounced (as they were less dependent on ECO's market-based approach).

An urban/rural divide was also evident across the four nations. The harsher weather of coastal and rural locations meant that scheme delivery often involved more skillful retrofit work e.g. solid wall insulation in remote locations e.g. island communities in Scotland and the west coast of Wales [WP2 interview 24]. As a result it was reportedly difficult to get non-local or non-specialist contractors interested in collaborating on schemes in these areas [WP2 interviews 19, 20].

The impact on households

Eligibility was discussed throughout the household interviews (as outlined in Chapter 4), with interviewees describing a range of factors that made them ineligible. In England, Interviewee 33 described her eligibility for energy and energy efficiency support as varying over time and by scheme. She reported having lost her Warm Home Discount as a result of eligibility changes, and was also ineligible for schemes where her Husband's income was taken into consideration. A similar case was described in Northern Ireland [Household Interview 11]. Differences in eligibility criteria across the four nations also became apparent in the household interviews. For example, in England two interviewees applied for energy efficiency measures but were declined as a result of their housing tenure (one HA resident was encouraged to apply for a scheme by their energy company and were told that the association had declined the support, a second was ineligible because they were in council housing). However, in contrast, a Scottish interviewee reported being actively encouraged by their Housing Association to undergo energy efficiency assessments offered by an energy company [Household Interview 35].

Chapter 1 (Table 1.2) outlined key questions of distributive justice relevant to fuel poverty and energy efficiency. Specific questions considered who was eligible for support, and whether this varied across the four nations. When comparing these findings against the research questions and conceptual review, there are clear issues of 'distributional (in) justice', with households' access to support determined in part by official eligibility criteria,

and in part by where they live. As described in Chapter 1, these issues are reinforced by how the needs of low income families and disabled people have been understood and represented throughout the policy process (procedural and recognition justice).

Table 5.1 dimensions of distributional (in)justice

Driver	Dimension	Findings
Eligibility criteria	Housing Sector	Depending on the country and the scheme some forms of tenure are ineligible.
	Qualifying Benefits	If household does not receive qualifying benefits it will not qualify for support.
	Income Thresholds	Households above an income threshold will not qualify for support.
	Type of property	Smaller properties get lower ECO scores so could be less likely to receive support. Hard to treat homes also ineligible if they are too expensive. There are spending limits in all four countries.
Other factors determining eligibility	Policy arrangements	It is suggested that highly varied contractual arrangements have led to geographically 'patchy' delivery of support and access to schemes in England. This is less pronounced in the three other UK nations.
	Rurality/ climate	It was reportedly difficult to get non-local or non-specialist contractors interested in collaborating on schemes that required more specialist skills, or where economies of scale could not be achieved. Overall this was likely to reduce the availability of schemes in rural or coastal areas.
	Financial contribution	Where any financial contribution is required this can act to exclude households. There is evidence to suggest that in Scotland and Wales public funds can be used to prevent this being necessary, and in parts of England where Local Authorities/Health Partnerships have been able to add top up funds.

Connecting eligible households with schemes

The challenge of finding eligible households

It was evident throughout the WP1 and 2 stakeholder interviews that finding eligible households was highly problematic, and once again this reflects concerns about distributional justice. Eligible households living in middle income areas, the PRS, those not connected into state or third sector services, and those not in receipt of welfare benefits were regarded by interviewees across WP1 and WP2 as some of the hardest to find. For example , scheme providers from all countries talked about the difficulty in targeting PRS tenants and landlords because of a lack of data or communication forums and high levels of transience among tenants, leaving potentially eligible households without awareness and access to support [WP2 interviews 21, 24, 34, 4, 5, 6, 41].

Northern Ireland's policy Affordable Warmth was regarded as the most proactively targeted (and highly praised) as it provided Local Authorities with a list of addresses to contact. Scotland (ABS) and Wales (Arbed) were said to draw on Local Authority knowledge and data to find households. All other policies were reported as placing the onus onto unofficial referral networks/local action/self-referral. Some schemes, often those that linked to large partnerships in the case of ECO, were said by the WP2 stakeholder interviewees to rely heavily on referral partners and 'lead generators' (i.e. proactively seeking eligible households) whereas others were based on wider marketing strategies and relied on households contacting the agent. Some interviewees reported that households found their way into schemes through referrals from crisis organisations.

Scheme providers often reported finding it difficult to get access to sufficient data in order to target households effectively [WP2 Interviews 23, 24, 33]. England and Wales were reported to have significant resourcing and capacity issues at the local level, as compared to Scotland and Northern Ireland. This was attributed to recent cuts to budgets and the loss of expertise and dedicated energy efficiency/fuel poverty teams within local authorities and charities working in the sector [WP2 Interviews 19, 58]. The higher levels of capacity in Scotland and Northern Ireland were attributed to the strong funding for HEEPS: ABS and Affordable Warmth (respectively), and the continued level of expertise and commitment required to deliver them through local authorities i.e. building business cases in Scotland and having dedicated Affordable Warmth teams in each council of Northern Ireland. One illustration of the impact this resourcing and capacity issue had included reports of local authorities in England struggling to resource outreach and marketing activities for schemes.

Ways of finding eligible households

In addressing these issues, the majority of WP2 respondents raised the importance of having proactive targeting built into schemes in order to reach the most vulnerable households. Whilst general targeting was achieved through letter-drops and door knocking, this was considered expensive and not especially well targeted towards the most vulnerable

households. Approaching people at hospitals and health centres yielded mixed results given the situation people in these locations were in, their priorities, and ability to deal with additional information in this context. Similarly, targeting users of crisis services was not regarded as effective for similar reasons. Primary schools were the most often mentioned target with regards to families, much less so with children's centres (although these were more prominent in Northern Ireland, where Sure Start centres are still operating) [WP2 interviews 10, 27, 7].

Some local authorities described liaising across internal Departments to send letters to target households without having to share data specifics [WP2 interviews 23, 24]. Some partnerships (such as the one between Warm Wales and Cardiff City Council) worked closely to combine datasets, for example, starting with EPC ratings and then building in council tax bands, IMD and census data to inform scheme design and targeting (Warm Wales 2016). This also helped with building wider partnerships and linking with local agendas to improve scheme targeting e.g. CCGs and community development agencies.

Scotland and Wales both operate a 'one stop shop' service – through dedicated policy managing agents. In both instances, the managing agent is able to carry out eligibility checks and refer households to any policies / schemes for which they are eligible. The presence / absence of a national policy managing agent impacts on many aspects of policy implementation and scheme delivery. For instance, HES in Scotland is able to receive referrals from any organisation and about energy related enquiry. This is somewhat narrower in Wales, where Nest or Arbed only tend to receive referrals when intermediaries think the household will be eligible, and exclusively about energy efficiency issues. In both cases the presence of the managing agent was regarded as a highly positive way of linking eligible households with schemes, given the agent's 'presence' (i.e. households were more likely to have heard of the agent and be more trusting of it) and its capacity to collect and store multiple sources of data.

Household perspectives

It should be reiterated at this point that numerous household interviewees described accessing information and advice about energy and energy efficiency as a 'minefield'. English households reported using the widest range of information sources, and this is unsurprising given that England has the most variable policy delivery landscape. Despite the presence of advisory services in Scotland and Wales, not all households interviewed were aware of these. However, as indicated above, for those that were aware of such services, there was a suggestion that the 'official' status of these services made them more trustworthy. Furthermore the issues of confusion, trust, perceptions of non-eligibility – the minefield - (described at length in Chapter 4) were not present amongst those households proactively targeted and referred into schemes.

These issues are important as they suggest that the more proactive and targeted energy efficiency schemes are, the more successful they will be in reaching households. Conversely, evidence from the household interviews suggests that relying on generic types of information and leaving households to find out about schemes themselves is likely to be far less successful. These points can also be related to the questions of recognition justice outlined in Table 1.1 where the importance of understanding household needs, and the dangers of making assumptions about their responses to energy efficiency advice and support are highlighted. The interplay between recognition justice and distributional justice is clear here - where vulnerable households are actively recognised and sought out, they may be more likely to access energy efficiency improvements.

Supporting households

The need to understand what households need and how they behave

So far the data presented in this report has identified a potential mismatch between the way in which energy efficiency information, advice, and support is provided, and the needs and concerns of low-income families and disabled people. Chapter 4 presented a detailed account of these issues, identifying a number of barriers that might prevent a household from applying for an energy efficiency scheme, or that might lead to their withdrawal from it. Again, this has resonance with the questions raised in Chapter 1 about recognition justice, with the suggestion that current policy approaches do not always align with household needs. At present, there is little academic or policy evidence about how households access and engage with information relating to energy and energy efficiency, and the impact of this information on decision making. Instead, existing research focuses on the quality and relevance of the information provided. Moreover, little is known about experiences of attempting to engage with retrofit from a household point of view. The following attempts to provide a deeper understanding of these issues, and to consider how policies, policy makers, and installers might engage with households more successfully.

Relating to energy efficiency information

It is clear from the data presented in Chapter 4 that households access information about energy[12] in a variety of ways, and this influences their perceptions of and engagement with schemes. For example, households that were given eligibility checks and advice as part of wider social welfare measures (e.g. as part of a suite of benefit checks) reported high levels of trust in the information provided, and those providing it. Likewise, where households had the opportunity to discuss retrofit measures with people in a similar position (either through social networking or social networks) higher levels of trust in the process were reported. Conversely, where households sought out this information themselves (usually online), the diversity and volume of information available led to a sense of confusion about which measures to undertake and who to undertake them with, something which was compounded

[12] Households do not distinguish between different types of information – e.g. billing, metering, energy efficiency measures.

by a lack of trust in the private sector. Where households responded to information they had received, there was less evidence to suggest they were confused about the measures (it is also likely that offers will be limited to particular measures such as a new boiler), however, there was a similar sense of cynicism about what was being offered, why and by who. Whilst these points echo existing literature about mistrust in the energy industry (ERP 2016), the difficulties of accessing trusted information (DECC 2012) and the positive impact of social and familial networks (Policy Connect 2016, Fornara et al 2015: 8, Gillich and Sunikka-Blank 2013), they raise a number of additional points relating to: a household's ability to access information; household perceptions and assumptions; and negotiating the 'information minefield'.

The ability of households to access information: Some disabled respondents described difficulties in accessing/processing information online, or making trips to information support services. Furthermore, parents of young children described having little time to investigate and digest information. Where friends and family or third parties were able to provide support, this mitigated the effect to some extent, however, this continued to act a further barrier to households acting on energy efficiency information.

Household perceptions and assumptions: there is evidence throughout the literature that households have beliefs about particular measures, their effectiveness, and the installation process – including mess and disruption (Houses of Parliament Parliamentary Office of Science and Technology 2017, Mallaband et al 2012, Caird et al 2008, Scott et al 2013, ERP 2006). Once again, whilst these points were present within our data, an additional issue emerged. Households often made assumptions about their own eligibility, assuming for example, that being in the PRS would rule them out, or that the landlord would have the right to object to the installation of measures. However, where eligibility criteria were laid out from the outset – either as a result of eligibility checks made on behalf of the household, or a list of qualifying criteria was made clear, households were much keener to pursue measures. Households using social media and familial networks had more access to informal information about eligibility criteria, and this appeared to give them confidence to apply for measures. However, for other households these assumptions prevented them from investigating any further.

Bypassing the 'information minefield': the data presented suggests that from a household point of view, retrofit measures were only considered desirable if they met the wider needs of the household. For these households the risk of additional costs (direct or indirect) and disruption to routines (some of which are life supporting) were concerns over and above those identified in the literature. Whilst there is no guarantee that the quality of work will be any better or that the measures will be the most appropriate, households receiving information through social networks, or who are given an eligibility check and an immediate referral, did not have to negotiate the same 'information minefield' about which measures to seek out and who to trust. Arguably these households had one less barrier to overcome, and given their risk averse behaviours, they may be more likely to progress to the application and installation process.

Meeting the needs of vulnerable groups during the retrofit

The wider literature indicates a fear of disruption, hassle and mess (Houses of Parliament Parliamentary Office of Science and Technology 2017, Mallaband et al 2012, Caird et al 2008, Scott et al 2013, ERP 2006) and are central to DEFRA (2004) and EST's (ND) analysis of barriers to adoption of energy efficiency measures. Whilst these concerns are echoed within our data, what appears to be more prominent is a concern about the needs of the household being taken into consideration and met throughout the retrofit process. In some cases those involved in the retrofit were aware of these and were able to give assurances about how they would be met, and accommodate them – e.g. give appropriate notice or be flexible with times, explain what would happen, help with physical requirements (e.g. moving items) warn about any potential costs (e.g. redecoration). These households tended to have positive experiences of retrofit. On the other hand, where time was not taken to explore these issues and where the pre-installation checks were carried out by phone or very briefly in person, there was a higher perception of risk and uncertainty that led to drop out, or only partial installation in extreme cases.

Overall experiences of retrofit itself were in line with existing literature – there were positive experiences, as well as some problems with poor quality work, mess and delays. The most positive experiences suggested an efficient, streamlined process where information was clear and consistent, the work carried out was as promised (or exceeded expectations), and appropriate support and recognition of need was provided throughout. What was distinct was the impact of poor quality work on households, for example, several highlighted the difficulty of managing the complaints process alongside a health condition. In line with Gilbertson et al's (2006) research, several households reported being met with the attitude that they should be grateful for receiving the retrofit free of charge, regardless of its quality. This experience highlights one aspect of recognition justice in the way that a sense of stigma and disempowerment is reinforced because of the household's perception that the presence of an impairment or condition affects how they are treated and responded to:

> *'They kept saying things that implied that I should just be grateful but I was looking at my house and thinking, you've come round here and you've done a terrible job and it looks awful and you're telling me I should be grateful? You know! But I think that's quite a common attitude isn't it with charities that are working with the disabled, they feel like they're doing a good thing so they're patting themselves on the back and not really noticing that they're not doing the best of jobs so I'd be sceptical about getting anything like that again after the quality of the job and the amount of hassle it was to get it sorted out' [Household Interview 22].*

The findings indicate the need for a tailored retrofit process that puts the household and its needs at its centre which may be at odds with existing policy that encourages scale, numbers, and market forces. This echoes previous research that suggests that there is a potential

mismatch between household energy needs and the provision of retrofit measures (e.g. Mallaband et al 2012, Judson and Maller, 2015; Crosbie and Baker, 2010; EP, 2016).

As described throughout this report, households may need a range of forms of support in order to allow them to go ahead with an installation. According to WP2 stakeholder interviews Scottish and Welsh schemes run by EST benefited from specific training and procedures for meeting the needs and expectations of vulnerable groups. This level of support is not formalised in England or Northern Ireland, where local authorities, energy companies and other scheme providers are responsible for their own service standards and rarely – at least within our evidence base – trained staff in such a way. They did, however, sometimes work in partnership with vulnerable groups' representatives and organisations – although this was typically intended to increase uptake and help with marketing rather than provide an embedded role for them in scheme delivery. Within England, this partnership work was described as 'patchy', with some local authorities being better informed and having greater capacity than others [WP2 Interviews 27, 48, 50, 53].

Encouraging take up

Regardless of a household's circumstances, there are pervasive and multifaceted barriers that prevent retrofits from being undertaken. As Fuller et al (2010) argue, simply providing information and financing does not do enough to overcome these barriers. Whilst the literature suggests that marketing campaigns have been insufficiently focused on the wider benefits of energy efficiency measures, there is no particular evidence to suggest that households have been put off by campaign messages, but instead are uncertain about which offers to trust and which to disregard. As such the provision of information needs to be improved, and there needs to be greater recognition of different ways in which households engage with it. What is very clear from the data is that where households are given information and advice from trusted sources they are more confident about acting on this. Furthermore, if they are provided with consistent and sufficient support throughout the retrofit process they are less likely withdraw from it. Whilst this may be time consuming for public sector/third sector organisations, it has the potential to increase the number of successful retrofits and reduce levels of fuel poverty.

The potential value of social media and social and familial networks in providing information and advice should not be underestimated. Where this is based on positive experience and accurate information this is a positive driver for take up, however, where this is not the case, and it is the only trusted source of information this may reinforce preconceptions. In order to make the best of this, several pieces of research highlight the importance of community based initiatives (for example a retrofit show home) where households can see for themselves what work entails and its positive effects, and talk to people who have undergone retrofits themselves (Policy Connect 2016, Fornara et al 2015: 9). Taking this further, Gillich and Sunikka-Blank (2013: 419) recommend a community based outreach strategy 'centred around the idea of using trusted messengers to recruit homeowners onto the 'food-chain of sustainable energy use'. Whilst these recommendations are not aimed specifically at vulnerable groups, given the highly risk averse behaviours and the need for clear and reliable information described above, adopting such approaches may help provide a more bespoke

experience, and has the potential to draw on existing social and familial networks. It is beyond the scope of this project to suggest that online social networks could be used to encourage take-up, but given the importance of various forums and online groups to interviewees, there is the need for more research on this topic.

Households reported needing time to discuss specific needs before making a final decision about retrofitting. In some cases these discussions were had, whereas in others it was very limited and focused more on the physical building than the household within it. In their US based study Gillich and Sunikka-Blank (2013) suggest a disconnection between contractors and programmes, citing cases where contractors are simply sent to undertake work and have no role or stake in the broader process. Whilst there are examples of good practice in the UK the marketised energy efficiency landscape lends itself to these types of arrangements. Contractors may have limited knowledge about the household and its needs, and little time or incentive to gather this information, instead focusing on the physical properties of the building. Gillich and Sunikka-Blank (2013) argue that contractors should be incentivised to promote the schemes that they are involved in given that they are likely to have more contact with consumers than programme operators. Whilst this recommendation is made in order to help the reputation of the scheme, if contractors have a greater stake in the process or are incentivised to work in different ways, this may enable the flexibility and additional forms of support required by some vulnerable households.

Chapter Six: Headline findings and policy recommendations

This chapter summarises the main research findings and highlights where policy and practice addresses the needs of disabled people and households with children on low incomes. Five substantive themes emerged from the research:

Headline findings and recommendations

Five substantive themes emerged from the research:

1. 'The numbers game';
2. Households in need are not always eligible;
3. Households are difficult to find;
4. A Failure to understand households' needs
5. Eco delivery is 'patchy'.

Headline Finding One: the numbers game

Current challenges

Current energy efficiency policy design leads to an emphasis on meeting targets at the lowest cost, 'the numbers game'. Specifically:

- Energy advisors are not always able to recommend the energy measures that would be best suited to the property and the household living there, and instead are limited to centrally defined, inflexible targets that restrict the types of interventions available.
- The drive to reduce costs has also resulted in more households being required to make financial contributions to enable retrofit work to go ahead. It is clear from our research that this is a substantial barrier to taking up measures.
- Disabled people and families often live in the poorest quality houses and have additional needs that require support throughout the retrofit process. This can make it more expensive for scheme providers and installers to reach these households and treat their homes. Incentives to deliver targets at least cost have resulted in these households being side lined.
- Short-term programmes, and their associated targets, do not allow time for thorough evaluation and the development of more effective approaches to implementation.
- Evidence gathering is reduced to aggregate quantification of measures installed rather than the qualitative impact on people's lives. Programmes in Scotland and Wales with different priorities and targets can soften the effects of ECO delivery as they are able to draw down additional funds. Local authority ECO Flexibility can also play a role, putting vulnerable households at the centre of delivery, but only where

proactive local councils have published a Statement of Intent (SOI) and have funding and resources dedicated to eradicating fuel poverty at a local level

Where existing practice works well

Tax payer funded schemes typically place their emphasis on households rather than on buildings and are grounded in social policy (e.g. fuel poverty alleviation). Consequently, they are less driven by volume targets and are less regressive since they are not funded from levies on energy bills. While such schemes operate in Scotland, Wales and Northern Ireland, there has been no tax payer funded scheme in England since Warm Front was closed in 2013. The schemes in Scotland and Wales, plus some local council and partnership offerings in England, can provide match funding for ECO, thus minimising the need for household contributions. Scotland in particular has been highly successful in working in this way. This activity is likely to help more people in need regardless of specific eligibility criteria and could drive up the number of households receiving support.

How policy could be improved – rethink policy targets

There has often been internal conflict between policy and programmes that sought to tackle environmental and social objectives simultaneously. Policymakers should recognise that there needs to be dedicated focus on fuel poverty alleviation and rethink how action is guided and how targets are set. We recommend that a taxpayer funded scheme is reintroduced in England, and that fuel poverty alleviation is considered in social policy terms. If programmes such as ECO continue to support vulnerable households, there needs to be a greater emphasis on the positive impact of intervention to the household rather than a focus on least cost.

Headline Finding Two: households in need are not always eligible

Current challenges

Where eligibility criteria are inflexible, vulnerable households, including disabled people and low income families, may find they are unable to access support despite being in need. Whilst stakeholders considered that some progress has been made on this issue in ECO2 through the introduction of local authority ECO Flexibility, which enables councils to set extended eligibility criteria, this is dependent on whether councils are proactive in having a Statement of Intent (SOI) in place. While eligibility criteria have been expanded under ECO3, much more needs to be done to support households that fall foul of funding conditions. In addition, in some cases, the availability of funding may vary according to the period that ECO is in. For example, the availability of funding may be reduced when ECO obligated suppliers and their delivery agents are close to meeting their targets and offerings are closed to households.

Where existing practice works well

Where match funding for ECO can be found, such as through dedicated tax payer funded fuel poverty schemes, partnership working or local government contributions, this is likely to help more people in need regardless of specific eligibility criteria. It was reported by stakeholders that there is much more flexibility to top up support in Scotland and Wales, whereas activity in England was far more variable.

How policy could be improved – make eligibility as stable and consistent as possible

National government should promote longer term delivery models to prevent households being turned away from support where ECO delivery agents are close to meeting their targets. National government should do more to support and promote the development of local authority ECO Flexibility across all local government areas and consider the possibility of additional flexible eligibility criteria being used across national policy. Clear, equitable and stable eligibility criteria need to be developed so that referral agencies and households have confidence households will meet eligibility criteria.

Headline Finding Three: households are difficult to find

Current challenges

Often households are highly risk averse and suspicious about offers of energy measures, especially if these come through the private sector, including energy companies. During interviews, some households noted that they are unable to negotiate the 'information minefield', whilst others noted that they were reluctant, or unable, to share personal information with scheme providers. Such households may miss out on support that they are entitled to as a result. In addition, obligated energy suppliers have in the past relied heavily on referral partners and 'lead generators', whereas others used broad marketing strategies, relying on households to make contact with them or their agents. Without proactive targeting and promotion of schemes, some families and disabled people who are either socially isolated or not engaged in typical communication channels miss out on support. This is most notable in England where access typically relies on local arrangements, and impact varies substantially as a result. Whilst the health and social care sectors have some insight into the location of vulnerable households, and may be well placed to make referrals into energy efficiency schemes, their time and resources are restricted. Furthermore, in many instances caseworkers have nowhere to make referrals to. Our evidence shows that where such trusted intermediaries are absent or under-resourced, schemes struggle to reach vulnerable households. Such trusted intermediaries are therefore essential for facilitating access to fuel poverty support schemes.

Whilst Northern Ireland is considered the leader in terms of targeting households, Scotland and Wales have made progress in targeting specific households. England remains behind in this area.

Where existing practice works well

Greater success in terms of take up was reported where there was consideration of who is involved in marketing - messages from the public and voluntary sectors were considered most trustworthy by our households compared to the private sector. These intermediaries have community knowledge and can identify households in need and are more likely to be trusted compared to other organisations.

Word of mouth is a key factor determining levels of uptake of energy efficiency measures. Households want to understand what the works will entail, and this can improve uptake. The value of social media should not be underestimated. Households interviewed as part of this research used social media to find out more about schemes and discuss eligibility, sharing

information and photographs, and discussing the risk of potential mess and disruption. Interestingly households using social media were less concerned about the trustworthiness of the information they received compared to those contacting their energy company. This was because individuals were sharing their experiences and making the unknown, known.

How policy could be improved – improve mechanisms for finding households

Delivery agents need to capture how well schemes support vulnerable groups. We recommend that monitoring should be implemented to determine whether programmes are effectively targeting vulnerable groups. As part of this, there needs to be greater access to quality data, data matching and data sharing to enable households to be targeted more effectively.

In more general terms, the trustworthiness of energy efficiency programmes needs to be improved, most notably in England. Once again, a clear, recognisable scheme, backed by national government may be the solution to this, especially one supported by or delivered through trusted intermediaries. With an emphasis on the role of trusted intermediaries, formal recognition to their role needs to be given and resources allocated. Furthermore, intermediaries need to be clear about how and where to refer a household, and they need to be confident that referrals will not waste a householder's time or raise their expectations unnecessarily.

Headline Finding Four: a failure to understand needs

Current challenges

Policy design and implementation does not take into account how households engage with energy efficiency. This means that the design and implementation of measures is blunt and potentially ineffective for some households. Whilst many households expressed a preference for face-to-face advice, such intensive support is difficult to resource. The Government's digitalisation agenda now means that there are now limited advice options for households. Despite this, households undergoing work may drop out of schemes if their needs are not taken into consideration. This may also prevent households from taking up support and improving their properties and their lives.

Where existing practice works well

The most vulnerable fuel poor households often need more support than the retrofit of energy efficiency measures to take them out of fuel poverty, such as income maximisation and tariff support. Households were more inclined to apply for energy efficiency schemes if these support options had been achieved and where trust had been built with intermediaries (e.g. a successful Warm Homes Discount Scheme or a debt relief application). The use of 'one-stop-shops' was the preferred approach of policymakers and practitioners alike. For example, in Scotland there is a single agency that offers advice and installation work and this has proved instrumental in the successful delivery of programmes. Different aspects of a customer journey were said to reduce drop-out rates:

- Home visits are considered an essential part of ensuring scheme uptake among vulnerable groups.

- A clear plan of action agreed with the household in advance in order to address specific needs of the household. This action plan detailed the most appropriate work for the household, any additional support that they required during the process (including moving furniture), what to expect, when works would take place, and for how long.
- Informed installers: installers need sufficient information, knowledge, and understanding of the needs of the household.
- Having a single point of contact throughout the duration of a household's involvement in a scheme is useful for building trust and oversight.
- The inclusion of advocacy services and agencies (i.e. trusted intermediaries) during delivery can provide additional support.

How policy could be improved – focus on the needs of households, and how they use and engage with energy, instead of the current focus on technical improvements to buildings

There should be improved consultation and participation with key groups and charities representing vulnerable groups to help the energy efficiency industry understand their needs. Customer journeys must support all households through the process, recognising different needs.

Trusted intermediaries are essential for facilitating access to support, and where they are absent or under-resourced then our evidence suggests that energy efficiency schemes struggle to reach and retain vulnerable households throughout the process. If they are to continue in this role, formal recognition to their role needs to be given and resources allocated.

Headline Finding Five: ECO delivery is patchy

Current challenges

The different ECO delivery models often lead to differences in terms of the support that is available and how it is delivered. Success can depend on the level of match funding available, the nature of contracts between delivery agents and obligated energy suppliers, suppliers' progress towards ECO targets and the proactive use of Local Authority ECO Flexibility Statements of Intent. Different ways of working can also make delivery complex and problematic. For example, local authority procurement works very differently to private sector business models.

This all leads to complex and variable delivery across Great Britain. This is particularly true in England where a scheme's success often depends on local actors, such as engaged local authorities and the health and voluntary sectors. However, these are under resourced and have many other priorities. As there is no single strong and consistent approach in England, intermediaries find it difficult to refer households into schemes and as a result it is harder to support vulnerable households.

Where existing practice works well

Once again, approaches in Scotland and Wales tend to be less 'patchy'. Both Scotland and Wales have been able to combine funding sources to address some of the issues that exist with ECO. In England this has been achieved through partnership working, yet this approach depends on the resourcing and objectives of the different actors.

How policy could be improved – aim for consistent outcomes for households wherever they live

In England, intermediaries need to be clear about how and where to refer a household, and they need to be confident that referrals will not waste a householder's time or raise their expectations unnecessarily. The government should consider re-introducing a treasury funded scheme in England, similar to those operating in Northern Ireland, Scotland and Wales.

Chapter Seven: Conclusion - policy pathways to justice

Policy pathways to justice

In addition to supporting the eradication of fuel poverty, energy efficiency policies can lead to improvements of health and well-being in UK households, with a variety of benefits including a reduction in the burden on the NHS. Policies can also support economic growth in the energy efficiency sector and potentially reduce carbon emissions. Yet, energy efficiency and fuel poverty policy and programmes have been in continual flux over recent years. Action needs to be taken on energy justice – in terms of recognition, procedural and distributive justice – to ensure that the needs of disabled people and families on low incomes are addressed. This section draws sets out possible directions for future policy, clustered under the three headings of recognition, procedural and distributive justice.

Policy pathways to recognition justice

Our findings have highlighted current ways in which practitioners are enabling greater recognition of the needs of households who live with, or are at risk of experiencing, fuel poverty. Nevertheless, far greater attention needs to be paid to issues of recognition justice – most notably not only the way that households engage with energy, but also the way that energy efficiency schemes engage effectively with households. This focus needs to relate not only to understanding the variety of needs and experiences at the level of individual households, but also to how policymakers (from local level to national; across different sectors such as energy, health and housing) recognise and act on fuel poverty. Specifically, the findings have highlighted three main areas relating to recognition justice.

The findings have highlighted how the eligibility criteria that entitle households to energy efficiency measures can raise issues of recognition justice. The use of passport benefits, income thresholds, demographic characteristics, tenure, or property characteristics as eligibility criteria will all, by their nature, exclude some households that are in need, or are so complex that households exclude themselves. Policies such as ECO Flexibility have the potential to overcome some of these issues, allowing local authorities to make judgements about household need, and to support households that fall foul of existing eligibility criteria. However, this relies on a Local Authority's knowledge of vulnerable groups in its area, and capacity to act (see *Distributional Justice* below).

The importance of recognising and treating the households' needs holistically was highlighted. In part, this was to ensure that energy efficiency interventions had their intended impact - for example – if a new heating system was installed but the household could not afford to use it this would negate its benefits, however, if entitlement checks for Warm Home Discount/other cash based benefits were also made this would have a much greater overall impact.

Issues around being able to recognise, understand, and respond to households' needs were raised. Some organisations did not have the capacity, skills or knowledge to support households. Other, often larger, organisations had specialist teams trained in the needs of vulnerable customers, and were more able to identify where additional support might be necessary. However, even where household needs were acknowledged, these could often be

lost in the long supply chains associated with the UK's current energy efficiency market, and whilst the organisation providing the initial eligibility checks might have been aware of a households' needs, the installers entering the home were not. Within this research the importance of intermediaries (often charities, but also through local authority departments not traditionally associated with fuel poverty) in both finding and supporting vulnerable households was highlighted, given their knowledge of household needs. In the most positive cases intermediaries were able to locate eligible households and support them through both the application and installation process. Whilst intermediaries are often overstretched, and may not naturally engage with issues of energy efficiency, the potential offered by this sector, if sufficiently funded, is clear.

To enhance recognition justice the findings from this project suggest the importance of putting the needs of vulnerable households at the centre of energy efficiency policy, rather than being driven by policy settings or mechanisms (e.g. eligibility criteria and supply chains). Considering households' wider circumstances and needs is essential, where possible, households should be supported holistically, with entitlement to energy efficiency measures being one aspect of a wider set of benefits checks and support offered. Whilst considered hard to reach by those delivering energy efficiency policies, there is substantial knowledge about how to locate vulnerable households and support them within other sectors, and the challenge for energy efficiency policy is to harness this.

Policy pathways to procedural justice

Our findings have highlighted ways in which procedural justice - making sure that the voices of individuals, as well as the organisations that represent the diverse needs of disabled people, and families on low incomes, can be heard and taken on board, by policymakers at local and national level. Specifically, the findings have highlighted three main levels where issues relating to procedural justice are raised.

Procedural justice typically considers issues of participation within policy development and implementation. In British policy making (ECO) organisations representing disabled people and families have had a limited presence in consultation processes. This not only limits the level of consideration of these groups views in decision making but can also reinforce a perceived disengagement / lack of cross-sector policymaking. There is also evidence to suggest a lack of detailed and systematic evaluations of energy efficiency policies and programmes at the household level. However, it should be noted that more active engagement at both ends of the policy process was reported in Scotland, Wales and Northern Ireland.

At the scheme level there was substantial evidence of joint working both through formal partnerships and *ad hoc* arrangements. Energy efficiency advice/fuel poverty support was offered in a variety of settings including Children's Centres, hospitals, charities, and GP surgeries. These forms of collaborative working aimed to improve take up of measures by both finding vulnerable households and being able to consider their energy needs in a trusted environment. Partnerships of this nature (formal or otherwise) allowed the knowledge and skills of the non-energy sector, and to some extent the needs of vulnerable groups, to be considered within policy delivery.

At the individual level, whilst current domestic energy efficiency policy aims to support the most vulnerable fuel poor households through the provision of home improvements, what

has been underestimated by policymakers is the high levels of mistrust that many households have in the energy industry. For households with additional or complex needs, the combination of mistrust and perceived risks of needs not being addressed sufficiently may outbalance the potential benefits of energy efficiency measures.

To enhance procedural justice there is a need for vulnerable households' voices to be heard throughout the policy process. At present, especially with relation to ECO, the voices of vulnerable groups are not being systematically sought during policy development. This is likely to impact on all aspects of policy delivery including the setting of targets, eligibility criteria, and funding priorities. At the end of the policy process household level evaluation is essential in order to enable future policy learning. The role of trusted intermediaries is once again prominent as a research finding here, with the potential for vulnerable groups' needs being addressed through the range of formal and informal partnerships that exist. However, as noted elsewhere, whilst this approach can prove successful in finding and supporting households, it must be met with adequate resources and a robust system to refer eligible households into. Finally, in order to implement policy more successfully in the future, it needs to be considered trustworthy by households. In the short term, those referring households into schemes need to be clear about how and where to make a referral, and they need to be confident that referrals will not waste a householder's time or raise their expectations unnecessarily. In more general terms the trustworthiness of energy efficiency policies and schemes needs to be improved, most notably in England. Once again, a clear, recognisable scheme, backed by national government may be the solution to this.

Policy Pathways to distributive justice

Our findings have identified a number of issues of distributive (in) justice. Disparities in terms of access to measures exist within each country of the UK, and across all four. In England substantial local and regional disparities are evident, for example, where some local authorities have worked successfully with other sectors or with ECO Flexibility to access funds, and others have not had the capacity to do so. Moreover, cross-national comparisons indicate that Scotland has consistently delivered more measures per household via ECO than England (see Chapter 3) as a result of its policy of providing additional treasury funded resources. The emphasis on a supplier led focus in England leads to questions about the regressivity of this type of approach. Ironically, greater attention on households living in vulnerable situations - with subsequent higher costs involved - accentuates the regressive nature of this type of funding for those households who continue to miss out on support.

Rural communities and those in costal locations have also been identified as more expensive to deliver measures to and, despite rhetoric about supporting these areas, are less likely to receive measures in their current form. The emphasis on the private housing sector, and restrictions around social housing have also affected how support has been delivered, and to who, with some households in need in the Social Rented Sector being ineligible. Equally, ECO settings/scores have historically encouraged an emphasis on larger houses (given the way that ECO scores are calculated), despite more vulnerable households often residing in smaller houses. Linked to this the way in which competition within ECO works (via long supply chains, contacting and so on) can mean that households may not always be referred into the most appropriate schemes, regardless of their needs. Finally, there are instances of households in England (or landlords in the case of Northern Ireland) being asked to make financial contributions, which for those on low incomes has usually been prohibitively

expensive. As highlighted throughout this report, vulnerable households are difficult to find, and many of the factors identified above make it harder to locate those eligible for support (because eligibility is so complex) and to provide appropriate support for them in a consistent manner.

In order to address issues of distributive justice a key objective should be to aim for consistent outcomes for households wherever they live, both within the different UK nations and between them. In terms of finding households better data, data matching and data sharing is necessary if households are going to be targeted more effectively. Whilst Northern Ireland is the leader in terms of this approach, and Scotland and Wales have also targeted specific areas of concern, England remains behind, often relying on pro active local authorities partnerships, referral networks, and in many cases individuals to come forward and ask for support. The use of energy 'one stop shops' may enable greater consistency – for example, in Scotland there is a single agency that offers advice and installation work, compared with England's highly variable policy landscape. Whilst one stop shops have limitations, they provide a clear route for referrals to be made, have a clear 'safe' identity that is removed from some of the less trusted elements of the energy industry, and can become a data hub.

In England, whilst ECO Flexibility is to be welcomed, it has the potential to add disparity between areas, with households in the most mobilised local authorities, with the greatest capacity, benefiting at the cost of those in the least mobilised. Arguably more flexibility within eligibility criteria built into policy at the national level may reduce these local effects. Finally, given the variability of English policy delivery, we recommend that a national scheme is reintroduced in England, rather than relying on proactive local authorities and household contributions, in order to end the effects of the 'postcode lottery'.

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Appendix – Topic Guides

TOPIC GUIDES – WP1

Introduction [5 minutes]

Begin with reminder of purpose and likely length of conversation, as explained previously via email.

A: Scene setting / strategic questions [10 – 15 minutes]

To be asked only when speaking to policymakers and stakeholders with high level knowledge of the policy landscape. When interviewing other policymakers, go straight to C.

Thinking first about overall energy efficiency policy first, and the extent to which this focuses on particular groups…

Looking at the UK or GB-wide level first…

A1: What are the underlying rationale and principles of current UK/GB-wide energy efficiency policy? Have these changed over time? If so how/why?.

A2: In your view, which UK/GB policies, strategies and programmes are overtly targeted towards specific groups, which less so, and which not at all?

A3: Thinking about the overall mix at the UK/GB level, how would you characterise the balance of policies/strategies/programmes' emphasis on different household groups?

A4: Thinking about policy and programmes at the UK/GB level in the last 5 years or so, do you think the balance in emphasis on different types of household has changed? If so, how and why? And what future changes do you think there are likely to be?

A5: Now thinking about England/Scotland/Wales/NI [select as appropriate], what are the underlying rationale and principles, and have these changed over time? If so how/why?

A6: What is particularly distinct about the overall approach in England/Scotland/Wales/NI [select as appropriate] when compared with approaches in the other UK nations?

A7: Again, thinking about England/Scotland/Wales/NI [select as appropriate], which policies, strategies and programmes are overtly targeted towards specific groups, which less so, and which not at all?

A8: Thinking about the overall mix in England/Scotland/Wales/NI [select as appropriate], how would you characterise the balance of policies/strategies/programmes' emphasis on different household groups?

B: Policy [15 – 20 minutes]

I'd like now to focus specifically on policy. By policy I mean high level statements of intent, strategies or targets. We will come on to programmes (ie the mechanisms used to put the policies into practice) later. I'd like you to consider policy at both the UK/GB wide level and also in England/Scotland/Wales/NI [select as appropriate].

B1: What particular groups of households (whether fuel poor or not) do you think energy efficiency and fuel poverty policy is focusing on?

B2: In your view, why is policy focusing on these groups?

B2.1: Were these groups, or their representatives, able to access the decision-making process as policy was developed?

For policy officials: how do you gather input from vulnerable groups? How responsive are

For charities / campaign groups: how do you influence policy development?

B2.2: How did they achieve this? What methods were used to engage these households and/or their representatives? Who represented them?

For policy officials: how do you contact people? Are there any views that are difficult to get or to relate back to policy?

B2.3: In what ways were the views of these groups taken into account?

For policy officials: do you think you understand clearly the perspective of vulnerable groups? How do you record and respond to their input?

B3: Are there any particular groups of households that, in your opinion, should be the focus of policy but are not? How have you identified these gaps/missing groups?

B4: Why isn't policy focusing on these groups? Why do you think it should?

B4.1: Have these groups or their representatives been able to access the decision-making process as policy was developed?

B4.2: If not, why not? If they have, why haven't their views been taken into account?

B5: how do you think these particular groups are represented by policy?

B5.1: what are the main assumptions about these groups (e.g. their vulnerability) and about why/how policy should target them?

B5.2: are these groups and their specific needs portrayed fairly? Could or should they be portrayed differently?

Keeping the focus on families with children and people with disabilities /long term health

Then, for each programme in turn, ask the questions in section C

C: Programmes [up to 15 minutes for high level policy people (depending on time taken on earlier sections and willingness to continue); 20 - 30 minutes for others]

For interviewees who have not answered questions in sections A and B:

In this project, we are interested in families with children and people with disabilities / long-term health conditions. Therefore, could you think about these groups in particular, and the extent to which fuel poverty policy/strategy is focused towards them, when talking about the programmes that we are going to discuss

C1: How (if at all) and to what extent has [programme name] been designed to deliver in practice policy aims and focus?

C2: Is [programme name] reaching the families with children and people with disabilities/long-term health conditions that are targeted by policy? Which specific groups are they reaching most effectively?

C3: Assuming that [programme name] does reach these families, does it do so successfully? Why/why not? And how would you characterise 'success'?

C4: Are there any challenges for programmes in trying to reach certain groups? Which challenges are common for each of the groups we are interested in?

C5: Once target groups have been reached, what other challenges do programmes face when engaging with vulnerable households (in particular in the groups of interest to us)? Why?

C6: What are the consequences of not adequately reaching and helping these vulnerable groups, and what can be done in response?

D: Close [2 minutes]

Thank for taking part, Explain next steps

TOPIC GUIDE: Stakeholders WP2

Introduction

We want to compare the energy efficiency policies of each UK nation. Specifically, investigating how policy design and implementation relates to two vulnerable groups; disabled people and low-income families with young children.

Vulnerable groups

Disabled people and low-income families with young children are defined by policy as being particularly vulnerable to the causes and effects of fuel poverty.

In your experience / understanding, what specific issues do these groups face?

- Energy
- Health and well-being
- Social relations
- Political representation and engagement with schemes
- Wider / additional support necessary to get to a stage where energy efficiency is even a priority or viable
- What makes them vulnerable?
- Individual and household level issues
- Social structures
- How do we know this?
- Empirical evidence
- Input from advocacy groups
- Anecdotal evidence

Policy design

What is the policy designed to do?

- In principle / in practice
- Co-benefits and unintended consequences

How does the policy relate to the two vulnerable groups?

- Needs
- Identification
- Protection

How was the policy / scheme designed?

- Input from vulnerable groups / their representatives
- Training / protocol for engaging with vulnerable groups at home

Policy implementation (Scheme delivery)

What aspects of policy implementation (delivering energy efficiency schemes) have you been involved in?

- How has the policy been implemented and what are the assumptions behind this approach?
- Area-based / affordability based
- Demand / supply led
- Key actors

How are vulnerable groups' needs addressed during the implementation of the policy?

- Targeting
- Up-take
- Referrals and installation

What is the role of trusted intermediaries in supporting vulnerable groups through this process

- Charities / public services / social relations
- Additionality?

Who should we speak to for more info on this?

How does this policy work well / not so well for vulnerable groups in practice?

Direct and indirect benefits

Specific features of the policy

Examples to follow up

Theory testing

- Is advice and info accessible and understood?
- Can vulnerable groups engage with the scheme unsupported?
- What level of additional support is necessary to get VGs into schemes?
- Can vulnerable groups cope with the disruption and the time-lag?
- Do households recognise and articulate their own needs in a way that can be accommodated by scheme providers?

- Policy evaluation
- How effective has this policy been at reaching vulnerable groups?
- How effective has this policy been at including vulnerable groups in its design and delivery?
- How effective has this policy been at recognising the needs and expectations of vulnerable groups?

In the future:

- How can policymakers at the national level design policy that supports our groups?
- In the future, how can local authorities, service provides and NGOs promote the design and delivery of policies that support our groups?
- How might our groups participate more fully in policy development and delivery? Would this be helpful?

Theory testing

- Does area-based eligibility criteria work for the most vulnerable?
- Local flexibility can make it?
- Are existing channels sufficient for getting VGs needs reflected in policy and practice?

TOPIC GUIDES- households

Household and personal circumstances

1. How long lived there?
2. Why chose to live there
3. Does it suit your needs?
4. Who lives there?

5. Disability / health condition
6. Family

7. Type of heating system in your home?
8. Do you use any other type of heating?

Costs

- Would you say that you have any additional living costs as a result of your impairment and associated experience of disability?
    - Can you describe what these are:
    - Around the house
    - Outside the home – travel
- Does this include additional electricity or gas?
    - Equipment/powered wheelchairs
    - Additional heating
    - Time spent in the house
    - Is your home warm enough?
    - Do you keep the heating on as much as you like?
    - Can you afford to use the oven/hob to cook, wash clothes, etc as much as you'd like to?
    - Washing machine
    - Cooker
    - Other energy needs? recharging phones/other equipment
        - effect of family's needs on energy costs – juggling this?
- How do you pay the fuel bills?
    - Direct Debit/Quarterly/PPM

- Do you find that you are making choices about how you spend money?
    - Trade off paying for energy and other bills?
    - Does this change depending on time of year?
    - Noticed if changed over last couple of years or so?

Could we talk about the energy efficiency measure you've had?

- Why did you decide to make the change to your home?
- How did you find out about it?
- Friends / organisations / referrals etc.
- Was it the landlord who got in touch with you? How did you feel when the landlord approached you about this?
- Was the information easy to get and understand/Did the landlord provide any information about it?
- Could you ask questions and discuss the scheme with anyone?
- How did you decide to go ahead with it e.g. were there other things to sort out first?
- Did you have to apply to have the energy efficiency changes made to your home?
- What was the application process like?
- Did you get support with it e.g. trusted intermediaries?
- What were you (not) eligible for and do you see this as fair?
- Were you able to query any decisions?
- Did you have any difficulties / consider not going ahead with the scheme?
- What advice/ measures did you receive?
- How did the installation go?
- Who delivered them and what was it like to interact with them e.g. in the home?
- Were you able to ask questions and be involved?
- Was the process disruptive?
- Did you have to contribute financially?
- were there additional costs or extra costs that you weren't expecting?
- Have the measures made a difference e.g. energy use at home, wellbeing, financially etc.?
- Did they meet your expectations / needs? Did you see the changes as a positive thing?
- Would you recommend the scheme / measures to others?
- What worked well / didn't work well?

- Any suggestions for improving schemes? Could anything have been done differently?
- Information and making the application
- the Installation
- and aftercare?
- How would you go about giving this feedback to scheme providers e.g. what would you ask for and through which channels?

Energy efficiency awareness and challenges

- Is there anybody that you speak to about energy and housing related issues - who would you go for advice to?
- Who would you go to for support and information relating to energy and housing? Why?
- Who wouldn't you turn to? Why?
- Who do you trust? Who do you distrust?
- Do people (e.g. stakeholders such as GPs) show an interest in your energy and housing needs?
- Is there anything preventing you from accessing any support?
- If you had a chance to give a message to the government/policymakers about energy/your home, what would it be? What do you need that you don't have?

Financial situation

- Are you receiving any benefits at the moment?
- Have these altered at all in the last two years?
- Would you say that you are concerned about your financial situation at the moment?
- What about in the next five years?

Any other comments

- Anything we've not talked about in relation to putting in energy efficiency measures into you home?
- Wider issues?

Questions for non-recipients

- Household and personal circumstance
    - Disability / health condition
    - Family
    - Welfare payments and income variability

    - Tenure / property / community
- Tell me about your energy use at home
    - Specific needs
    - Changes over time in life and seasonal
    - Heating and other energy services
    - Energy efficiency awareness and challenges

Who do you speak to about energy and housing related issues?

- Who would you go to for support and information relating to energy and housing? Why?
- Who wouldn't you turn to? Why?
- Who do you trust? Who do you distrust?
- Do people (e.g. stakeholders such as GPs) show an interest in your energy and housing needs?
- What are your previous experiences of support?
- What support have you applied for?
- What happened?
- What worked?
- What didn't work?
- What needed improvement
- How and why do you seek help? - e.g. what makes you seek help and how do you go about doing this?
- How are why do you not seek help? e.g. what prevents you from seeking help and why? What would help you over come this?
- Does policy support your needs? Specifically with reference to energy efficiency and the affordability of energy?
    - Does it help people in your position?
    - How can the government better support you/people in your position with reference to energy efficiency and the affordability of energy?