

Fairness in Retail Energy Markets?

Evidence from the UK

A report by the Centre for Competition Policy



Centre for Competition Policy

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Edited by David Deller and
Catherine Waddams Price with:
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**Edited by David Deller and
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Foreword

Dermot Nolan, CEO, Ofgem

The concept of fairness is now commonly used with regard to energy. As UK energy prices have risen over the last 10 years, public concern over the impact of this has also risen. Politicians, regulators and companies emphasise that prices must be fair, that there must be fair competition between different technologies, or that they must receive a fair hearing. In Ofgem's recent proposal for a cap on retail energy prices, we argued that the cap would ensure that customers would pay a fair price for their energy. Parliamentarians have been clear that they think it unfair that some consumers should pay significantly more than others for the essential service of energy purely because they are unable or unwilling to shop around for cheaper deals.

The idea of fairness is not confined to retail markets. Energy network companies have come under pressure because of perceived unfair returns – with the claim that companies are making high returns without providing sufficient benefits to consumers. In our work on charging for energy networks, we have made fairness one of the core principles against which we will judge different options, in particular to ensure that apparently efficient choices do not unintentionally harm the most vulnerable members of society. Wider societal concerns about fairness also make an appearance in energy – are companies paying their fair share of taxes, are energy consumers paying a fair share of the costs of decarbonising the economy?

However, while the term fairness is much used in debates, its precise meaning is often ambiguous. Indeed, this very ambiguity can make it useful as a debating tool, with both sides claiming that their position is the only one that best achieves fair outcomes (correctly conceived). It is in this context that the Centre for Competition Policy's work on fairness in energy markets is particularly important and timely.

The authors do not aim to provide particular solutions to fairness questions, but rather to suggest a change in emphasis in, for instance, how we should think about fuel poverty. Nonetheless, there is clear read-across to some of the issues that government, politicians and regulators are trying to tackle. Ofgem thinks that our work on vulnerable consumers has made significant progress in defining and understanding vulnerability, and beginning to tackle the problems that consumers face. But there is clearly further to go, particularly in ensuring that vulnerable consumers are able to benefit from the exciting technological opportunities we see in a rapidly changing energy sector.

The authors also make useful points about the need for further evidence and research on these questions. Ofgem is trying to meet this challenge, for instance through our data services and research hub projects, which aim to increase the availability of data about energy market developments, and to enhance our understanding of how consumers actually interact with the energy system. But we cannot do so alone, and look forward to working further with government, companies and academia in building a shared understanding of fairness questions – with the hope that the concept of fairness may increasingly become a valuable guide to action, rather than a rhetorical weapon.

Foreword

Jim Watson, UKERC Director

In recent years the affordability of energy has come back on to the agenda. Whilst successive governments have emphasised affordability needs to be considered alongside other policy goals – particularly reducing carbon emissions – household energy bills have attracted increasing political attention. This has led to major inquiry into the retail energy market by the Competition and Markets Authority, a review of the costs of energy and the imposition of a price cap for most domestic consumers. This is a long way from the vision put forward when electricity and gas markets were liberalised in the 1990s. For many supporters of liberalisation, competition was the primary mechanism for ensuring consumers got a good deal. They argued that the need for regulation and other forms of intervention would inevitably decline as a result.

This report is timely, placing these recent debates and policy interventions in context. It presents new data, evidence and analysis which will, we hope, be of significant value for policy makers and regulators who need to protect consumers whilst driving the transition to a low carbon, secure energy system. This is a key output from the UK Energy Research Centre (UKERC) research programme, and one of several on the equity implications of energy system change. This essential research strengthens UKERC's ability to consider equity alongside other key objectives of energy policy.

The data on long term trends in the share of household income spent on energy provide useful context. This shows that households have spent more of their income on energy in the past. However, more recent trends have included a steep decline in the 1990s followed by an increase in the second half of the 2000s. Disparities between low income consumers and those on higher incomes have also widened. Furthermore, the steep decline in the 1990s predated the introduction of competition for household consumers by several years.

The report provides detailed analysis the UK's pioneering experiment with liberalised energy markets. Two dimensions stand out in particular. First, the report discusses the evolution of the relationship between government and the regulator – and shows that guidance to the regulator has become increasingly complex and diverse. This also gets behind the scenes, highlighting the less formal ways in which government has sought to influence the regulator's priorities. For students of political economy, none of this should be surprising. But, once again, this is in sharp contrast to the original vision for privatisation and liberalisation of the energy sector.

Second, the report conducts some thoughtful analysis of fuel poverty – an enduring challenge that we are a long way from solving. Rates of fuel poverty remain disturbingly high, with too many households struggling to pay their bills due to low incomes, poor housing standards and (in recent years) higher energy prices. The report's analysis identifies problems with standard definitions of fuel poverty, and emphasises the need for more work 'on the ground' to help target households in need of assistance more effectively. This suggests a much greater role for community groups and other local intermediaries who have the knowledge and levels of trust to help achieve this.

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The Centre for Competition Policy

The Centre for Competition Policy (CCP) at the University of East Anglia (UEA) was established in 2000 to conduct interdisciplinary research into competition policy, including market regulation, which has real-world policy relevance without compromising academic rigour. The Centre is a collaborative venture between four UEA Schools of Study: Norwich Business School, UEA Law School, the School of Economics and the School of Politics, Philosophy, Language and Communication Studies.

From 2004 to 2014, CCP was awarded a ten-year core funding grant from the Economic and Social Research Council to establish it as a Research Centre of Excellence. It now supports its research from public sector membership, research contracts and grants, and income from teaching and training.

CCP's research programme explores competition, regulatory and consumer policy, from the perspective of economics, law, business and political science. By applying each of these disciplines, both individually and together, the Centre informs evidence-based policy whilst maintaining its high academic standards.

Publications and Events

The Centre publishes widely on all areas of competition and regulation, and has experience in conducting analyses of many sectors of the economy, including topics such as cartels, mergers and market investigations, vulnerable consumers, digital and information industries, healthcare and the pharmaceutical industry, regulation and the regulatory state, the utilities (especially energy markets and water), the banking sector, the media and creative industries, and mobile telecommunications. The breadth of the Centre's expertise is also demonstrated in its methodological diversity which includes economic modelling, econometric and statistical analysis, experiments, surveys, interviews, and legal, policy and document analysis. Members of the Centre have advised and informed a wide range of national and international public and private sector stakeholders.

The Centre produces a regular series of working papers and policy briefings, and our bi-annual Research Bulletin publishes articles reflecting its most recent research. It also hosts training courses, workshops and conferences throughout the year and runs a lively programme of regular weekly seminars. Current commentary on relevant issues and developing research areas can also be found on our blog, competitionpolicy.wordpress.com.

competitionpolicy.ac.uk

 [@ccp_uea](https://twitter.com/ccp_uea)

The UK Energy Research Centre (UKERC)

The UK Energy Research Centre (UKERC) carries out world-class research into sustainable future energy systems. UKERC acts as a focal point for UK energy research and a gateway between the UK and international energy research communities. UKERC's interdisciplinary, whole systems research informs UK policy development and the strategies of public, private and third sector organisations.

UKERC is funded by the UK Research and Innovation (UKRI) Energy Programme. UKERC reports to a Funders Group convened by UKRI, and is advised by an independent Advisory Board.

Research

UKERC's current research focuses on the increasingly contested and uncertain nature of energy system change; this includes a core research programme and a flexible Research Fund. UKERC's core research programme focuses on six research themes:

- Future energy system pathways
- Resources & vectors
- Energy systems at multiple scales
- Energy, economy & societal preferences
- Decision-making
- Technology & policy assessment

The 'Equity and Justice in Energy Markets' Project

Within the 'Energy, economy & societal preferences' theme, the 'Equity and Justice in Energy Markets' project was undertaken at the Centre for Competition Policy at the University of East Anglia, between 2016 and 2018. The project took a multi-disciplinary approach and focused on three dimensions: access to opportunities; consumer response to those opportunities; and the consequent outcomes. This report presents the findings from the project most relevant to policymakers. References are provided in each chapter to the underlying evidence being published through research papers and journal articles.

Chapter 1

Introduction

Fairness in Retail
Energy Markets?

Key Points

We explore evidence relevant to discussions of fairness and how concerns about fairness have influenced the retail energy market, rather than determining what is fair or unfair

Movements in households' energy expenditure shares provide a possible explanation for the current political salience of the UK retail energy market

Regulatory independence and its interpretation has evolved over time, potentially reflecting this political salience

We suggest a change in research and policy emphasis, rather than identifying concrete policy solutions

Our evidence raises various questions about the real-world phenomena that official fuel poverty statistics identify

Greater weight should be placed on measuring and addressing households' observable problems rather than the official fuel poverty statistics

Our findings are from a large multi-disciplinary research programme, 'Equity and Justice in Energy Markets', undertaken at the University of East Anglia as part of the UK Energy Research Centre's research programme

Qualitative and quantitative evidence is presented from economics, law, human geography and policy studies

Ideally, qualitative interviews and quantitative surveys should be used as complements in a continuous iterative cycle to maximise both detail and representativeness

The evidence is presented under five broad themes: (i) long-term outcomes, (ii) institutions, (iii) engagement, (iv) fuel poverty, and (v) data

Detail on the methodologies used to generate our original evidence is provided in a methodological appendix (Appendix 1)

Concern about fairness in the retail energy market is clear from recent headlines about variations in the prices paid by different consumers and companies ‘ripping off’ those who do not search for better prices.¹ This concern about companies in a market profiting at the expense of consumers, and some consumers achieving better deals than others, has replaced the original emphasis at privatisation, which focused on raising the energy sector’s efficiency to increase the total benefits it could deliver and the regulation of areas that remained true monopolies. Distributional concerns about the division of benefits have contributed to the government imposing a ‘wide’ price cap,² which represents a significant moment in a policy path often characterised as the retreat of state intervention via privatisation and liberalisation. Such new directions make this a natural time to assess the retail energy market’s position. Evidence from our ‘Equity and Justice in Energy Markets’ project on fairness in the retail energy market complements the Competition and Markets Authority’s focus on competition issues in its 2014-2016 Energy Market Investigation.³ The traditional focus of economics on efficiency has never claimed that markets are effective tools for delivering equitable outcomes, and the traditional framework of ‘pure’ economic regulation is challenged by the present focus on fairness.

Evidence has been gathered from several perspectives and disciplines which together raise fundamental questions for the future governance of the market. First, the substantial increase in the share of household expenditure devoted to energy since 2003-04 helps to explain the political salience of the energy market. Can the market ever escape political intervention at a time of rising energy prices? Second, this political salience affects the independence of the market regulator, Ofgem; independence appears less absolute and clear-cut than was originally envisioned. Regulatory independence has evolved, with governments altering Ofgem’s statutory framework and exerting pressure through less formal channels. Third, we present evidence indicating that there are problems with implementing the main framing of fairness regarding energy in the UK, leading to the concept of ‘fuel poverty’. We suggest that the current approach to analysing fuel poverty, and associated policymaking, would benefit from a reboot. Focusing on directly observable real-world phenomena which underpin the complex problem of fuel poverty, for example, low and precarious incomes, cold homes and health issues, such an approach would encourage consideration of interventions beyond energy efficiency.

1 For example, see: ‘Energy companies ‘ripping off’ millions, ministers say’, Toby Helm and James Tapper, *The Observer*, Sunday 12 March 2017, available at: <https://www.theguardian.com/money/2017/mar/12/millions-overpaying-energy-bills-admits-ministry-big-six> (last accessed 08.08.18), or ‘GRIDDY GUTS: Fatcat energy bosses taking home up to £5.9 million causing bills of hard-up families to rise by £60’, Daniel Jones, *The Sun*, 27 November 2017, available at: <https://www.thesun.co.uk/money/5005893/energy-companies-bills-rising-profits-chief-pay/> (last accessed 08.08.2018) or ‘Energy firm E.ON ‘paid £6m to Age UK in return for the charity promoting expensive tariffs to pensioners’, Tim Lamden, *The Daily Mail*, 4 February 2016, available at: <http://www.dailymail.co.uk/news/article-3431006/Energy-firm-E-paid-6m-Age-UK-return-charity-promoting-expensive-tariffs-pensioners.html> (last accessed 08.08.18)

2 Domestic Gas and Electricity (Tariff Cap) Act, 2018 available at: <http://www.legislation.gov.uk/ukpga/2018/21/contents/enacted/data.htm> (last accessed 07.08.18)

3 Competition and Markets Authority, ‘Energy market investigation: Final report’, 24 June 2016, available at: <https://assets.publishing.service.gov.uk/media/5773de34e5274a0da3000113/final-report-energy-market-investigation.pdf> (last accessed 08.08.18)

A large multi-disciplinary research programme

Research was conducted at the Centre for Competition Policy at the University of East Anglia as part of the UK Energy Research Centre's programme, in particular its 'Energy, Economy and Societal Preferences' theme (see page 11). The research is strongly multi-disciplinary, drawing together researchers from a range of disciplines: economists (David Deller, Amelia Fletcher, Glen Turner and Catherine Waddams Price), legal scholars (Michael Harker and David Reader), human geographers (Tom Hargreaves and Noel Longhurst) and a policy analyst (Elizabeth Errington). Each chapter has been drafted by the researchers who generated the evidence, while the editors (Deller and Waddams Price) are responsible for the overall presentation here.

Our range of specialisms provides a rare opportunity to consider fairness and retail energy markets in the round. The report's five main chapters present findings from different disciplines and methodologies to juxtapose evidence which is rarely encountered together. This includes two sets of elite interviews; a 45-year time series of electricity bills; a 35-year time series of energy expenditure shares; detailed analysis of statutes, parliamentary debates and consultation documents; cross-sectional data from an energy-specific consumer survey; interviews with social housing tenants; and survey data from individual UK households followed over multiple years. In assembling this evidence, we are grateful to our partners Broadland Housing Association, Cornwall Energy and Ofgem for the access and data they have provided, as well as to the Parliamentary Archives and all our interviewees. The methodology behind each piece of original evidence is provided in a methodological appendix at the end of the report, and the underlying academic papers are referenced in each chapter.

The research team provides not only an unusual breadth of disciplinary perspectives, but also academic independence. We do not define what constitutes fair or unfair. Rather, we present evidence which is directly relevant to assessments of fairness or which has implications for interventions motivated, at least in part, by distributional concerns. We conclude that analysis of distributional concerns in the retail energy market's political economy is crucial, since the retail energy market and energy affordability seem likely to remain an area of political salience unless the cost of energy falls substantially. Our focus is on the retail energy market, though we recognise that factors extending far beyond this area affect issues such as fuel poverty.

The new evidence presented in this report provides context, detail and nuance to broad points that have sometimes appeared in earlier policy discussion. For example, there appears to be little understanding of the porous boundary between households and microbusinesses or how microbusinesses choose between domestic and non-domestic energy supply contracts. Similarly the real-world phenomena that official fuel poverty statistics attempt to capture need to be clarified. New data collection efforts may be required to resolve these uncertainties.

While many of our findings question existing statistics or knowledge, their implications are central to evidence-based policy making: technical/statistical issues can alter the evidence on which policy is founded. Changing statistics or their interpretation may require a policymaking response.

A distinctive part of this report is its presentation of both qualitative and quantitative evidence alongside each other. Neither provides better evidence than the other, and they provide complementary insights. For example, large scale quantitative surveys provide the opportunity to assess the prevalence of a particular issue within a population of interest, whereas small scale qualitative interviews reveal a depth of detail about households' experiences as they perceive it. Rather than making a choice between qualitative and quantitative approaches, we suggest an ideal approach may be to follow a continuous iterative process alternating between the two (where resources allow). Qualitative interviews can highlight

areas of concern whose prevalence might be assessed by a subsequent survey wave, while restricted survey questions may raise puzzles that may only be illuminated by in-depth interviews.

An overview of the chapters

Our findings are presented under five broad themes: (i) how long-term outcomes contextualise the retail energy market's political salience; (ii) how distributional objectives feed into institutions; (iii) the multi-faceted nature of engagement with energy; (iv) the detailed experiences of those at risk of fuel poverty; and (v) how data/statistics can be improved.

Chapter 2 presents context to the current prominence of fairness in the retail energy market, showing that while energy expenditure share and incumbent electricity bills are currently at a level similar to the 1980s, they have increased substantially since the early-2000s. Energy expenditure doubled in nominal terms between 2003-04 and 2013. Moreover, since energy is a necessity, the energy expenditure share is much higher for lower income groups. At a time of low income growth and increasing concern about distributional issues, the salience of energy affordability should therefore come as no surprise. However, some common perceptions need questioning; for example, it is arguably wrong to suggest consumers are intolerant of all energy price differentials, since regional electricity price differences have existed since at least 1970. Our doubts about the feasibility of ending political intervention in the energy market are partly based on the timing of two key energy affordability policies, the Fuel Poverty Strategy and Winter Fuel Payment, which were introduced in the early-2000s when energy was at its most affordable since the mid-1970s.

Accepting an enduring political interest in energy affordability, **Chapter 3** reports on how distributional concerns have been balanced against competition concerns in policymaking institutions. Perhaps the strongest way to communicate objectives to Ofgem is through its statutory duties. The weight afforded to individual statutory duties has become less clear over time as the number of duties has grown substantially. Elite interviews with members of the regulatory community indicate that, over the same period, instances of government exerting influence over Ofgem through less formal channels has occurred more than was perhaps expected. There was consensus among those interviewed from the regulatory community that decisions about significant distributional objectives should rest with elected politicians rather than unelected regulators. Chapter 3 then highlights how the delivery of fuel poverty objectives is potentially made more challenging by the complex web of institutions that influence the design and implementation of fuel poverty policy. Some of this complexity results from fuel poverty being a cross-cutting concept that does not fit neatly within existing institutional silos.

Chapter 4 presents evidence on how consumers engage with energy. It highlights the importance of understanding the detail of how consumers actually engage, rather than relying solely on economic models of behaviour or policymakers framing consumers' ideal behaviour as that which maximises competition. Engagement needs to be considered in terms which stretch beyond searching and switching. Interviews with households at risk of fuel poverty show considerable emotional engagement with controlling their energy consumption, even if they do not switch supplier. To gain an enhanced consumer perspective, policymakers often rely on third sector bodies, some representing disadvantaged groups. However, interviews suggest that, while these organisations have formal opportunities to engage with policymaking, a lack of resources may hamper their involvement thereby limiting the communication of their insights to policymakers.

This chapter also presents evidence on the complexities of assessing engagement when this is framed in terms of switching. While the case for the recent energy price cap rests partly on the prevalence of

persistent non-switching, we identify challenges in identifying persistent non-switching from survey questions alone. Moreover, the way we understand engagement by micro and small businesses needs to reflect differences from the domestic setting. Many micro and small businesses have multi-year energy contracts which automatically limit the frequency of market engagement. Also, while intermediaries are heavily involved with micro and small businesses switching, many micro and small businesses report a dislike of intermediaries' marketing communications, suggesting that further direct regulation of energy intermediaries may be beneficial.

Since fuel poverty is a major frame for fairness regarding energy consumption in the UK, **Chapter 5** (and much of Chapter 6) raise questions around the official fuel poverty statistics and the emphasis on using energy efficiency to address fuel poverty. We start by outlining the meaning of fuel poverty and the main fuel poverty statistics. While recognising the distinction between fuel poverty and income poverty, Chapter 5's evidence emphasises the important role of persistently low incomes and sudden reductions in income in energy affordability difficulties. While some government initiatives to improve energy affordability are income based (for example, the Winter Fuel Payment and the Cold Weather Payment), much of the effort to reduce fuel poverty has focused on energy efficiency. However, we find that, despite social housing having the highest average energy efficiency of any tenure, social housing tenants' median energy expenditure share is persistently higher than that of tenants in private rented accommodation between 1992 and 2014. Qualitative interviews show that, even in energy efficient dwellings, individual social housing tenants can still struggle to afford energy. Initial findings from large scale panel data show that, for many fuel poor households, the issue appears to be a relatively dynamic phenomenon. If the primary policy objective is addressing the affordability of energy, other policy options beyond energy efficiency should be explored.

Finally, the quality of the data available to address distributional questions related to energy is discussed in **Chapter 6**. A significant 'missing data' issue is identified affecting energy expenditures for households with prepayment meters in the Living Costs and Food Survey (and its precursors) prior to 2013. Correcting for this issue substantially increases the estimated average energy expenditure of prepayment meter households and impacts on average energy expenditure for low income households more generally. Fuel poverty rates calculated using this corrected 'reported'⁴ energy expenditure data were higher than official fuel poverty rates based on 'required' (modelled) energy expenditure in some years, contradicting previous claims that fuel poverty statistics based on reported energy expenditure under-record fuel poverty relative to those based on required energy expenditure.

Using a different dataset, a more fundamental issue with energy expenditure-based fuel poverty statistics is identified: a very limited overlap is found between households identified as fuel poor using reported energy expenditure and households reporting an inability to afford adequate warmth. Further research combining survey data with in-home temperature data seems necessary to form conclusions about this lack of overlap and its implications.

Chapters 4-6 highlight the contribution to evidence-based policymaking that academics can make through in-depth analysis of policy relevant statistics. This leads to Chapter 6's final suggestion that there should be a presumption in favour of sharing anonymised raw data from surveys commissioned by economic regulators wherever possible.

⁴ We use 'reported' energy expenditure to refer to survey data where households self-report their energy expenditure. In contrast, 'required' energy expenditure is calculated from behavioural assumptions and an engineering model of energy consumption.

Chapter 2

A Long-Term View of Energy Affordability and its Political Salience

Key Points

Recent political and popular debates around energy affordability can be explained in the context of changing energy expenditure shares (ENEXShr)

Although they have recently risen, ENEXShr between 2009 and 2014 are similar to those observed in the 1980s

Nominal energy expenditures roughly doubled between 2003-2004 and 2014 at a time when average energy consumption fell by a quarter

Households in the lowest income deciles have much higher ENEXShr than those in the top deciles, likely increasing the salience of energy to the former

Regional electricity price differences have existed since the 1970s and so are not a consequence of privatisation and liberalisation

The first Fuel Poverty Strategy (FPS) and Winter Fuel Payment (WFP) were introduced when ENEXShr were at historically low levels; government intervention to achieve greater fairness occurred at the same time as the energy market was being liberalised

WFP represented a shift in focus for energy affordability support from those on low incomes towards elderly people

1 Introduction

An energy price cap for ‘disengaged’ consumers is being introduced in 2018 by a Conservative government which might traditionally be expected to be pro-market.

The new price cap partially reverses the removal of general retail price caps in 2002. While disengaged consumers are not necessarily vulnerable or poor, the legislation represents a culmination of sustained political and media debate around the competitiveness and ‘fairness’ of the retail energy market, extending beyond the protection of consumers in vulnerable situations.

This chapter utilises long-run time series on energy expenditure shares (ENEXShr)¹ and electricity bills to place this policy *volte face*, and developments in energy affordability support policies, in context. Although strict causation is not demonstrated, the times series suggest intervention on the grounds of fairness should not come as a surprise for two reasons. First, ENEXShr and electricity bills show sustained rises since low levels in the early-2000s, which likely triggered increasing salience and dissatisfaction around energy costs. Second, since energy is a necessity, low income households devote a far higher proportion of expenditure to energy than high income households. These patterns help explain increased questions about the acceptability of market outcomes as energy prices have risen.

Furthermore the time series highlight and raise additional questions around the interplay between the retail energy market and politics. For example, households paid different prices for electricity long before privatisation or liberalisation with regional price differences existing since at least 1970. This raises the following question: why were these price differences apparently acceptable, when more recent price differences between active and inactive customers are not?

Perhaps surprisingly, key policies linked to energy affordability and fairness, in particular the government’s Fuel Poverty Strategy (FPS) and Winter Fuel Payment (WFP), were introduced (or greatly increased) when ENEXShr were near long-term lows, i.e. when energy was particularly affordable in a 35-year context. Moreover, WFP spending represents a major shift in the balance of energy affordability assistance from those on low incomes towards older households. These policies suggest energy affordability never escaped political intervention even when the retail market appeared to be performing well.

¹ In this chapter ENEXShr refers to the percentage of equivalised ‘after housing costs’ (AHC) household expenditure devoted to energy on all fuels in the home (fuel for transport is excluded). Equivalised after housing costs household expenditure is total household expenditure after the deduction of housing costs and adjustment to reflect that in households with more members the per-person expenditure is lower.

2 Energy Expenditure Shares and Electricity Bills in the Long Run

2.1 The Low ENEXShr in the early-2000s appear exceptional

Figure 1 shows the evolution of ENEXShr between 1977 and 2014.² This time series incorporates a correction for a serious measurement issue regarding prepayment meter expenditures that is likely to have affected earlier analysis by others, particularly for low income consumers (see Chapter 6). ENEXShr is presumed to affect households in two broad ways: (i) higher ENEXShr make energy more salient to households; and (ii) higher ENEXShr imply a reduction in household welfare.³ The second point rests on energy's role as a necessity, demonstrated by its low price and income responsiveness, i.e. the quantity consumed falls by a lower proportion than the relevant price or income change when prices rise or income falls. As a greater proportion of resources are devoted to energy, fewer resources are available to purchase other goods.

**Figure 1 Index of the median energy expenditure share⁴ 1977-2014
(Base year: 1992)**

(Data: Living Costs and Food Survey and precursors)⁵

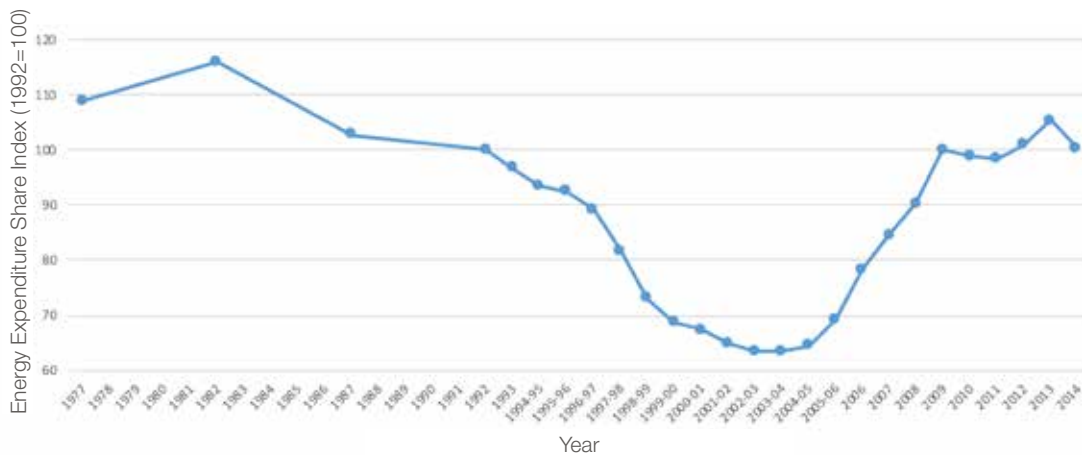


Figure 1 also demonstrates that, between 2009 and 2014, ENEXShr were at similar levels to those occurring in the 1980s. Whether energy expenditure (ENEX) is viewed as more or less affordable than in the past depends on the period considered. Median ENEXShr in 2013 was 11.2% compared to 12.3% in 1982 and 11.5% in 1977. However, median ENEXShr after 2009 are considerably higher than in the early-2000s when the median ENEXShr was only 6.7%. Since average household energy consumption has declined over the past decade,⁶ the increase in ENEXShr since the early-2000s emphasises the likely reduction in household welfare. Equally, the reduction in ENEXShr of around a third between 1992 and 2002-03 likely represents a significant improvement in household welfare.

2 Deller and Waddams Price (2018a). Details of our research papers' methodologies are provided in Appendix 1.

3 This is a generalisation rather than something strictly true for all households in all circumstances.

4 See footnote 1 for definition.

5 Deller and Waddams Price (2018a). Where a year is labelled 1995-96 etc., the underlying survey data relates to the financial year, in this example from April 1995 to March 1996.

6 Table 3.04, Energy Consumption in the UK (ECUK) 2016 Data Tables, Department for Business, Energy and Industrial Strategy, <https://www.gov.uk/government/statistics/energy-consumption-in-the-uk> (last accessed: 07.08.18)

While the period since the 2007-08 Financial Crisis has been characterised as one involving stagnating incomes, the increase in ENEXshr coincides with a large increase in ENEX in real terms, much of which occurred prior to the Financial Crisis.⁷ In 2013, real median ENEX was 46% above that observed in 2003-04.

2.2 Regional price differences existed in the 1970s

Figure 2 reports the electricity bills charged by the incumbent firm in each electricity supply region between 1970 and 2016 for an annual consumption of 3,300kWh on a standard credit tariff, after adjusting for inflation. The time trend is similar to that in Figure 1, with Figure 2 again emphasising the low cost of energy in the early-2000s.

Figure 2 Incumbent electricity bills for 3,300kWh of consumption in 2016 prices by electricity supply region, 1970-2016

(Data: University of Warwick, Which?, energywatch, Consumer Focus and Cornwall Energy)⁸

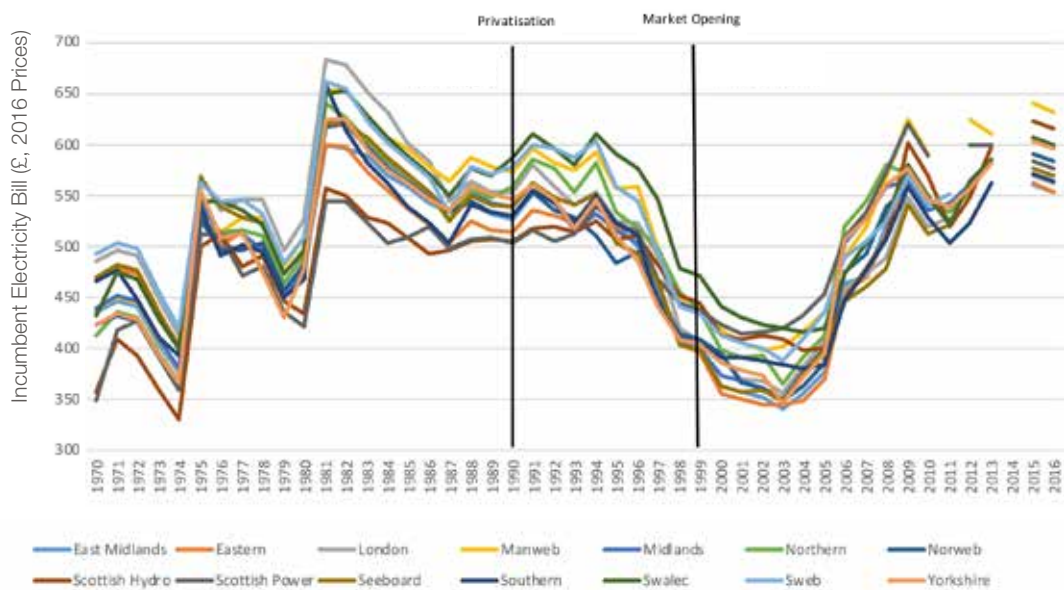


Figure 2 also highlights significant variations in electricity bills across regions, extending back to at least 1970, showing that households paid different prices for electricity before privatisation and liberalisation. This potentially challenges the belief that the public are inherently averse to price differences in the energy market; although the public's awareness of these regional price differences is unclear.

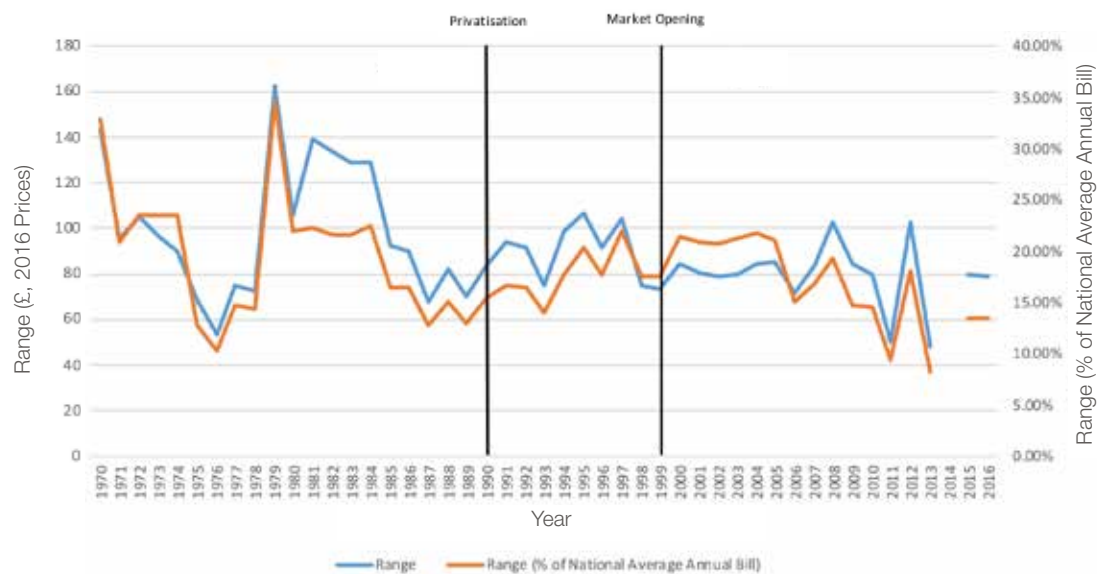
⁷ Deller and Waddams Price (2018) adjust for inflation using the Retail Price Index (RPI); using the Consumer Price Index (CPI) would result in even higher increases in real ENEX.

⁸ Deller, Turner and Waddams Price (2018). Gaps in the electricity bill time series result from situations where data was unavailable for the relevant year-region combination.

Figure 3 provides further detail on the regional differences between incumbent bills by reporting the range between the cheapest and most expensive regions. Since the mid-1980s this range has been between a sixth and a quarter of the national average bill. The range in real terms peaked in 1979 at £162 and was lowest in 2013 at £48. The range has been lower in recent years, remaining below 25% since 1990. No single region is always the cheapest or most expensive, and the Scottish regions have shown particular volatility. Averaging across the entire time period, Eastern had the lowest electricity bills (closely followed by East Midlands) and Swalec was the most expensive region, being £46 per annum more expensive than Eastern. Sweb and Manweb were also, on average, more than £40 per annum more expensive than Eastern.

Figure 3 The range between the highest and lowest regional incumbent electricity bills (3,300KWh) in absolute and percentage terms, 1970-2016

(Data: University of Warwick, Which?, energywatch, Consumer Focus and Cornwall Energy)⁹



Why have these regional price differences received less attention¹⁰ than the price differences between active and inactive consumers? Plausible contributory factors include:

- 1 The price differences are viewed as 'legitimate' as there are regional differences in supply costs;
- 2 Since each consumer is located in a single region, there may be less awareness of the differences;

⁹ Deller, Turner and Waddams Price (2018)

¹⁰ The issues leading to Ofgem's imposition of regional non-discrimination clauses from 2009 to 2012 were different from the regional price differences described here. The concern leading to the non-discrimination clauses was that in their incumbent 'home' region they were charging higher prices than in 'away' regions where they were an entrant; the non-discrimination clauses restricted this practice. Here we only compare the bill charged by each incumbent in its home region.

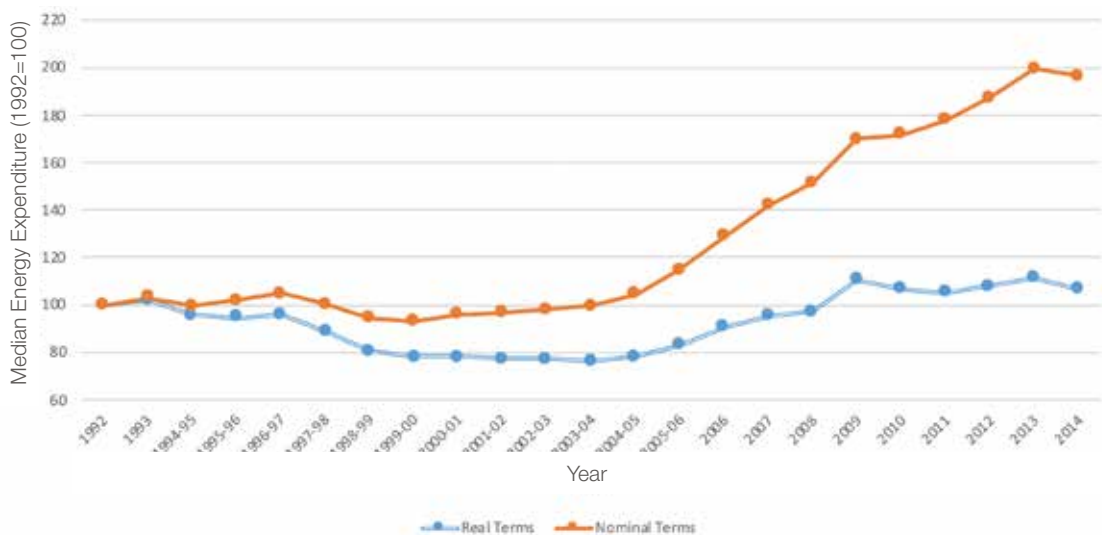
- 3 Recently, the differences between standard variable and fixed term tariffs offered by each supplier within a region have exceeded the average regional price differences observed above;
- 4 Since the most 'expensive' regions vary through time, consumer resentment may not have time to build up;
- 5 As regional price differences predate privatisation, they do not fit into narratives seeking to show privatisation/liberalisation has 'failed'.

2.3 A perfect storm: rising nominal bills and falling consumption

While the analysis above focuses on ENEXShr and electricity bills in real terms, consumers may focus on the bills they receive, i.e. the value of ENEX in nominal terms. Figure 4 highlights that, while real median ENEX between 2009 and 2014 is only around 10% above the 1992 level, nominal median ENEX in 2013 was double that in 1992. The trend in nominal ENEX since 2003-04 explains consumer sentiments that energy prices are continually rising. These increases may have been particularly noticeable after the period of remarkable stability in nominal ENEX between 1992 and 2003-04.

Figure 4 Indices of Median Energy Expenditure in Nominal and Real¹¹ Terms, 1992-2014

(Data: Living Costs and Food Survey and precursors)¹²



¹¹ Adjusted using the Retail Price Index.

¹² Deller, Turner and Waddams Price (2018a)

While increasing ENEX/electricity bills after 2003-04 are likely to be related to rising global fuel prices, the timing of the rise poses a communication challenge for those defending a liberalised retail energy market, since the increase in ENEX begins shortly after liberalisation was completed in 2002. Consumer dissatisfaction with rising ENEX since 2003-04 has probably been compounded by the reduction in average household energy consumption of around a quarter in the same period,¹³ i.e. on average households are paying more for less energy.

3 Energy Expenditure Shares and the Income Distribution

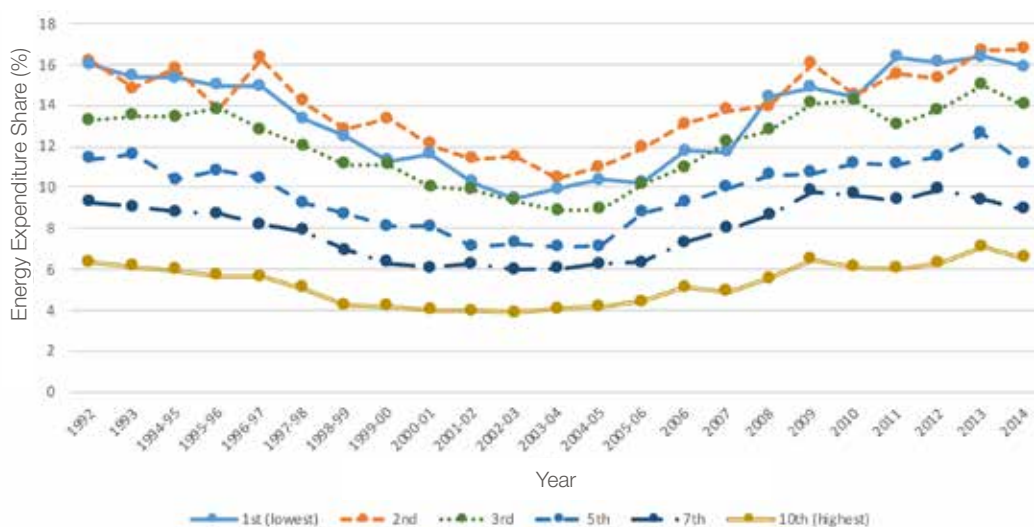
ENEXShr vary dramatically between households with different income levels, reflecting energy's characteristic as a necessity for households.

3.1 Energy's salience is likely to vary dramatically by income

Figure 5 depicts ENEXShr for households with different incomes, using selected deciles of the 'equivalised after housing costs income' distribution.¹⁴ In 2014 the median ENEXShr of the bottom income decile was 15.9%, nearly two-and-a-half times the median ENEXShr of the top income decile (6.6%). Such a large difference suggests systematic variations in the salience of energy and energy price fluctuations across households. Those in lower income groups are likely to be far more concerned by energy prices than those in the highest income groups.

Figure 5 Median energy expenditure shares¹⁵ by equivalised after housing costs income decile, 1992-2014

(Data: Living Costs and Food Survey and precursors)¹⁶



¹³ See footnote 6 for data description.

¹⁴ See footnote 1 for a brief description of equivalisation.

¹⁵ See footnote 1 for definition.

¹⁶ Deller and Waddams Price (2018a)

Figure 5 also shows that when energy prices were low in the early-2000s, the ENEXShr of different income groups were closer together. In 2002-03, the difference in ENEXShr between the lowest (1st)¹⁷ and highest (10th) income deciles was 5.5 percentage points, while by 2014 the difference had widened to 9.3 percentage points. The increase in median ENEXShr for the lowest income decile between 2002-2003 and 2014 (6.0 percentage points) was likely to be experienced as a much more acute reduction in household welfare than the corresponding increase in ENEXShr for the top income decile (2.5 percentage points).

3.2 Energy is different from other regulated sectors

While Figure 5 does not directly explain why issues of distribution and fairness seem more prominent in energy than in other regulated sectors, comparison with expenditure shares for water, telecoms and transport in Figure 6 provides an important clue. Only the expenditure share of water has as steep a negative relationship with income as that of energy, but water forms a much smaller component of household expenditure.

Figure 6 Median expenditure share¹⁸ devoted to different regulated sectors by equivalised after housing costs income decile, 2014

(Data: Living Costs and Food Survey)¹⁹



¹⁷ In Figure 5, the bottom income decile often has a median ENEXShr lower than the second income decile. At least for 2014, this result is due to equivalisation and the deduction of housing costs from income.

¹⁸ Share of equivalised after housing costs household expenditure. ENEX, unlike the other expenditure categories, is deseasonalised. Water expenditure includes both water and sewerage; water expenditures paid as part of rental payments or property service charges are not included. Telecoms expenditure covers fixed telephony, mobile telephony and broadband, but excludes pay-TV services. Transport expenditure covers both private and public transport but excludes vehicle purchase costs.

¹⁹ Deller and Waddams Price (2018a)

4 Affordability Support Policies

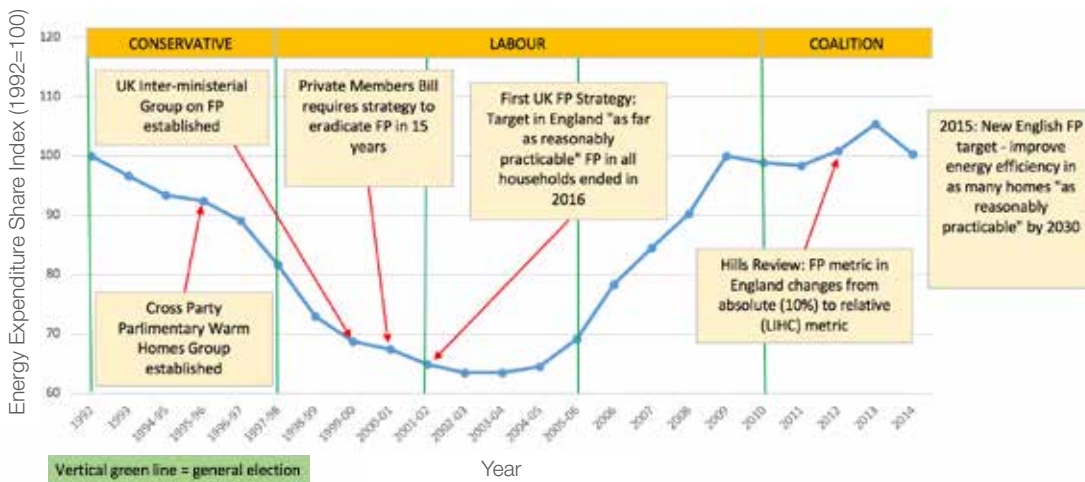
Governments have introduced a variety of energy affordability support policies, and their development is mapped against an index of median ENEXShr in Figures 7 and 8. The first Fuel Poverty Strategy (FPS) and the Winter Fuel Payment (WFP), the most prominent support measures, were introduced by the Labour government elected in 1997. Figures 7 and 8 show that, perhaps counter-intuitively, these major affordability support initiatives were introduced and/or increased in generosity at a time when energy was at its most affordable since at least the mid-1970s.

4.1 The first Fuel Poverty Strategy (FPS) was introduced as ENEXShr fell

While the concept of Fuel Poverty (FP) emerged at the end of the 1970s, Figure 7 shows the concept only began to gain significant political traction in the mid-1990s, by which time energy affordability was starting to improve. Policy action to tackle FP through energy efficiency is discussed in Chapter 5; in this chapter we focus on state income benefits related to energy.

Figure 7 Developments in the English Fuel Poverty Strategy against an index of the median energy expenditure share,²⁰ 1992-2014

(Data: Living Costs and Food Survey and precursors, detail on FP policy from NEA, 2016)²¹



²⁰ See footnote 1 for definition.

²¹ Deller and Waddams Price (2018a)

Introducing the first FPS when ENEX and ENEXShr were approaching long-term lows in 2001 posed considerable challenges for subsequently reducing the extent of FP, and the target to end FP by 2016 became increasingly unrealistic over the following decade. The coalition government, which took power in 2010, appears to have responded to this increasing challenge by reducing policy ambition. First, in 2012 England's statistical definition of FP was changed to a relative metric, so it became neither meaningful nor practically possible to end FP in statistical terms.²² Second, in 2015 the English FP target was changed from ending FP in 2016 to simply ensuring that the dwellings of FP households meet a minimum energy efficiency standard by 2030. Both the original and new targets were qualified with the statement "as far as reasonably practicable".

4.2 WFP represents a shift in the balance of support

Since 1986, the state welfare system has provided explicit energy affordability support through the Cold Weather Payments which provide additional income to households on means tested benefits when temperatures are particularly low. The addition of WFP in 1997-98 represented a significant shift, both in terms of the total spend on affordability support and the households receiving support. Rather than being based on low income, eligibility for WFP is linked to being over the state pension age, i.e. support is directed towards the elderly. While in 1997-98 the basic rate of WFP was modest, at £20 per year,²³ by 2000-01 WFP had increased to £200 and in 2003-04 a higher rate of £300 was introduced for households including someone aged 80 or above. Figure 8 illustrates the large increases in WFP generosity which occurred when median ENEXShr were around long-term lows.

The generosity of WFP is notable when compared to the median ENEX of the age groups receiving support. While at its introduction WFP was a modest 3.6-4.2% of the relevant age groups'²⁴ median ENEX, by 2000-01 this had increased to 34.6-42.1%. WFP's generosity (relative to median ENEX) peaked in 2003-04 when the enhanced £300 rate represented 68.7% of median ENEX for households headed by someone aged 80+.

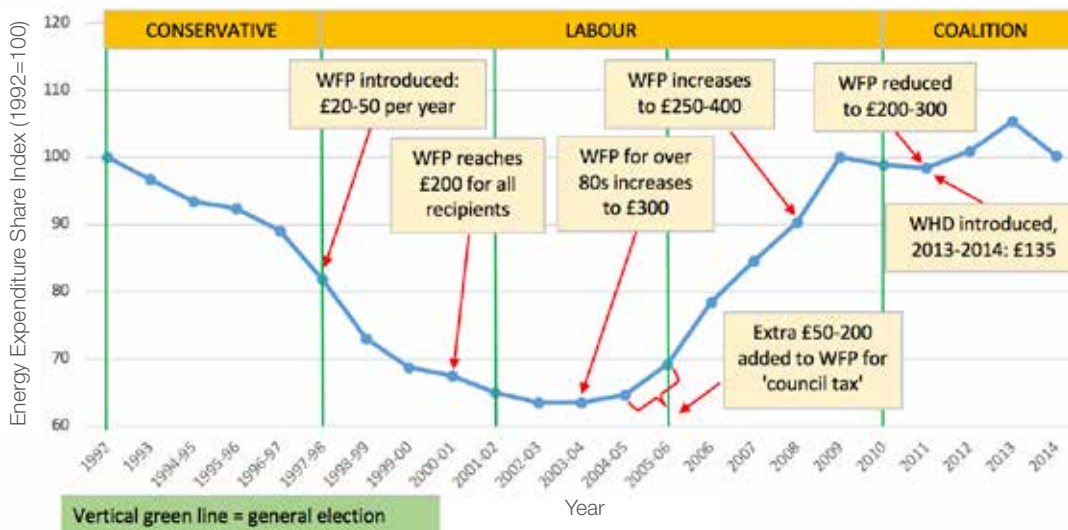
²² Section 1.1 of Chapter 5 provides an explanation of the official FP statistics.

²³ The values of WFP here and in Figure 8 are given in nominal terms.

²⁴ The percentages refer to median ENEX where the household head is aged: (i) 65-70, (ii) 70-80, or (iii) 80+.

Figure 8 Developments in the Winter Fuel Payment against an index of the median energy expenditure share,²⁵ 1992-2014²⁶

(Data: Living Costs and Food Survey and precursors, detail on WFP values from Advani et al, 2013)²⁷



Was such support warranted by elevated median ENEXShr among older households? Figure 9 shows the median ENEXShr of households headed by someone aged 80+ is comparable to that of the lowest income deciles: in 2014 the median ENEXShr of the former group was 14.4% compared to 14.0% for the third income decile.²⁸ However, the median ENEXShr of households headed by someone aged 65-70 appears broadly in line with households in the upper middle of the income distribution, i.e. the 5th to 7th income deciles. The case for directing resources to younger pensioners relative to those on low incomes, but of working age, cannot be supported by ENEXShr alone. A cynical interpretation might be that WFP's design was affected by governments' electoral concerns, particularly the desire to appeal to older households who have a higher likelihood of voting.

²⁵ See footnote 1 for definition.

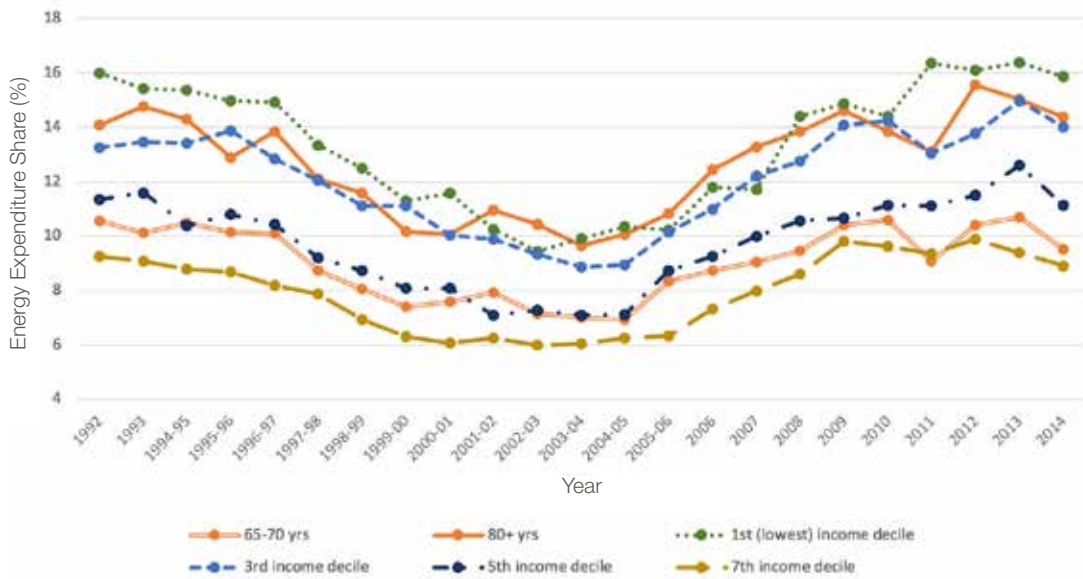
²⁶ WHD stands for Warm Home Discount, a discount on energy bills delivered by large energy companies, but required by government legislation.

²⁷ Deller and Waddams Price (2018a)

²⁸ Deller and Waddams Price (2018a).

Figure 9 Median energy expenditure shares²⁹ for selected household head ages and income³⁰ deciles

(Data: Living Costs and Food Survey and precursors)³¹



5 Conclusion

This chapter has placed current debates about the retail energy market’s performance, and its fairness, into a long-term context. Time series of ENEXShr and incumbent electricity bills highlight the relatively easy energy affordability of the early-2000s, which was arguably more unusual than the present position. The subsequent doubling in nominal median ENEX likely explains the popular focus on worsening energy affordability since 2003-04. Questions of fairness probably emerge with greater intensity in the energy market than some other sectors due to the pattern of ENEXShr by income, which reflects energy’s status as a necessity. Future policy choices depend on assessing how realistic it is for liberalised energy markets to avoid political intervention on the grounds of fairness, especially when earlier increases in state affordability support occurred at a time when energy was particularly affordable.

²⁹ See footnote 1 for definition.

³⁰ Equivalised and after the deduction of housing costs

³¹ Deller and Waddams Price (2018a)

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Chapter 3

Institutions and Policymaking: A Tale of Increasing Complexity

Key Points

The recent legislation for a wide price cap is significant as Ofgem successfully resisted government pressure to intervene in the absence of legislation, in contrast to earlier situations

The number and complexity of the statutory duties assigned to the energy regulator has increased considerably since the original privatisation statutes, with the increase accelerating after the Utilities Act 2000

Duties have moved beyond pure economic regulation to incorporate expanded social and environmental objectives

A greater number and complexity of duties raises the potential for conflicts between duties and creates ambiguities around how Ofgem should prioritise them

These ambiguities mean the need for government-regulator communication is increased, which may provide more room for government to pressure the regulator, undermining regulatory independence

There was a consensus among interviewees in the regulatory community that decisions with significant distributional implications should be the responsibility of government, and that the government's policy priorities need to be clearer

An example of social concerns entering energy policy is Fuel Poverty. Policy around this cross-cutting concept involves a large number of policy actors

The detail of Fuel Poverty policy varies noticeably across the UK nations

Overall there is a clear trend of increasing complexity in policy and policy making

1 Introduction

The imposition of a general price cap in the retail energy market¹ marks a new level of government intervention and may be significant in changing the division of responsibility over the market between Ofgem and government.

While the government publicly called for the regulator to impose the price cap, Ofgem successfully resisted, arguing its statutory powers only allowed it to protect vulnerable consumers and that government legislation was required for a policy with potentially significant distributional implications. Previously, Ofgem had conceded to government pressure to introduce regional non-discrimination clauses and limit the number of tariffs in the market. Ofgem's more robust approach followed the Competition and Market Authority's (CMA) criticism of these earlier interventions and call for more open disclosure of policy discussions between Ofgem and government.²

This chapter explores how fairness and distributional concerns have become increasingly prominent in energy policymaking since the early-2000s. We consider: (i) regulators' statutory duties; (ii) the dialogue between government and the regulator(s);³ and (iii) the policymaking space around Fuel Poverty (FP). In all three cases there is a trend towards increasing complexity over time.

First, the significant expansion of energy regulators' statutory duties over time, especially following the Utilities Act 2000, is mapped. This shows movement away from a limited and clearly defined role for economic regulators at the time of privatisation and towards Ofgem being set increasingly complex social and environmental goals. The open question is whether a return to narrower regulation would be beneficial, or whether political realities mean the notion of a 'pure' economic regulator is unsustainable over the long-run.

This proliferation of duties creates two related issues. Different duties may conflict and require compromises, which in turn generate ambiguities around how the regulator trades-off or prioritises duties.

Second, elite interviews with the regulatory community highlight the need for a constructive dialogue between government and the regulator, particularly around the government communicating its policy priorities. Interviewees were clear that responsibility for decisions with significant distributional implications should rest with government. While the CMA recommended a more formal and transparent mechanism for government-regulator communications, it is unclear whether the necessary incentives exist to make such mechanisms work in practice.

Finally, we map the complex space surrounding FP policymaking. Some of this complexity is inevitable since FP touches not only the energy market, but also on incomes and the quality of housing. However, it seems reasonable to question whether it is optimal for the four UK nations to have different FP statistics and targets when all face relatively similar energy affordability challenges.

¹ Domestic Gas and Electricity (Tariff Cap) Act 2018, available at: <http://www.legislation.gov.uk/ukpga/2018/21/contents/enacted/data.htm> (last accessed 09.08.18)

² Paragraphs 168-177 and paragraph 326, CMA (2016a)

³ Before Ofgem's creation in 2000, there were separate electricity and gas regulators, Offer and Ofgas.

2 Ofgem's Statutory Duties and Fairness

Government can formally influence the general direction of the regulator's decision-making by altering the regulator's general statutory duties, i.e. the goals Ofgem must or may consider. These duties allow observation of the scope (if any) that Ofgem has to directly pursue 'fair' market outcomes. Figure 1 shows that Ofgem currently has a principal objective to protect consumers and primary duties that include giving consideration to vulnerable consumers. The dispute between government and Ofgem regarding the wide price cap seems to be due, in part at least, to opposing views on the precise regulatory remit that the duties afford Ofgem, which is compounded by ambiguities over how Ofgem should interpret individual duties and trade-off those that conflict.

2.1 The context: a proliferation of duties

Our research⁴ shows that, since privatisation (under the Gas Act 1986 and Electricity Act 1989), twenty pieces of amending legislation relating to the general duties have been enacted, eight of which made substantive changes to the duties' content and presentation. Figure 1 shows a substantial proliferation in the number of general duties regarding gas. (The position is broadly similar for electricity). Since the 1986 Gas Act, the number of duties has risen from eight to twenty-one. While the primary and secondary duties remained relatively consistent through the Director General era (1986-1999), the Utilities Act 2000 introduced a principal objective for the newly-formed regulator, Ofgem, to "protect the interests of existing and future consumers, wherever appropriate by promoting effective competition".

This proliferation of duties poses a number of potential problems. The increased variety of duties (and their increasingly complex ordering)⁵ increases the risk of conflicts and trade-offs between them. For example, the CMA's Energy Market Investigation⁶ concluded that the perceived 'downrating' of Ofgem's duty to promote competition under the Energy Act 2010 may have led to regulatory decisions giving less weight to competitive effects and greater weight targeted to consumer protection. Despite the CMA recommending that the role of competition within Ofgem's duties be clarified,⁷ this is the only CMA remedy the government chose to reject outright in its response to the CMA's final report.⁸

Ofgem's large number of duties gives it wide discretion in interpreting its legislative remit, creating potential confusion around the precise extent to which Ofgem can intervene to pursue specific duties. For example, Ofgem has recently voiced the view that interventions involving "significant distributional effects" are a matter for Parliament,⁹ while the government suggested Ofgem both possessed the powers to implement a wide price cap, and should exercise these powers to benefit consumers.¹⁰ The threat of judicial review from affected parties provides incentives for regulators to adopt a cautious - perhaps overcautious - approach to distributional issues.

⁴ Harker and Reader (2018b)

⁵ There are currently four de facto tiers of prioritisation and eleven duties are supplementary to other duties.

⁶ Paragraph 18.23, pg 1225, CMA (2016b)

⁷ Paragraph 18.28, pg 1226, CMA (2016b)

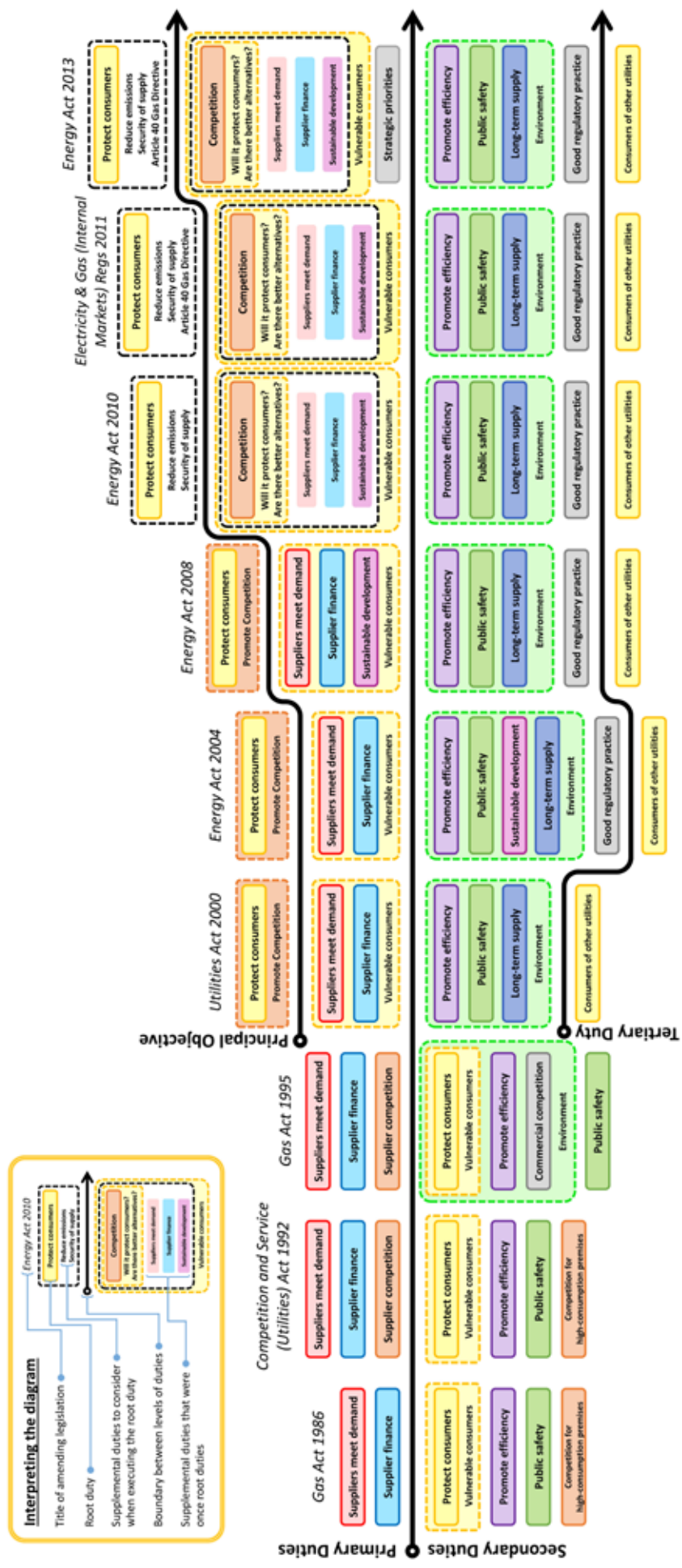
⁸ Pg 3 and 7, BEIS (2018a)

⁹ For example, see oral evidence delivered by Ofgem Chief Executive Dermot Nolan to the BEIS Committee; Business, Energy and Industrial Strategy Committee, Oral evidence: Energy price caps, HC 470, Tuesday 17 October 2017, Q74, available at: <http://data.parliament.uk/writtenevidence/committeeevidence.svc/evidencedocument/business-energy-and-industrial-strategy-committee/energy-price-caps/oral/71540.pdf> (last accessed 09.08.18)

¹⁰ See statement by Greg Clark MP; House of Commons Hansard 27 June 2017, vol 626, col 452, available at: <https://hansard.parliament.uk/commons/2017-06-27/debates/17062745000027/EnergyPriceCap> (last accessed 09.08.18)

Figure 1 The evolution of the GB energy regulator's general duties in respect of gas, 1986-2018

(Source: Collation of documentary evidence by Harker and Reader, 2018b)[†]



[†] Details of our research papers' methodologies are provided in Appendix 1.

2.2 The benefits of limited and clear statutory duties

Before a regulator can confidently interpret how far it can pursue ‘fair’ outcomes, it requires clarity regarding the scope of its statutory remit. Regulators must not only be “willing and able to take action to prevent harm”,¹¹ they must be confident they have a legitimate basis for action. Some of these issues may be resolved by the government’s recent proposal to introduce a government-regulator ‘Consumer Forum’ to develop “the principles to determine whether government or regulator should act in dealing with a particular problem”.¹²

Nevertheless, the proliferation of duties has occurred despite Parliamentary Committees and government reviews emphasising the importance of regulators being: (i) assigned a clear statutory remit, (ii) issued a clear steer on prioritising their duties, and (iii) protected from deciding political issues.¹³ In 2011, the Department for Business, Innovation and Skills’ ‘Principles for Economic Regulation’ saw the Coalition government commit to clarifying regulators’ duties where appropriate, and to resist adding new duties without first considering their impact on the legislative framework as a whole.¹⁴ Given the CMA’s concerns around the formulation of Ofgem’s existing duties, there appears to be a basis for a wide-ranging ‘simplification’ of Ofgem’s duties. Beyond reducing conflicts between duties and the value judgements inherent in trading-off duties, this could help to: (a) create greater consistency and predictability in decisions; (b) reduce the dilution of regulatory effectiveness;¹⁵ and (c) recast the duties to address the current challenges facing consumers and the market.

3 Ofgem’s Independence from Government

Regulatory independence has diminished in recent years as government energy policy has evolved and its involvement in regulation has increased. Since the government bears ultimate responsibility for energy policy, it seems appropriate for it and the regulator to maintain a dialogue. Our research,¹⁶ involving interviews with senior members of the regulatory community, indicates a need for government to communicate explicitly the trade-offs between its different policy goals, and which goals the regulator should prioritise. While the regulator should ‘listen’ to government, mutual respect suggests the regulator should be able to say ‘no’ and have this respected. Equally, regulatory independence cannot be used as a shield for preventing government intervention in markets, provided the government takes political responsibility for its actions. The government’s recent attempt to pressure Ofgem regarding the price cap may have been encouraged by the success of previous interventions in influencing Ofgem’s actions.

¹¹ Paragraph 177, pg 63, BEIS (2018b)

¹² Paragraph 180, pg 63, BEIS (2018b)

¹³ Paragraph 3.13, pg 25, House of Lords: Select Committee on Regulators (2007); paragraph 1.1, pg 2, BERR (2008); and BIS (2011).

¹⁴ BIS (2011).

¹⁵ This was a prevailing view among interviewees from the regulatory community, who suggested the proliferation of regulatory objectives made it more difficult to pursue any one of them successfully.

¹⁶ Harker and Reader (2018a)

3.1 Regulatory independence has diminished over time

Independence was a central tenet of regulation in the 1980s and 1990s, even being likened to a “quasi-constitutional” principle.¹⁷ Independence is seen as a means to insulate regulation from politicians who are tempted to favour short-term electoral advantage over long-term policy goals, and recognises that politicians likely lack the technical expertise to make efficient policy choices. However, the consensus around regulatory independence is beginning to break down; as the Committee on Standards in Public Life (2016) lamented, “the imperatives of independence are now less well-understood, and given less weight, than during the major privatisation exercises of the 1980s and 1990s”.¹⁸

There are a number of reasons why this diminution of independence may have occurred in the energy sector. First, energy policy has changed. At privatisation the emphasis was on efficiency driven by competition, then security of supply and climate change policies led to more direct government involvement, as evidenced by the creation of the Department of Energy and Climate Change (DECC) in 2008 (albeit now subsumed into the Department for Business, Energy and Industrial Strategy, BEIS). The Utilities Act 2000 also altered the regulatory institutions, with the gas and electricity regulators merged, and individual regulators replaced by a board. Furthermore, this Act gave greater formal priority to the consumer interest, while giving the government a new mechanism to give the regulator guidance on social and environmental issues.

3.2 Rising prices and inactive consumers: Regulation in the shadow of government intervention

The New Labour government elected in 1997 did not disrupt the long-standing policy of removing price caps in the domestic retail market, with full liberalisation completed in 2002. One of our interviewees observed that, in the early days, competition “floated all boats”; even consumers who did not switch saw price reductions, and so the policy was “politically neutral”.¹⁹ As prices started to rise, price differentials between active and non-active consumers gained prominence and created “a political problem”.

By the beginning of 2008, the government was increasingly concerned about price increases and price differentials, with there being vocal pressure for the regulator to intervene. Two controversial regulatory interventions followed. First was the non-discrimination clause (NDC, in force between 2009 and 2012) which aimed to reduce the ‘unfair’ price differentials between the prices suppliers charged in the regional markets where they were the incumbent and those regions where they were entrants. While the measure aimed to protect non-switchers, it reduced incentives to switch and dampened price competition. It also stimulated tariff proliferation, making consumers’ search for a better deal more challenging. This led to calls from politicians, including the prime minister, David Cameron, to require firms to switch inactive consumers to their cheapest tariff. These political interventions could not be ignored, and Ofgem limited the number of tariffs firms could offer, the ‘simpler tariffs policy’. Both this and the NDC policy were criticised by the CMA in its Energy Market Investigation.²⁰

¹⁷ Ed Richards, former Ofcom CEO, during evidence to the House of Lords Select Committee on Regulators; see paragraph 6.44, pg 71, House of Lords: Select Committee on Regulators (2007).

¹⁸ Paragraph 4.5, pg 16, Committee on Standards in Public Life (2016)

¹⁹ Figures 1 and 2 in Chapter 2 indicate much of the decline in average energy expenditure shares and incumbent electricity bills occurred before the retail energy market was opened to competition in 1999. It is important to distinguish competition in the retail energy market from competition in the wholesale (generation) market which occurred earlier.

²⁰ For the criticisms of the NDC see paragraphs 8.65-8.69, pg 359-361, CMA (2016b).

What lay behind these regulatory policy choices? In both cases, Ofgem was formulating policy in the shadow of threatened government intervention;²¹ in particular, the government legislated for ‘back-stop’ powers to implement the two policies if the regulator failed to act.²² The CMA observed that the parallel development of policy by DECC and Ofgem “is likely to create the perception of a lack of independence on the part of Ofgem”.²³

We explored how the threat of government intervention might influence regulatory policy with our interviewees from the regulatory community. One interviewee thought a regulator might be influenced because being overruled by government discredits the regulator’s reputation. Some thought the regulator would ultimately resist government pressure, but a number of respondents thought institutional changes had made the regulator less resistant to government pressure. The move to regulatory boards, in particular, was thought to have diluted independence. One interviewee speculated that: “it makes it easier for the government to choose people who it thinks will be compliant as far as it’s concerned. Who won’t ‘rock the boat’”. Another suggested a growing tendency for senior regulatory personnel to be ex-civil servants, whereas earlier regulators came from different backgrounds, and so were more likely to stand up to ministers.

Several interviewees noted that the move to boards coincided with a change in regulatory philosophy. In the 1990s, as a matter of government policy, energy regulation was underpinned by a dominant ideology that market forces, rather than the state, were better placed to determine outcomes. Likewise the early regulators saw their role in simple terms: to stop monopolies from making excessive profits and to promote competition. Another respondent thought that, in more recent years, the regulator had shifted from being a “hardcore pure economic regulator” to one placing an increasing emphasis on consumer protection.

3.3 The challenges of explicit communication between government and the regulator

The CMA (2016b) criticised the lack of “clear formal processes” for Ofgem to discuss policy design with government.²⁴ It stated that the lack of such processes “through which... disagreements can be surfaced transparently” was likely to lead to “a lack of robustness in regulatory decision-making”. The CMA’s proposal did not find support among our interviewees from the regulatory community. While some saw a need for increased transparency, one thought a formal process would merely add complexity, another considered it likely to lead to more “behind the scenes haggling”, and another suggested that communications between the government and regulator should not be public. Furthermore, one interviewee believed the regulator would not be willing to publicly criticise the government.

²¹ For examples see paragraph 18.34, pg 1228, CMA (2016b).

²² Energy Act 2010, sections 26-29 (permitting the Secretary of State to restrict price discrimination), available at: <http://www.legislation.gov.uk/ukpga/2010/27/section/26> (last accessed 09.08.18); and Energy Act 2013, section 139 (permitting the Secretary of State to restrict the number of tariffs suppliers could offer), available at: <http://www.legislation.gov.uk/ukpga/2013/32/section/139/enacted> (last accessed 09.08.18).

²³ para 18.35, pg 1228, CMA (2016b)

²⁴ Paragraphs 18.40-18.43, pg 1230, CMA (2016b)

How far can and should the government influence regulatory decisions? Many interviewees thought communication between the two is important, especially in coordinating policy. However, the relationship needed to involve “mutual respect”, with “government providing clarity about high-level strategic priorities and trade-offs, but then allowing the regulator independence in relation to detailed decisions”. Mechanisms to facilitate such communication do exist. The Energy Act 2013 made provision for the Strategy and Policy Statement (SPS), enabling the Secretary of State to set certain strategic priorities in the government’s energy policy, prescribe the “policy outcomes” to be achieved, and clarify the respective roles of Ofgem and DECC in pursuing these objectives.²⁵ The rationale behind the SPS was further elaborated by DECC (2011). It noted that previous attempts to align government policy with regulatory outcomes, including the Social and Environmental Guidance (SEG) under the Utilities Act 2000, had been unsuccessful, partly because of the “weak legal status of the Guidance”.

A number of interviewees criticised governments, past and present, for not using the statutory guidance in a meaningful way. According to one interviewee, the original SEG was of limited value since, rather than articulating priorities, it was a “very, very long shopping list of all the things government would like”. Similarly, another interviewee thought the SEG failed because it did not accept the inherent trade-offs between objectives, especially between affordability and decarbonisation. At the time of writing, an SPS has not been issued by government, despite being on the statute book for five years.

The contrast between this evidence and the CMA’s view raises the challenge that an agreeable government-regulator relationship may be preferable for those directly involved, but effective policymaking may require a certain degree of tension. Moreover the effectiveness of any communication mechanism depends on the willingness of both parties to use it in the way intended. This may be an issue if, for political reasons, a government prefers to avoid explicit prioritisation due to the potential pushback from those interests which are given ‘low’ priority.

3.4 Dealing with trade-offs involving distributional concerns

Alongside the consensus around the need for a clearer steer on the government’s priorities, our interviewees were consistent on how responsibility should be assigned for policies with ‘significant’ distributional consequences. The question of ‘fairness’ between consumers who switch and those who do not was something one interviewee thought was simply beyond the regulator’s remit:

“I mean, it’s just a moral minefield... and the only process we have to resolve those sorts of things is the political process and the ballot box. And an independent regulator having to put its own views on that is deeply problematic, because there’s no accountability.”

Another interviewee argued the regulator does not have appropriate policy tools to deal with trade-offs between efficiency and redistribution. Indeed, one respondent noted that while decisions with significant redistributive effects were rightly for the government, the real question was where you “draw the line”, suggesting that what counts as a significant distributional impact is itself ambiguous and probably contentious

²⁵ Energy Act 2013, section 131, available at: <http://www.legislation.gov.uk/ukpga/2013/32/section/131/enacted> (last accessed 09.08.18)

4 Fuel Poverty Policymaking

Another development potentially fostering a closer relationship between Ofgem and government is the former's role in monitoring the delivery of affordability support policies that can help meet governments' FP targets in Great Britain. Rather than funding energy bill reductions (the Warm Home Discount, WHD) and energy efficiency (the Energy Company Obligation, ECO) through general taxation, delivery of these policies has been the responsibility of energy retailers, under Ofgem monitoring, since 2013. As Chapter 5 explains further, FP concerns households who are unable to afford energy services within the home, in particular heat, and is perhaps the dominant framing of fairness in UK energy policy. By focusing on access to energy services FP includes, but extends beyond, the retail energy market. As a cross-cutting concept with links to low incomes and energy efficiency, FP involves a large range of actors across a range of policy venues. That the very nature of FP cuts across existing institutional silos, so responsibility for alleviating it is diffuse, may hamper progress in this area. Nevertheless, it is worth considering whether all the complexity in the FP space is unavoidable. Despite facing common issues and political pressures across the UK, documentary analysis and interviews with policy actors²⁶ indicate complexity is increased by variations in FP policy across the UK nations. Successfully navigating this complex landscape represents a challenge for organisations supporting those with energy affordability challenges.

4.1 Significant FP policy variations exist across the UK

FP Policy variations across the UK can be categorised into four groups covering legal powers, statistical definitions, FP alleviation targets and alleviation policies.

Energy policy concerning generation and transportation is broadly a reserved power lying with the UK Government. However, other FP related policies are wholly or partially devolved. In 2016 the Scottish Government gained the powers to design energy efficiency and FP schemes through the Scotland Act.²⁷ In Wales, some powers to encourage the energy efficiency of homes are devolved, although restrictions appear to be placed on the mechanisms to be used.²⁸

The statistical definitions of FP have also diverged across the UK's nations over time. Initially, all administrations defined FP as households where required spending to achieve a specified in-home temperature exceeded 10% of income (the 10% metric). In 2012, following the Hills Review,²⁹ England switched to the Low Income-High Cost metric, where households are judged FP if their required energy costs exceed the national median and their residual income, after the deduction of energy costs, is below the poverty line. In June 2018, the Scottish government introduced a definition³⁰ where households are FP if: (a) they are FP according to the 10% metric³¹ and (b) after the deduction of energy costs and childcare costs, a household is left with income below 90% of the 'UK Minimum Income Standard'.³²

²⁶ Errington (2019)

²⁷ Scotland Act 2016, Part 5, Section 58, available at: <http://www.legislation.gov.uk/ukpga/2016/11/section/58/enacted> (last accessed 09.08.18)

²⁸ The 'Housing' subject permits the "[e]ncouragement of home energy efficiency and conservation, otherwise than by prohibition or regulation", see Government of Wales Act 2006, Chapter 32, Schedule 7 Subject 11 (pg 122), available at: http://www.legislation.gov.uk/ukpga/2006/32/pdfs/ukpga_20060032_en.pdf (last accessed 09.08.18)

²⁹ Hills (2012)

³⁰ Scottish Parliament (2018)

³¹ Compared to the original 10% metric, the new Scottish definition deducts housing costs from income and alters the temperature some rooms must reach.

³² This attempts to define the income different household types require to reach a minimum socially acceptable standard of living. It is produced by the Centre for Research in Social Policy at Loughborough University.

A similar tale of splintering applies to the targets for tackling FP. The initial target in the nationwide 2001 FP Strategy was for FP to be eradicated “as far as reasonably practicable” by 2016. The divergence has occurred in response to this original eradication target being missed by a large margin. In 2015 the English target was altered to ensuring a minimum standard of energy efficiency for FP households is achieved by 2030, subject to the clause “as far as reasonably practicable”. Accompanying Scotland’s change in FP definition, in 2018 a bill before the Scottish parliament sought a statutory target to achieve a FP rate below 5% by 2040. In Wales a statutory FP eradication target exists (but with a 2018 delivery date) and in Northern Ireland eradicating FP by 2016 never had a statutory basis.

The changing FP definitions raised concerns among our³³ interviewees in the FP policy arena about reduced policy ambition regarding FP alleviation. There was also concern that focussing on revising statistical definitions represented a distraction from improving households’ welfare. Regarding the consultations around the revised Scottish definition, one interviewee remarked:

“If someone wants to go into a dark corner and think about this [fuel poverty definition] that’s fine. My bottom line is that we need to do something about fuel poverty and not use this as a further reason to not start now. Because certainly in discussions with ministers the attitude seems to be a need to do work on the definition first. And I just think that there is an abdication of responsibility.”

Regarding FP alleviation policies, the Winter Fuel Payment and the Cold Weather Payment (tax-funded income benefits) are provided in all four UK nations. As noted above, in Great Britain there are also ECO and WHD. However, there are differences in the taxpayer funding of energy efficiency schemes. In Scotland, energy efficiency has been connected to national infrastructure projects and includes taxpayer contributions. In Wales there is also government spending on energy efficiency, but with greater embedding into a broad sustainability strategy. However in England there has been no taxpayer funded energy efficiency scheme since the end of Warm Front in 2012.

While there are significant differences in FP policy detail between the UK’s nations, common themes do exist. First, between 2012 and 2017, FP remained a clear topic of debate among democratically elected representatives³⁴ and the committees who scrutinise their respective governments. Second, all administrations have a statistical definition of FP and a FP target. Third, many interviewees in the FP policy arena highlighted a common challenge across administrations, that while the number of FP households has grown, resources for FP alleviation are constrained by the austerity agenda of the Westminster government.

Given that FP is treated as an issue across the UK, are the differences in policy detail helpful or problematic? The different approaches may duplicate policymaking effort and burden non-government actors in the FP space; equally the differences may reflect a freedom for political actors in different administrations to choose different FP approaches and tailor policies to local situations.

³³ Errington (2019)

³⁴ For example, see the Debate on Fuel Poverty, House of Commons Hansard, vol 623 column 368, available at: <https://hansard.parliament.uk/Commons/2017-03-14/debates/11A3AF4E-5277-4E2A-A567-98656DB78F5F/FuelPoverty> (last accessed 14.08.18)

4.2 A complex range of actors influence FP policy

Documentary analysis and elite interviews³⁵ indicate a large number of organisations and institutions are involved in FP policy formulation. Figure 2 suggests a potential mapping of policy venues and links between them.³⁶ Each of the broad spaces indicated in Figure 2 have policy practitioners with expertise used in developing and delivering FP policy. In the democratic governance space, elected representatives and appointed committees provide scrutiny of FP policy.

It is worth noting how some of the complexity of Figure 2 (beyond devolution) comes about. For example, private firms are responsible for delivering ECO and WHD with each offering different versions of these policies, and the smallest energy retailers do not have to provide them at all. Additionally, the network companies (regional monopolists owning pipes and cables) are increasingly being drawn towards the FP arena as they identify ‘vulnerable’ households through the ‘Priority Service Register’, data seen as potentially useful for targeting FP policies.

Navigating the complexity in Figure 2 was seen as a challenge by many interviewees in the FP policy arena. While interviewees recognised that charities dealing with relevant communities and excluded groups have important knowledge for policy design and implementation, there are limits to these organisations’ resources, as chapter 4 reports. The duplication of FP strategies across the devolved administrations, and of affordability support policies across energy suppliers, but with differences in detail, presents extra, and possibly avoidable, demands on charities’ limited resources.

5 Conclusion

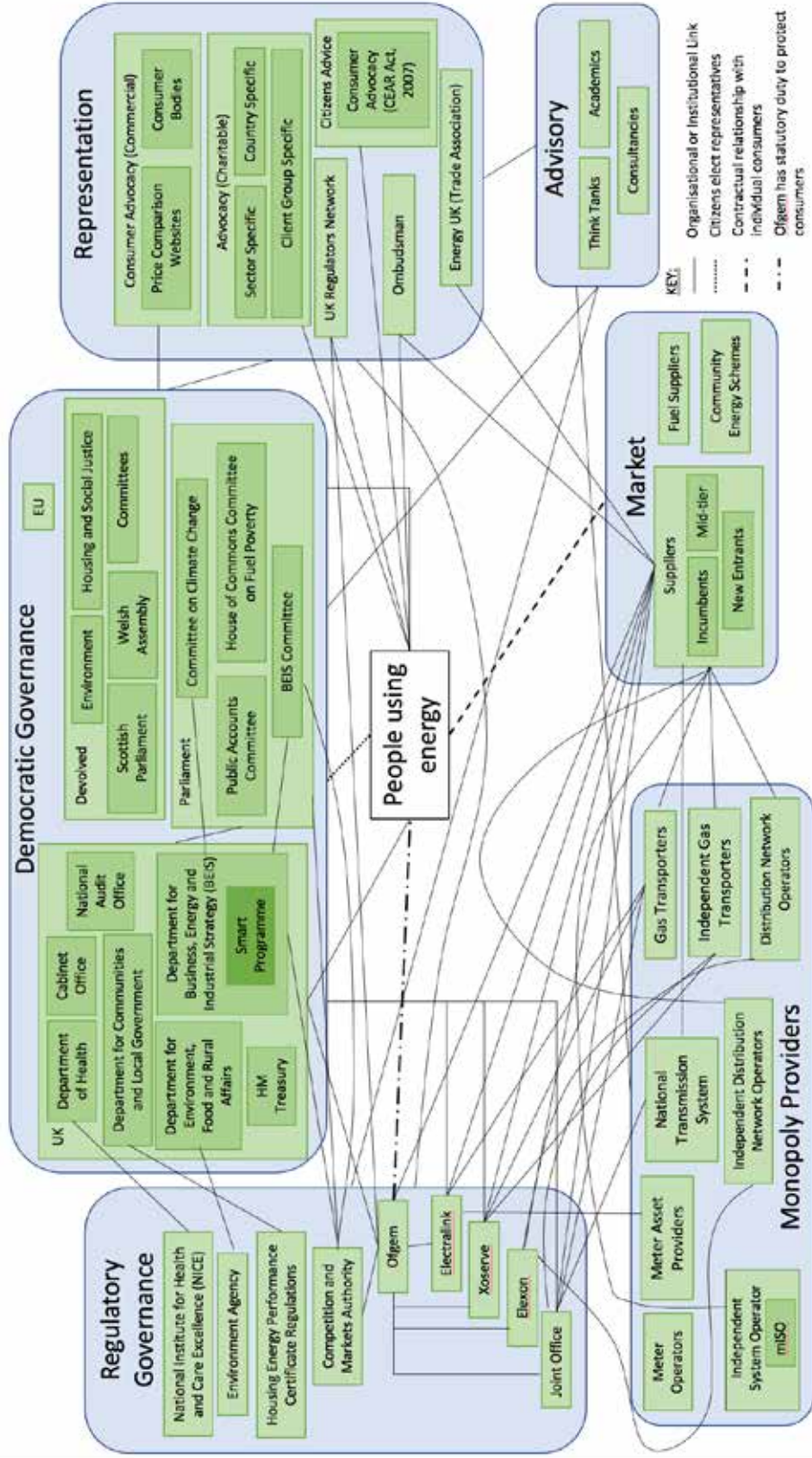
The institutional space around the retail energy market was relatively simple in the early days of privatisation and liberalisation: the market through competition was going to drive down prices, the regulator was charged with pure economic regulation and the government had limited involvement. This period could also be characterised by a separation of responsibility reflecting textbook economics: the market maximises efficiency, while distributional objectives are left to taxes and income benefits. More recently, the institutional space has grown increasingly complex as a broader range of objectives, including distributional concerns, have been given to the regulator. This complexity of policymaking and implementation carries over to FP, with a wide set of institutional actors taking a variety of different approaches, despite all broadly agreeing on the same basic concern. The ambiguities of the new complexities require increased communication between the government and the regulator and, moreover, have provided greater opportunities for the government to ‘pressure’ the regulator.

³⁵ Errington (2019)

³⁶ We accept the classification of organisations in Figure 2 can be challenged

Figure 2 Six spaces of Fuel Poverty policymaking in Great Britain

(Source: Errington, 2019)



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Chapter 4

Engagement with Energy Purchases has Many Facets

Key Points

We extend analysis of ‘engagement’ with the energy market beyond consideration of search and switching rates

Policymakers need to be aware that engagement can take a variety of forms

Householders with affordability challenges may show considerable practical and emotional engagement with the management of energy consumption, even if they do not switch suppliers or tariffs

For those on very low incomes the control and predictability of expenditure is key: pre-payment meters may be preferred and switching may be viewed as too risky

Engagement with the policymaking process can be problematic. Resource restrictions may limit the ability of charities representing consumer and ‘vulnerable’ groups to engage

Identifying persistent non-switchers from basic survey questions may be problematic

Measures of engagement for micro and small businesses (MSBs) need to recognise multi-year contracts are prevalent; ‘optimal’ engagement by MSBs is likely to be different to that for households

The boundary between a household and some MSBs can be unclear. More evidence is needed on how this affects behaviour in both the domestic and non-domestic energy markets

MSBs dislike the quantity of communications received from intermediaries, suggesting direct regulation of intermediaries could have benefits

1 Introduction

Energy policy since privatisation has focused on reforming markets to provide the best deals for energy purchasers. The initial aim was to create a market where competing suppliers increased the available choice. Constraints were then imposed to enhance the fairness of offers (e.g. non-discrimination clauses in the period 2009-2012), followed by measures to make searching and switching easier, including boosting consumers' responses to offers (the Retail Market Review, 2012). In the initial period consumers were expected to engage with offers and to find switching straightforward. In the latter period the expectation of active consumer engagement has been questioned and surveys have been judged to show 'disappointing' levels of market engagement.¹ Simultaneously, the policy responses designed to boost engagement have also been criticised, especially by the Competition and Markets Authority (CMA).²

The policy direction has now shifted further with the government legislating for a wide price cap to 'protect' unengaged consumers on default tariffs from prices that appear high relative to fixed-term tariffs. This reflects an acknowledgment of the difficulties inherent in relying on market engagement to deliver 'good' outcomes, and the risk that unengaged consumers will be 'exploited' by firms in the absence of regulation protection. We expand the discussion of 'engagement' beyond search and switching rates, while also highlighting the methodological challenges of reliably assessing engagement in its traditional market framing.

First, domestic energy consumers' engagement is considered. Some practical and conceptual challenges of identifying persistent non-switchers are discussed; while qualitative evidence from social housing tenants highlights that households who appear to be disengaged from the energy market may nevertheless be emotionally engaged with energy consumption decisions.

Second, engagement can be assessed in terms of participation in the policymaking process. While only some citizens may want to engage directly with policymaking, policymakers still need to hear the views of those they claim to be assisting. Often those suffering energy affordability challenges will be represented by consumer groups and/or charities. While consultation procedures give these organisations an equal opportunity for engagement, not all organisations are equally able to take advantage of these opportunities because of resource constraints. Such limitations risk the views of crucial groups going unheard.

Third, micro and small businesses' (MSBs) engagement is considered. At a basic level the boundary between households and many MSBs appears complex and one where there is little evidence. We then explain that assessing MSB engagement needs to account for many MSBs having multi-year contracts. Further, MSBs' dislike of brokers' and suppliers' sales approaches suggests complexities around the CMA's proposals to increase MSB engagement and that direct regulation of brokers may be beneficial.

¹ For example, see 'Energy switching: Why the customer inertia?', Tom de Castella, BBC News, 21 September 2011, available at: <https://www.bbc.co.uk/news/magazine-14989860>

² Paragraphs 168-177, pg 40-42, CMA (2016a)

2 Engagement by Domestic Energy Consumers

2.1 Reliably identifying those who have never switched from survey data is challenging

The converse of engaged consumers are those who are unengaged. Over time concern has grown regarding the unengaged and whether they are missing out on the market’s benefits. A wide range of papers and surveys address consumers’ short-term switching behaviour, e.g. their 12-month switching rate, and the factors associated with switching at particular points in time.³ However, at the centre of political debate are consumers who persistently do not switch and who potentially suffer persistently ‘unfair’ outcomes. Our research suggests there are significant questions around using survey data to identify persistent non-switchers, and that robust analysis may rely on access to suppliers’ databases. These challenges may affect researchers’ ability to assess independently the household types who would, in theory, benefit from a wide price cap.

We analysed data from a 2011 Centre for Competition Policy survey⁴ to identify the characteristics associated with consumers who had remained with their region’s incumbent electricity supplier since market opening. The survey provided two ways to identify such consumers:

- 1 A question directly asking whether a consumer had ever switched
- 2 Comparing the current supplier reported by a household with the incumbent supplier in their region.

However, Table 1 shows substantial inconsistencies between the two approaches.⁵ Around a third of respondents (numbers in bold) provided apparently inconsistent answers.

Table 1 Respondents reporting they have never switched and those reporting a current supplier matching the regional incumbent

(Data: 2011 Centre for Competition Policy consumer survey)⁶

		APPROACH 2		Total
		Current supplier does not match Incumbent	Current supplier matches Incumbent	
APPROACH 1	Reports Have Switched	700	111	811
	Reports Never Switched	321	184	505
	Total	1021	295	1316

3 Deller et al (2017) provide a review.
 4 Deller, Turner and Waddams Price (2018). Details of our research papers’ methodologies are provided in Appendix 1.
 5 The reported data controls for basic issues e.g. changes in incumbents’ brand names.
 6 Deller, Turner and Waddams Price (2018)

Without matched data from suppliers it is difficult to say which approach is more accurate. However, there are intuitive explanations for the discrepancies, including:

Imperfect recall: this seems a noticeably more severe problem for Approach 1 as the required recall covers more than a decade.

Multiple switches: a household may have switched away from the incumbent but then switched back.

House moves: for individuals moving to a home where the previous occupier had switched, the default supplier will not be the incumbent.

The latter two explanations are primarily a problem for Approach 2.

There is a further conceptual point about the extent of non-engagement indicated by remaining with the incumbent, beyond the obvious point that households may prefer the incumbent. As we move further away from the first opportunity to switch in 1998, the signal that a household (in the market since 1998) is unengaged grows stronger. However, there is a second issue: as time moves forward a greater percentage of households with the incumbent were not energy purchasers in 1998 because they were too young. The longer the time since market opening the greater the variation in disengagement that remaining with incumbent or reporting never switching could represent.

To identify 'persistent' non-switching from surveys, questions need to: (a) identify a specific period over which to assess non-switching, e.g. 3-5 years; (b) ask whether a respondent has been responsible for energy bills throughout the period assessed; and (c) identify any complicating factors around house moves.

2.2 Low income households can be highly engaged with energy, if not the energy market

Engagement is often framed in terms of participation in the retail energy market. Some evidence suggests those on low incomes and with low educational attainment are less engaged with the energy market.⁷ Policy discussions often focus on how to increase engagement, so these consumers, in particular, can benefit from switching. Our in-depth research with social housing tenants⁸ suggests that, while those on low incomes may not switch, they exhibit high engagement with the management of energy consumption/expenditure (also see Chapter 5). Our research confirms earlier findings⁹ that households often prefer Pre-Payment Meters (PPMs) for the expenditure control they offer. Exercising this control involves considerably more attention, time and emotion than infrequently switching supplier would, as illustrated by Barbara in Box 1.

⁷ Figure 2, page A9.1-24, CMA (2016b)

⁸ Hargreaves and Longhurst (2018)

⁹ Waddams et al (2001)

Box 1 Barbara – Emotional engagement with energy

Barbara lives in a 1990s semi-detached house. She works full time and is a single parent living with one child. Her main heating system involves storage heaters and she uses a PPM. She is very conscious of her energy usage and worries about it:

“Because it costs me so much... I’m constantly worrying if I can afford to put electric on. It’s like I’ve got in today and I had no electric so I then had to put my emergency in and then I know that that emergency is going to get me through probably tomorrow and then Friday I’ll return home from work and I won’t have any electric again.”

While the main storage heater in her living room has been replaced (reducing her bill from £70 to £40 per week), she still finds it hard to use. She continues to ration her heating, using none upstairs. She feels embarrassed to ask for financial help from friends and family, compounding the worry and contributing to a sense of isolation. Her rent arrears led to tenancy support staff becoming involved. She now has a payment plan for her debts and is very grateful of the support from the housing association.

For those on the very lowest incomes who significantly restrict their energy consumption, engagement with energy was highly emotional. The emotional aspects of Fuel Poverty (FP) have been neglected in policy debates and, where they have been identified in research, have typically been understood as merely an outcome of FP. In contrast, our interviews revealed how emotions can deepen affordability challenges and may inhibit market participation. First, interviewees expressed constant worry and anxiety about energy expenditure, in particular the fear of large, unexpected bills and debt. While many interviewees prefer PPMs for control, this has often come at the price of higher unit energy costs. Second, ‘care relationships’ were significant: many interviewees reported they would use less energy if they did not have to care for children or pets. Equally, some interviewees drew on relations with family and friends to borrow money to pay for energy. Third, stigma and embarrassment prevented several interviewees from asking for help prior to their situations deteriorating. Housing association staff saw building trust and overcoming stigma as a significant difficulty.

3 Engagement with the Policymaking Process

Beyond direct engagement with the energy market, there is the question of whether consumers, or at least their representatives, are heard when policymakers design regulations and policies which influence energy affordability.

3.1 Utilising access to the FP policymaking process can be challenging

Documentary analysis and interviews with various actors¹⁰ suggests the technical nature of policy design presents a barrier to participation for some groups when FP policy moves towards implementation. Debates in parliament¹¹ and devolved assemblies refer to citizens' rights to warm, light homes, while highlighting constituents' experiences. These issues motivate action and reflect the political salience of FP, but an abrupt shift often occurs between these public discussions and the option evaluation and policy design processes. Rather than focusing on rights, the discussion centres on dwellings' building materials and/or consumers' market behaviours. The focus turns to delivering a specific set of energy bill reductions and targeting this support to specific groups, instead of discussing a universal right to affordable energy. Interviewees from the FP policy arena felt engineering and economics expertise became dominant in designing FP policy delivery.

Moreover, not all organisations can contribute equally to traditional (and statutory) processes, especially when there are multiple rounds of evidence gathering. The actors within the FP policy system are well-networked and policymakers do respect many traditional aspects of procedural justice including: open and transparent processes, regular reporting against clear targets and holding consultative exercises which are, in principle, open to all.

However, there is little acknowledgement of the costs of engaging with procedural exercises, particularly for charities who provide crucial insight into the lives of 'vulnerable' individuals and FP. While procedures often provide an equal opportunity to contribute or equal access to decision makers, unequal resources or a preference for particular types of evidence can present barriers to certain groups.

As austerity measures reduced funding for the third and public sectors over the period 2012-2017, these organisations found it increasingly difficult to participate in debates and represent their constituents' views. For example, one interviewee explained:

"...we've had to cut right back... when we are better resourced then we'll do what we can to influence any policies that are going to have either a positive or negative effect on fuel poverty."

Figure 1 illustrates how injustice regarding access to the policymaking process, by limiting the voice of particular groups, can lead to inequalities in recognition and distributional injustices regarding the outcomes achieved by households.

Policymakers need to understand the potentially limited engagement with existing procedures by groups who are close to those experiencing energy affordability challenges. A limited response may indicate limited resources, rather than limited interest or concern about a particular proposal. Ideally, policymakers should consider ways to make responding to consultations easier for third sector bodies.

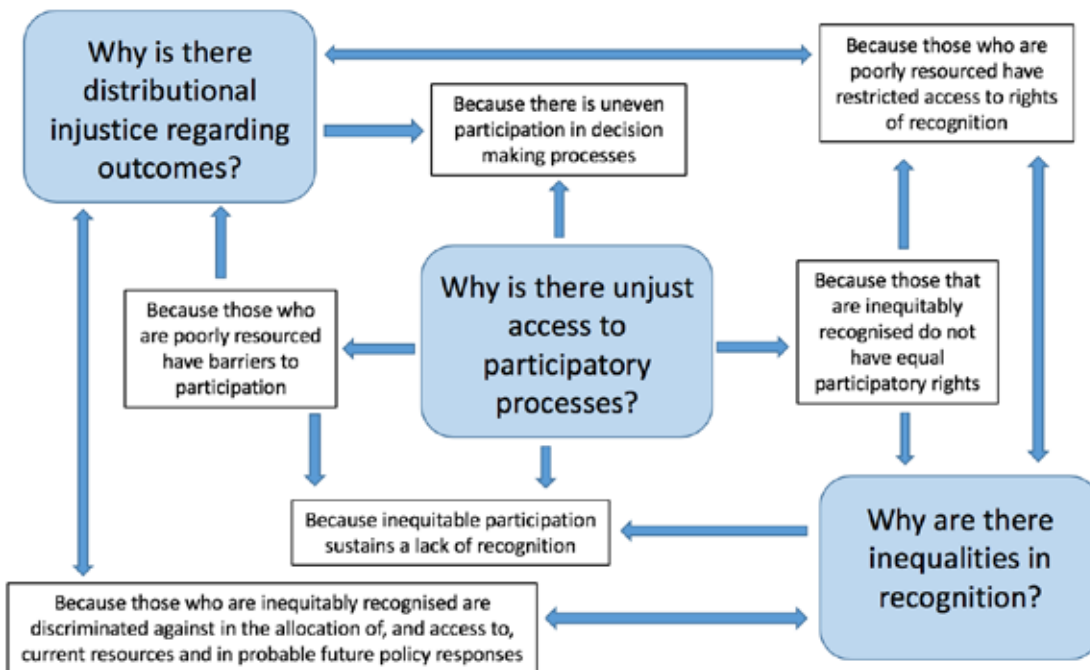
The structure of policies may also restrict charities' ability to support intended recipients. Assistance delivered by energy suppliers generally leads to a diversity of provision and a substantially more complex space for organisations to navigate when supporting vulnerable clients (see Chapter 3).

¹⁰ Errington (2019)

¹¹ For example, see the Debate on Fuel Poverty, House of Commons Hansard, vol 623 column 368, available at: <https://hansard.parliament.uk/Commons/2017-03-14/debates/11A3AF4E-5277-4E2A-A567-98656DB78F5F/FuelPoverty> (last accessed 14.08.18)

Figure 1 Diagram illustrating how unequal access to policy processes can lead to unequal recognition and injustice regarding the distribution of outcomes

(Source: Errington, 2019; adapted from ideas in Schlosberg, 2007)



4 Engagement by Micro and Small Businesses

The energy market engagement of MSBs has received less attention than that of domestic consumers, and relevant evidence is limited. The core concern is whether MSBs have the same ability as larger firms to achieve good deals in a market which is noticeably more complex than that for domestic consumers. Concepts around searching and switching need adaptation to fit MSBs' specific experiences.

4.1 The boundary between households and many MSBs is unclear

Existing surveys exclude many microbusinesses because of their design. Ofgem's MSB surveys¹² restrict sampling to businesses which are both directly responsible for purchasing energy and use a non-domestic contract. This means the samples are unrepresentative of the full population of MSBs, omitting the many small businesses run from homes using domestic contracts, and MSBs where a landlord holds the contract with an energy supplier. Such exclusions appear non-trivial: BMG (2015) estimates that of the 2.1m firms with 49 or fewer employees in 2014, fewer than a million used a non-domestic contract. Sampling only MSBs on non-domestic contracts means evidence around two questions regarding MSBs' engagement is largely missing:

¹² Deller and Fletcher (2018) provide further detail.

- (a) What influences an MSB's choice between a domestic and non-domestic contract?
- (b) How does operating an MSB from a home influence a household's engagement with the domestic energy market?

These points could be addressed within Ofgem's household consumer survey by three additional questions asking:

- (i) Whether a household runs an MSB from their home;
- (ii) For confirmation that the household uses a domestic contract;
- (iii) If the answer to (i) and (ii) is yes, has the respondent ever considered using a non-domestic contract?

Asking (ii) is valuable as Ofgem's household survey does not restrict sampling to households with domestic contracts.¹³ Ofgem's MSB survey could address (a) by including additional questions on whether a firm had deliberately chosen a non-domestic contract over a domestic contract and, if so, why.

4.2 Measures of MSB¹⁴ engagement must recognise multi-year contracts

In the domestic market attention is often focused on the 12-month switching rate (the percentage of households reporting a switch of supplier in the previous 12 months). Yet such a focus is inappropriate for understanding MSBs' engagement, since 54% report having a fixed-term contract lasting at least 2 years.¹⁵ Only a limited proportion of MSBs are therefore in a position to switch in any 12 month period without substantial costs,¹⁶ and so the 'raw' 12-month switching rate will likely underestimate MSBs' true engagement.

The estimated raw 12-month MSB switching rate was 23.4% in 2014, itself noticeably higher than the 13% for residential electricity and gas consumers.¹⁷ A 'back of the envelope' correction for multi-year contracts is to alter the base for calculating the 12-month switching rate to reflect the likely proportion of firms that were free to switch in the relevant 12 months; such a correction yields a 12-month MSB switching rate of 34.2%. Since only 2.5% of MSBs in 2014 had a fixed-term contract lasting 5 years or more, an alternative engagement measure is the 5-year switching rate, which was 59.8% in 2014.

While this evidence suggests the MSB switching rate is higher than for households, there are two potential caveats. First, aggregate switching rates for all non-domestic consumers (not just MSBs) are noticeably lower, at 13% for non-half-hourly metered electricity, 15% for half-hourly metered electricity and 19% for gas.¹⁸ Second, there is a large jump in the 5-year MSB switching rate for the survey data between 2013 (when it was no more than 40%)¹⁹ and 2014, which coincides with a significant sampling method change.

¹³ See section 1.2, Consumer Engagement in the Energy Market 2017 – Technical Report, GfK UK Social Research, 21 September 2017, available at: https://www.ofgem.gov.uk/system/files/docs/2017/09/consumer_engagement_survey_2017_technical_report_0.pdf (last accessed 10.08.18)

¹⁴ All reported MSB survey results relate to those MSBs responsible for purchasing energy and on a non-domestic contract.

¹⁵ Deller and Fletcher (2018)

¹⁶ To exit a non-domestic contract requires an MSB to pay the contract's full value, a far greater amount than the 'penalties' for early exit facing domestic consumers.

¹⁷ The residential switching rates are from pg 10, Ipsos MORI (2014).

¹⁸ Based on switching data from suppliers, paragraph 3.55, pg 34, Ofgem (2015).

¹⁹ Table 16, pg 46, The Research Perspective/Element Energy (2013).

4.3 Many MSBs dislike brokers' sales behaviour

In 2016 the CMA concluded that increasing MSB engagement was important for competition and proposed changes to facilitate this, in particular that a database of 'disengaged' MSBs' contact details²⁰ be made available to suppliers, so they could send marketing materials to prompt MSB switching. Also, the CMA shied away from formally recommending the regulation of energy brokers and other intermediaries. We present evidence²¹ potentially questioning both of these decisions.

Brokers, rather than price-comparison websites, form a key part of the switching process for many MSBs. The question is whether brokers' potentially problematic marketing behaviours can be addressed without inhibiting their ability to facilitate search and switching.

Figure 2 shows MSBs' survey responses are skewed towards dissatisfaction with energy suppliers' and brokers' sales approaches and their overall view of brokers is skewed towards the negative. This contrasts with a clear positive skew in MSBs' satisfaction with their current energy supplier,²² and a broadly neutral stance towards the energy market's performance as a whole.

Figure 2 MSBs' satisfaction with the sales approach of energy suppliers, satisfaction with the sales approach of brokers, and their overall view of brokers²³

(Data: 2014 BMG Research survey for Ofgem)²⁴

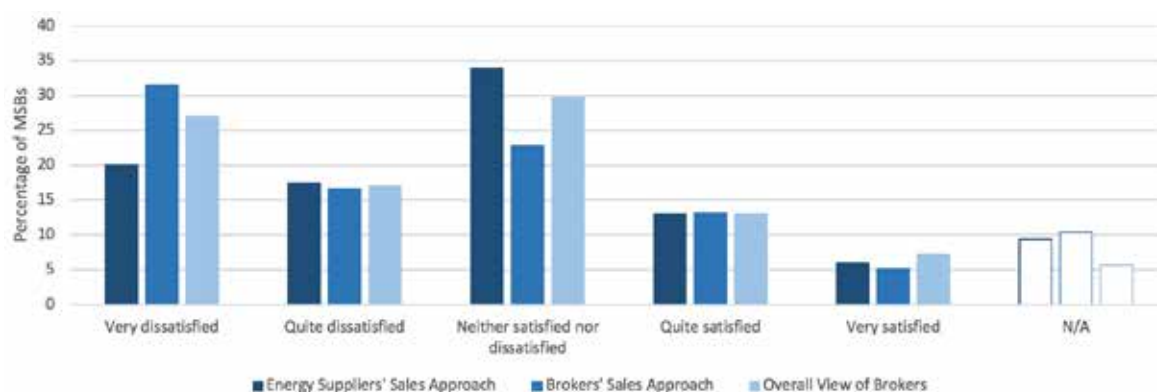


Figure 3 highlights that MSBs who used a broker as the primary method to select their current energy deal had a broadly positive view of energy brokers, while MSBs who either had no contact or had contact with a broker but used an alternative primary choice method, held a mainly negative view of brokers. In other words, MSBs who used brokers to select their current deal appear to value brokers' services.

²⁰ MSBs can opt-out of the database.

²¹ Deller and Fletcher (2018)

²² Deller and Fletcher (2018)

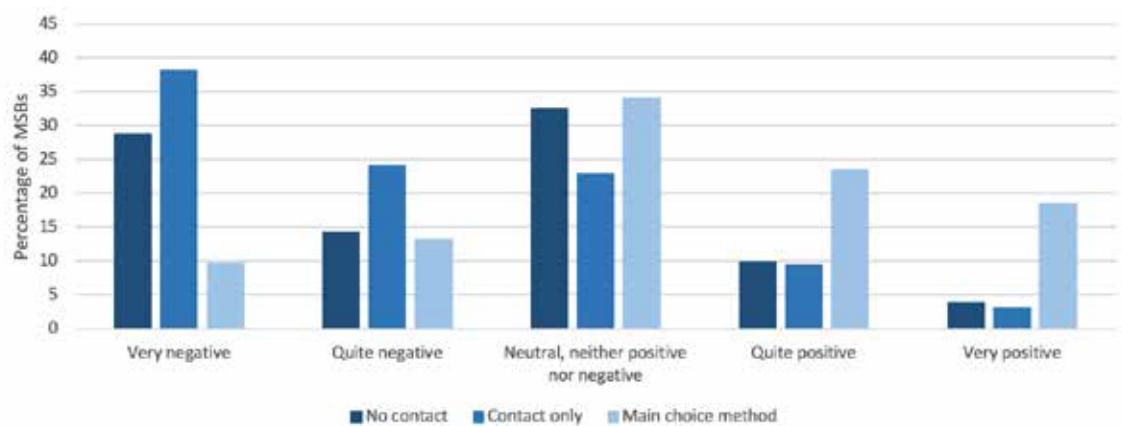
²³ The question for MSBs' view of brokers had response options running from "Very negative" to "Very positive". N/A covers responses of "Don't Know", "Not Applicable" and missing data.

²⁴ Deller and Fletcher (2018)

However, a major issue for MSBs concerning brokers is the quantity of unsolicited sales calls received. 14.4% of MSBs reported either receiving at least 50 phone calls or too many calls to remember in the 12 months prior to the survey. As the methodological appendix explains, further analysis was performed on a subset of respondents whose responses related to their electricity supplier. Among this subset of respondents, even after controlling for a broker being an MSB's main choice method, receiving more broker approaches is associated²⁵ with a reduced probability of an MSB reporting a positive view of brokers.

Figure 3 MSBs' overall view of energy brokers by extent of broker contact/use when selecting their current deal

(Data: 2014 BMG Research survey for Ofgem)²⁶



Such aversion to broker contact does not bode well for a positive MSB response to an increase in marketing communications generated from a disengaged customer database. Our results suggest that the final database plan should limit the quantity of communication, for example, by using a letter sent by a 'trusted voice' to identify the cheapest deals available to an MSB.

Our evidence also suggests that direct regulation of brokers may be beneficial in discouraging behaviours which MSBs dislike. However, any decision to limit broker contact would need to weigh the benefit of reduced nuisance against the risk of reduced switching. Restricting contact would present fewer concerns if it could be shown that those MSBs using a broker as their main choice method had proactively contacted the broker, rather than that their market engagement had been stimulated by unsolicited contact. Unfortunately, the survey data analysed does not allow us to make this distinction.

²⁵ Result from ordered logit regressions.

²⁶ Deller and Fletcher (2018)

5 Conclusion

Understanding the full breadth of engagement is important in designing policy. Householders who have not engaged with the energy market are not necessarily unengaged, since they may be highly involved with the management of energy consumption. In the MSB market, apparent disengagement may result from many businesses choosing multi-year contracts which limit the frequency of searching and switching. These cases highlight the importance of policymakers appreciating the detail of different consumers' interactions with the energy purchasing process before attempting to interpret aggregate figures. Developing statistics and policy around an 'ideal' form of consumer engagement may fail to address the real-world issues facing particular groups. Similarly, when assessing consultation evidence, policymakers should note the differing levels of resource different groups have to provide evidence in the form which policymakers desire.

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Chapter 5

Fuel Poverty:
Characterising a
Complex Problem from
Survey Data and the
Lived Experience

Key Points

Fuel poverty results from, and exerts influence on, a wide range of inter-related but distinct problems and cannot be sensibly addressed in isolation from these factors

The current focus of fuel poverty policy - improving the housing stock's energy efficiency - does not address all these factors

By focusing on 'required' (modelled) energy expenditures, the two official fuel poverty statistics miss important behavioural factors

Fuel poverty rates appear higher in social housing when based on reported rather than required energy expenditures

The official Low Income-High Cost (LIHC) fuel poverty statistic may underestimate problems among some social housing tenants struggling to afford warmth

Survey data indicate that fuel poverty is more episodic than a basic measure of income poverty

Fuel poverty has proved a challenging concept to operationalise, so the meaning and appropriateness of official fuel poverty statistics remains contested

Focusing on multiple specific and directly observable issues affecting individual households, e.g. low income, precarious employment, cold homes, may present a better way forward

1 Introduction

'Fuel Poverty' is often used as a frame for discussing fairness in the retail energy market. Such a framing extends beyond the retail energy market, while not necessarily addressing all issues of concern within the market. Fuel Poverty (FP)¹ is defined in the Warm Homes and Energy Conservation Act 2000 as: "a household living on a lower income in a home which cannot be kept warm at reasonable cost".² However, often a broader definition is used covering the affordability of all energy services in the home.³ Both definitions incorporate several links between the retail energy market and FP, including energy prices, payment methods, debt recovery policies, and any affordability support schemes delivered by energy retailers.

Operationalising FP into meaningful statistical indicators has proved challenging and remains subject to considerable debate. We provide additional, and often improved, evidence highlighting the uncertainties around existing FP indicators. This evidence is presented in this chapter and Chapter 6.

Rather than using a single statistic to represent FP, we suggest that FP should be viewed as a symptom of several underlying problems. Each real-world phenomenon can then be assessed individually, together with the extent to which society wishes to alleviate it and which interventions can resolve the issue most effectively at least cost. If the main concern, for example, is households living in the cold, it seems desirable to focus on this directly rather than the more nebulous term of FP. We wish to stress that, while FP statistics are problematic, issues of deprivation still warrant further investigation and policy measures.

The current chapter focuses on two main issues. First, the official Low Income-High Cost (LIHC) indicator may omit some households who struggle to afford energy services, in particular some social housing tenants. Our evidence raises questions about the ability of energy efficiency interventions to address FP effectively, though we recognise energy efficiency's contribution to reducing FP's severity in individual households. Second, we show that for many households FP is episodic, often resulting from negative income shocks. For these households there may be more effective interventions than energy efficiency retrofits.

As background to the evidence itself, we first outline the two official FP statistics that have been used in England.

In the first UK government's FP strategy the statistical FP definition was the '10% metric': a household was FP if their required energy expenditures (ENEX) exceeded 10% of household income. Following the Hills Review,⁴ the LIHC indicator was adopted in England, which classifies a household as FP if: (a) their required ENEX exceeds the national median; and (b) their income, after the deduction of required ENEX, lies below the income poverty threshold, which is currently 60% of median income. In this LIHC definition, income is calculated after the deduction of housing costs and is equivalised to adjust for the number of household occupants. The LIHC indicator is a 'relative' metric, since the classification of FP depends on a household's position relative to the average. Alongside the headline LIHC FP rate, a second indicator describes the 'FP gap', which is the monetary amount required to take a household out of LIHC FP. Figure 1 illustrates the LIHC indicator.

1 We also use FP to denote 'fuel poor'.

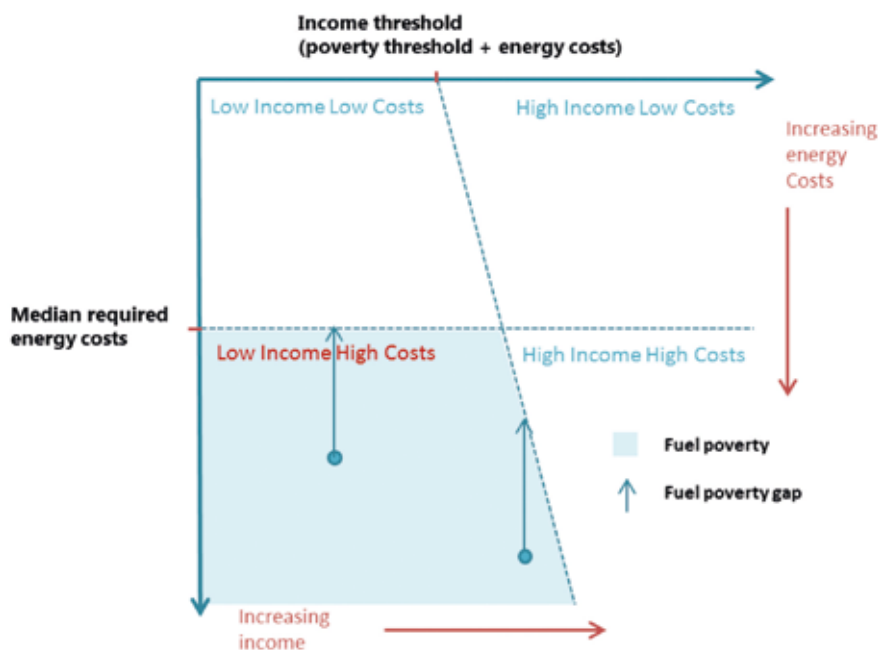
2 Paragraph 1(1), Warm Homes and Energy Conservation Act 2000, available at: <http://www.legislation.gov.uk/ukpga/2000/31> (last accessed 06.8.18)

3 Example, see Thomson and Snell (2013)

4 Hills (2012)

Figure 1 Classifying households according to the Low Income-High Cost (LIHC) FP indicator

(Source: Department for Business, Energy and Industrial Strategy)⁵



Official FP statistics are based on ‘required’ ENEX, the estimated ENEX needed to maintain a specified temperature⁶ based on an engineering model incorporating the detailed physical characteristics of a dwelling. This in turn requires a comprehensive dwelling survey, making it difficult for practitioners to identify households that are officially FP, and leading many researchers, as in this study, to base FP analysis on households’ reported ENEX.

The relationship between FP rates using reported and required ENEX is complex. Moreover perception-based indicators,⁷ such as an inability to afford to keep one’s home adequately warm, show limited overlap with the 10% and LIHC indicators when these are based on reported ENEX. Chapter 6 provides evidence on both of these issues.

⁵ Pg7, BEIS (2018)

⁶ In England, the required temperature is 21°C in a primary zone and 18°C in a secondary zone.

⁷ We use ‘perception-based’ to refer to indicators often labelled ‘subjective’, and ENEX-based to refer to indicators others have labelled ‘objective’. The perception-based indicators result from households’ agreement or disagreement with statements included in surveys.

Since the official FP definitions are based on engineering models of dwellings, and assumptions about 'optimal' temperatures, any households preferring lower temperatures (than assumed in the modelling) may be wrongly classified as FP. For other FP households there are a range of factors, including housing choices, the condition of heating facilities and behavioural responses that contribute to complex and shifting issues extending beyond energy efficiency. Taking this more holistic approach provides a way forward for FP research and policymaking: rather than constructing a single FP statistic, the frequency of each real-world phenomena of concern could be assessed, and the relationships between these phenomenon and household characteristics could be explored. Such an approach reflects the complex reality of FP and should help policymakers to design and deliver effective interventions.

2 Fuel Poverty and Social Housing

Since 2015, the official FP target has been expressed in terms of an energy efficiency rating: as many FP homes as is reasonably practicable will have a minimum energy efficiency rating of C by 2030.⁸ This target focuses on, and can be achieved by, installing technology rather than by demonstrating a significant improvement in households' welfare, despite the latter seeming a more appropriate focus.

2.1 Official FP statistics may understate affordability issues in social housing

Over the last two decades there has been a concerted drive to improve the energy efficiency of social housing through initiatives such as the Decent Homes Programme which was applied to 1.2 million properties.⁹ Social housing providers have also had access to energy efficiency programmes such as the Carbon Emissions Reduction Target (CERT) and the Energy Company Obligation (ECO). These 'retrofit' improvements are often presented as a win-win in terms of addressing both FP and decarbonisation targets¹⁰ which reinforces a policy narrative that improving energy efficiency is the most effective way to address FP.¹¹

Reflecting the investment in energy efficiency, social housing has the highest energy efficiency (SAP ratings) of all tenures, as illustrated in Figure 2. Since official FP statistics use required ENEX, households with higher energy efficiency ratings are less likely to be identified as FP. The LIHC metric may further reduce the likelihood of tenants in energy efficient housing being identified as FP: if required ENEX is below the median, the LIHC metric will not identify the household as FP, however low a household's income. If official FP statistics are used to guide energy affordability support policies, households in genuine difficulties may be excluded from help.

8 Pg12, HM Government (2015). The 'Standard Assessment Procedure' places properties' energy performance on a scale of 1-100, with A-G categories within this scale. 'A' rated properties have higher energy efficiency than 'G' rated properties. Ratings are linked to modelled running costs based on standardised assumptions about occupancy and behaviour.

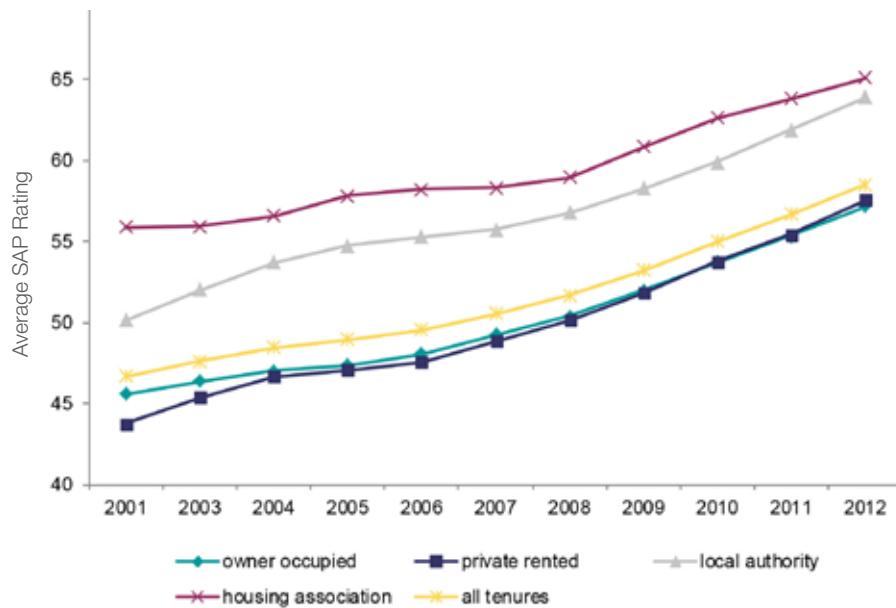
9 Paragraph 5, pg6, National Audit Office (2010)

10 See Swan et al (2017) and Abdel-Wahab et al (2011). In practice, a policy maximising FP reductions is likely to require interventions rather different to a policy seeking to maximise CO2 reductions.

11 See Middlemiss (2017)

Figure 2 Average energy efficiency (SAP) rating by tenure, 2001-2012

(Source: Department for Communities and Local Government)¹²



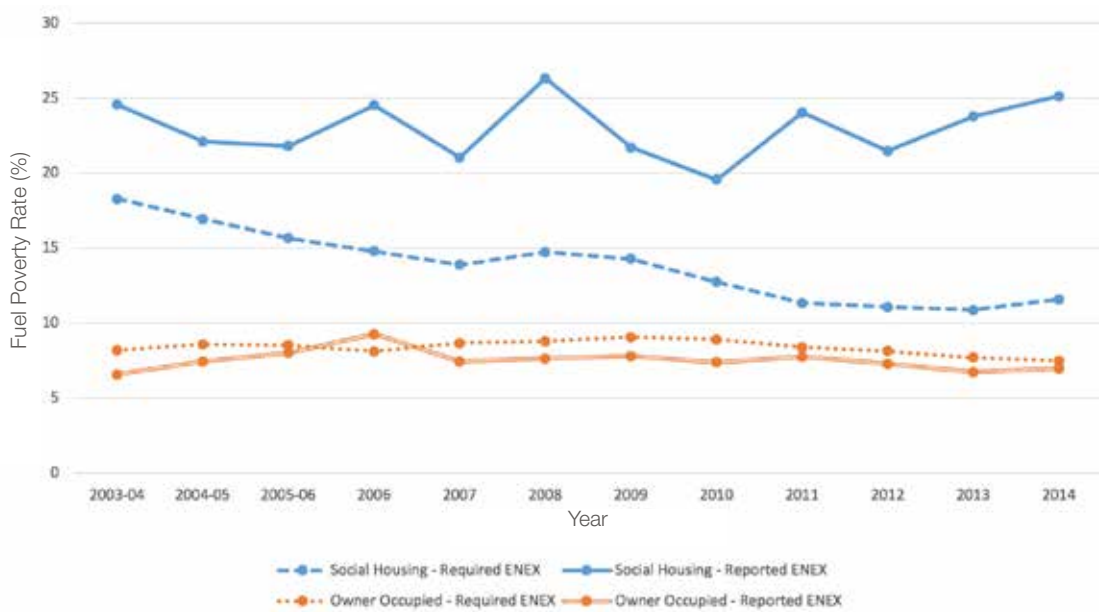
A further concern arises from any inaccuracies with the model which converts energy efficiency features into required ENEX. Figure 3 shows that our¹³ central estimate of LIHC FP using reported ENEX is substantially above the official required ENEX FP rate for social housing. That a large gap exists for social housing (but not for owner occupiers), and social housing has higher SAP ratings in Figure 2, potentially suggests the reduction in ENEX resulting from energy efficiency measures may have been over-estimated in the model generating the official FP statistics. Section 3.2 in Chapter 6 discusses how this issue could be definitively evaluated.

¹² Figure 1.1, DCLG (2014)

¹³ Deller and Waddams Price (2018b). A similar result is found when using the 10% metric. Details of our research papers' methodologies are provided in Appendix 1.

Figure 3 LIHC fuel poverty rates in England based on reported and required energy expenditures for social housing and owner occupiers, 2003-04 to 2014

(Data: Reported ENEX FP - Living Costs and Food Survey and precursors,¹⁴
Required ENEX FP – Department for Energy and Climate Change¹⁵)



Regarding the role of low incomes, our analysis¹⁶ of Living Costs and Food Survey data involving reported ENEX shows social housing tenants consistently have the highest energy expenditure shares (ENEXShr) of all tenure types between 1992 and 2005 (Figure 4), despite the efforts to improve the energy efficiency of the social housing stock. Figure 5 shows that since 2000-01 social housing tenants' median ENEX has been broadly in line with that of private renters. Together, Figures 4 and 5 indicate the higher ENEXShr of social housing is driven primarily by low income (total expenditure) rather than higher ENEX.

¹⁴ Deller and Waddams Price (2018b)

¹⁵ 'Trends in Fuel Poverty, England, 2003 to 2014', Department for Energy and Climate Change (DECC), <https://www.gov.uk/government/statistics/fuel-poverty-trends-2003-2014>

¹⁶ Deller and Waddams Price (2018a)

Figure 4 Median energy expenditure shares¹⁷ by household tenure, 1992-2014

(Data: Living Costs and Food Survey and precursors)¹⁸

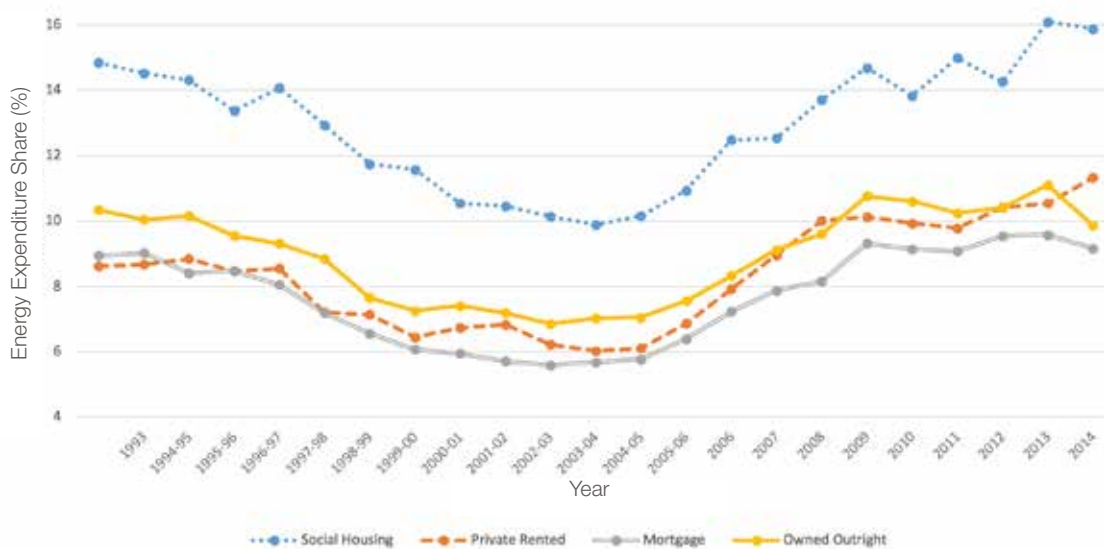
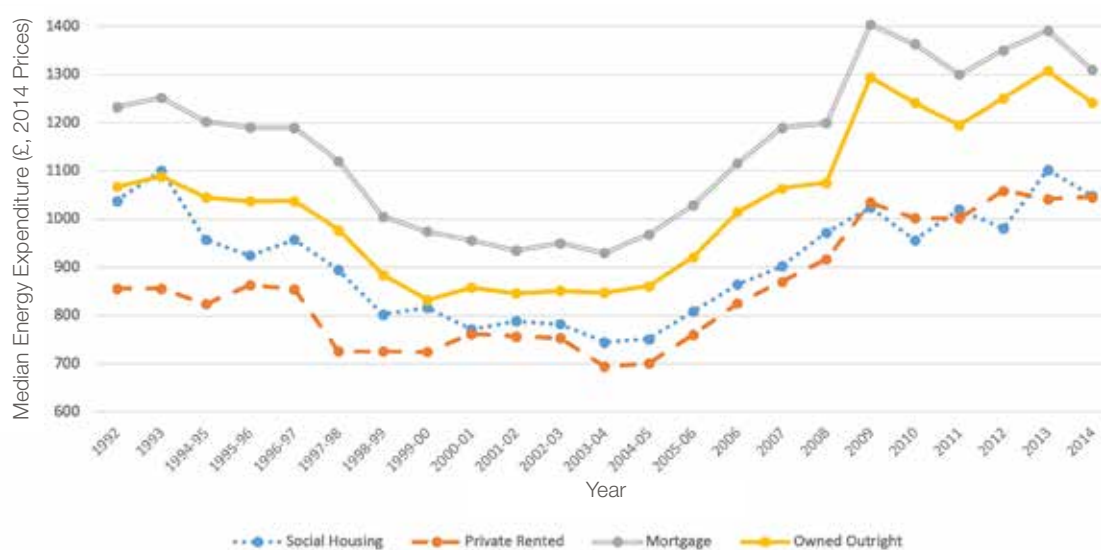


Figure 5 Median energy expenditures by household tenure, 1992-2014

(Data: Living Costs and Food Survey and precursors)¹⁹



17 Energy expenditure as a proportion of total household expenditure after the deduction of housing costs and equalisation.

18 Deller and Waddams Price (2018a)

19 Deller and Waddams Price (2018a). 2014 prices calculated using the Retail Price Index (RPI).

2.2 Some social housing tenants struggle to maintain warmth

Since some social housing tenants may be missed by official FP indicators, we²⁰ conducted in-depth interviews with a selection of tenants to explore the issues involved. Broadland Housing Association (BHA) in the East of England has a strategy of helping tenants to avoid FP by improving their housing stock through replacing boilers, installing insulation, and commissioning highly energy efficient new build properties. BHA calculates that their properties have an average SAP rating of 71.1, although they report that 29.9% of their tenants experience '10% FP'.

In twelve out of fifteen interviewed households²¹ tenants took steps to keep their ENEX as low as possible, such as through spatial and temporal 'rationing' of energy use (e.g. heating only one room, often for very short periods), by wrapping themselves in duvets or visiting others to warm up. Susan (Box 1) is a tenant who combines high ENEX with routines of limiting energy consumption. Box 2 shows that interviewees who were not rationing their energy use often faced other difficult choices such as limiting food expenditure. Our findings²² suggest some tenants are spending less than they would like to on energy while still facing a high ENEXShr.

Box 1 Susan - Coping with inefficient heating

Susan is a single parent and part-time child-minder who lives with her school-age daughter in a 'D' SAP rated home that is not connected to the gas grid. She uses storage heaters and, after experiencing high bills (around £40 per week) and getting into debt, she contacted Broadland Housing who helped her with budgeting and undertook an energy audit. After the audit, and having seen some advice from Martin Lewis, the 'Money Saving Expert', she switched supplier allowing her to have her Pre-Payment Meter removed for free and to move onto lower-rate quarterly bills. She still takes several measures to reduce her energy consumption to avoid high bills, such as only cooking in large batches and taking advantage of her Economy 7 tariff by only using her washing machine and dishwasher after midnight. She is waiting for a smart meter to be installed so she can know exactly what she is using.

3 The Persistence (or not) of Fuel Poverty within Households

A topic receiving limited attention to date is the time households remain in FP. If FP is primarily a dynamic phenomenon, it raises questions about whether energy efficiency retrofits, which permanently alter dwellings, are the most appropriate FP intervention.

²⁰ Hargreaves and Longhurst (2018)

²¹ Interviews focused on households likely to be at risk of FP.

²² Hargreaves and Longhurst (2018)

3.1 FP often appears to be a dynamic and changing phenomenon

The qualitative data illustrate the dynamic and changing nature of FP, often triggered by financial shocks such as becoming unemployed. One example is Michael (Box 2), whose unemployment was compounded by a loss of housing benefit, leading to a rapid accumulation of debt, including significant energy debt. Tenants in arrears with their housing payments often trigger intervention from the BHA tenant support team, which can lead to improvements in the tenant's situation through securing additional income, or the writing off of debt. However such forms of support (from grant-making trusts and energy suppliers) are discretionary and, it was reported, increasingly difficult to secure.

Box 2 Michael - Struggling with changing benefits, unemployment and childcare

Michael is an unemployed single father, who lives with his four children in a 1970s terraced house. He recently lost his housing benefit, seeing it cut from £400 to just £2. He now owes Broadland Housing £1,200 in rent arrears. He is a trained builder and used to work in a local factory, but is now finding it hard to get work, partly because he needs to take his children to and from school, which requires two buses. As a result, his debts and unpaid bills are increasing. He gets his gas bill quarterly and his debt has been put onto his electricity key, with his supplier taking £5-6 per week in repayments. He receives the Warm Home Discount and some credits from his supplier. He has had some loans from a friend and uses a food bank, but at this point does not cut back on his energy consumption.

The dynamics and duration of FP can also be explored using the British Household Panel Survey (BHPS)²³ which tracks individual households through time. Variability in FP status can be indicated by the 'exit probability', i.e. the probability that a household which is in FP in one year will no longer be in FP by the following year. Figure 6 charts exit probabilities for five alternative FP indicators, with income poverty²⁴ as a comparator.²⁵ Both the perception-based and ENEX-based FP indicators have exit probabilities noticeably higher than for income poverty; and for all three perception-based FP indicators in all years at least half of households who identified as FP in one year no longer did so by the following year.

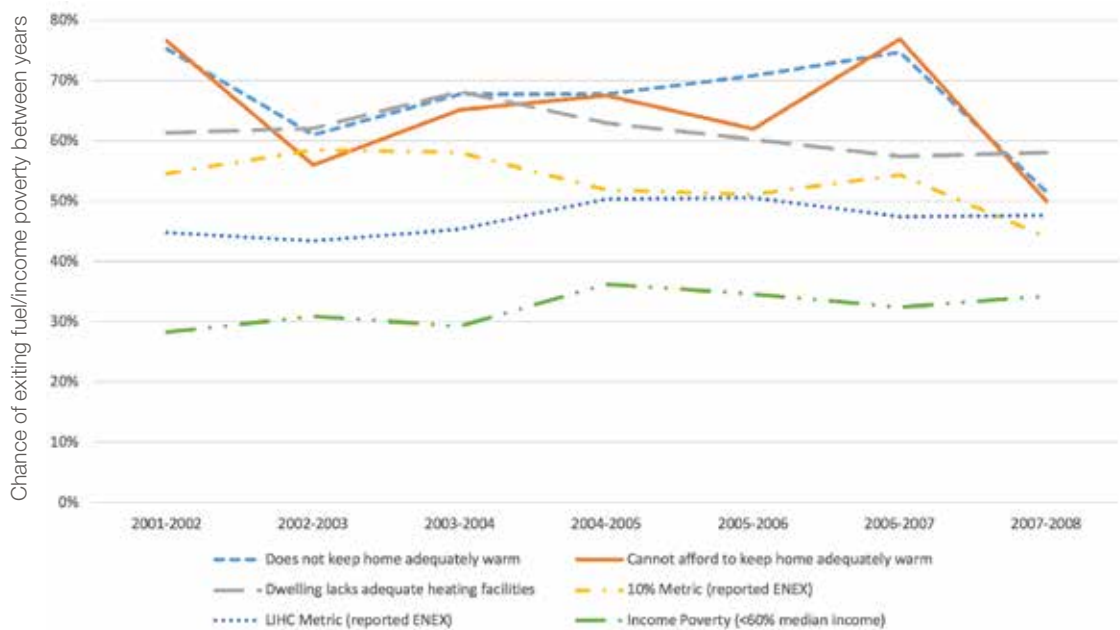
²³ Deller, Turner and Waddams Price (2019). Figure 6 and Figure 7 use data from the whole of the UK, including Northern Ireland.

²⁴ Defined as households where income is below 60% of the median.

²⁵ To be included in Figure 6, households only had to be present in two consecutive survey waves (years).

Figure 6 Chance of households exiting fuel/income poverty between year t and year t+1, 2001-02 to 2007-08

(Data: British Household Panel Survey)²⁶



Another way of illustrating the persistence of FP is through how often households²⁷ were identified as FP by the alternative indicators. Figure 7 shows that, for the perception-based indicators, just over 60% of those reporting FP at least once did so only once, and that over 80% reported it in only one or two years. The LIHC metric shows more persistence, likely because of its relative nature.

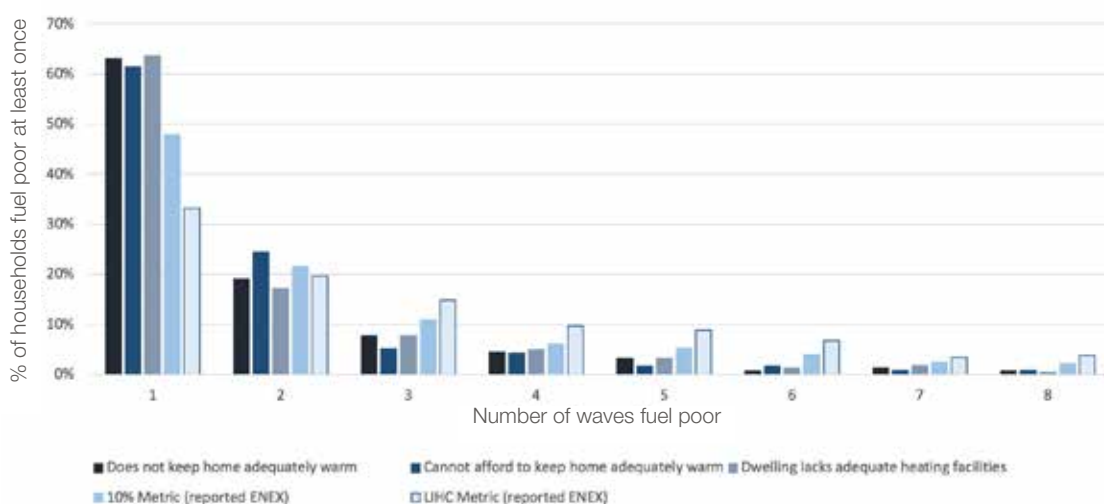
Equally, the BHPS analysis should be interpreted with some caution. First, the BHPS statistics cover a period of lower average ENEX than today. Second, especially in Figure 7, the results may be influenced by attrition, i.e. the poorest and least stable households, who are likely to be at particular risk of persistent FP, may be more likely to drop out of the sample. Third, we do not know what support (if any) households received while FP. Evidence from the quantitative and qualitative research potentially reveals the different forms that FP may take: dynamic or chronic.

²⁶ Deller, Turner and Waddams Price (2019). Figures 6 and 7 use unweighted data.

²⁷ This measure was restricted to those households present in all eight waves (years) of the BHPS data we analysed.

Figure 7 Number of periods households were identified as fuel poor (conditional on being fuel poor at least once and present in all survey waves 2001-02 to 2008-09)

(Data: British Household Panel Survey)²⁸



3.2 Some households struggle to afford warmth over the long-run

Our qualitative analysis²⁹ suggests longer term 'chronic' cases of FP are often driven by persistent low incomes, though technical factors can exacerbate the situation. Long-run energy affordability challenges were particularly apparent in single person unemployed households where the primary income was Employment Support or Job Seekers Allowance (£3,010 - £3,801 per year). Colin (Box 3) used ongoing efforts to restrict energy consumption and multiple ways of coping, despite living in a modern property with high SAP ratings and access to mains gas.

Box 3 Colin - Rationing energy use

Colin is an unemployed single man with an income of £73 per week through Employment Support Allowance. He lives in an efficient, 'B' rated home, but, despite this, to cope with his low income, he takes significant measures to limit his energy use. For example, wearing extra clothes, having baths or visiting friends to keep warm, relying on light from the TV rather than using room lights, heating water for just 30 minutes each day and microwaving food rather than using his gas cooker. He pays for energy using a Pre-Payment Meter which, although more expensive, allows him to control his expenditure. He has little knowledge of how to switch provider and limited IT skills, but also feels loyal to his provider as they have given him some small rebates in the past. Broadland Housing are trying to help him by seeking the Warm Homes Discount and boosting his employability skills.

²⁸ Deller, Turner and Waddams Price (2019)

²⁹ Hargreaves and Longhurst (2018)

Susan's experience (Box 1, p66) shows the influence of technological issues. Also, Susan's energy costs were increased by use of a pre-payment meter (PPM). These factors, combined with home working, led Susan to spend around £40 per week on energy, despite her attempts to limit consumption.

As well as distinguishing between dynamic and chronic FP, the qualitative data also suggest a distinction between controlled and uncontrolled situations. In many cases of persistent FP households have patterns of consumption and ways of coping that are relatively stable and manageable, albeit involving less energy usage than the household would ideally choose.

In contrast, uncontrolled cases, such as Michael (Box 2, p67), reflect situations where current ENEX is unaffordable, leading to a build-up of energy related debt, which often occurs as a household experiences a generally deteriorating financial situation. The burden of debt repayments eating into households' disposable income is not reflected directly in FP statistics. Difficulties may be exacerbated by the method for recovering energy debt. Many struggling households have PPMs, where a proportion of any amount they 'top-up' goes to repaying their debt rather than purchasing new energy. These 'forced' debt repayments, while limiting the bad debt costs falling on other energy consumers, raise the effective price of energy within a home. A household's willingness to top up a PPM may be further reduced by a lack of clarity around how much of their top-up is used to pay off debt. If users do not know how much will be taken for debt when they top-up, they may choose to spend their limited funds elsewhere.

4 Conclusion

FP alleviation is currently heavily focused on improving the energy efficiency of the housing stock. While such an approach may help with climate change commitments, we present evidence suggesting that other approaches need consideration to improve the welfare of those who struggle with energy affordability. Both quantitative and qualitative evidence suggests that low incomes are often fundamental to households' energy affordability challenges and, while energy efficiency improvements should help, retrofits' ability to offset the consequences of low incomes is likely limited. Social housing presents an example where households may still struggle, despite relatively high levels of energy efficiency. This supports a case for going 'back to basics' when assessing energy affordability challenges. A more effective approach than a single measure of FP, would be measuring the extent of directly observable real-world phenomena experienced by households that raise concern. The case for intervention to resolve each issue can then be evaluated. Ofgem's³⁰ more nuanced regulatory understanding of consumers in vulnerable situations is welcome support for this approach.

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Chapter 6

Improving Data and Measurement to Optimise Decision Making

Key Points

Average energy expenditures of households with prepayment meters are under-estimated by a large margin if a significant measurement issue in the Living Costs and Food Survey (LCF) and its precursors is left uncorrected. This may affect previous analysis which has used LCF data

After applying a correction, central estimates of fuel poverty rates based on reported energy expenditures exceed official fuel poverty rates based on required (modelled) energy expenditure in some years

A definitive comparison of required and reported energy expenditures requires questions about the latter in the English Housing Survey

There is limited overlap between fuel poverty indicators based on energy expenditures (10% and LIHC metrics) and households' perceptions of unaffordable warmth

In-home temperature measurements seem necessary to form definitive explanations for the lack of overlap

Policymaking would be better informed if anonymised raw data from surveys commissioned by economic regulators were publicly shared by default

1 Introduction

The data available to policymakers provide them with a picture of the world and identifies potential issues in the retail energy market. High quality data provide policymakers with a better understanding of the world, which should lead to more informed policies and better outcomes for consumers. The converse is also true: poor quality, or misunderstood, data risk policy errors and detrimental outcomes for consumers. Here some key data issues encountered during our research are explored. This chapter contains three sections focussed on: (i) household energy expenditures (ENEX), related to Chapter 2; (ii) alternative fuel poverty (FP¹) indicators, related to Chapter 5; and (iii) the use of market monitoring surveys, which is particularly relevant to Chapter 4.

The most significant issue identified is that the main source for household ENEX, the Living Costs and Food Survey (LCF) and its precursors, contains a serious measurement issue from the early-1990s until 2013. Data appear to be missing for a significant proportion of households with prepayment meters (PPMs). Correcting for this issue substantially increases average ENEX among PPM households, a group disproportionately on low incomes. Estimates of some earlier studies (which used the uncorrected data) regarding the distribution of ENEX, energy consumption and emissions across households may be affected by this data issue.²

The FP rate based on reported³ ENEX, after applying our PPM correction, is compared with the official FP rate based on 'required' ENEX. Which type of ENEX yields the higher FP rate varies through time, so reported ENEX does not always result in lower FP rates than required ENEX. The methodology for calculating required ENEX suggests a more neutral label is modelled ENEX. Using a different dataset, we further show that only a small percentage of households identified as FP using 'official' ENEX indicators self-report an inability to afford adequate warmth. This raises fundamental questions about the phenomena identified by alternative FP indicators; explaining the lack of overlap likely requires survey data to be combined with data on in-home energy use, in this instance achieved temperatures and temperature preferences.

Our third set of insights result from analysing Ofgem's micro and small business (MSB) surveys. UK economic regulators would maximise the insights from costly surveys by having a starting presumption of sharing anonymised survey data, so that external bodies can perform additional analysis and form independent conclusions. This would be particularly valuable if resource constraints limit further analysis by the regulator. If sharing is impossible, a detailed explanation should be made public.

2 Pre-Payment Meters, Missing Data and Energy Expenditures

There are three main methods to pay for electricity and gas in the UK: by Direct Debit, in arrears (Standard Credit) or by PPM. PPMs have traditionally been installed in rental properties and have increasingly been used to manage debt, so they are located disproportionately in low income households. Unlike direct debit and arrears, until 2013 PPM gas and electricity expenditures were recorded in the LCF using a two-week expenditure diary where households recorded expenditures as they occurred.

¹ We also use FP to denote 'fuel poor'.

² For example, Druckman and Jackson (2008) and Buchs and Schnepf (2013).

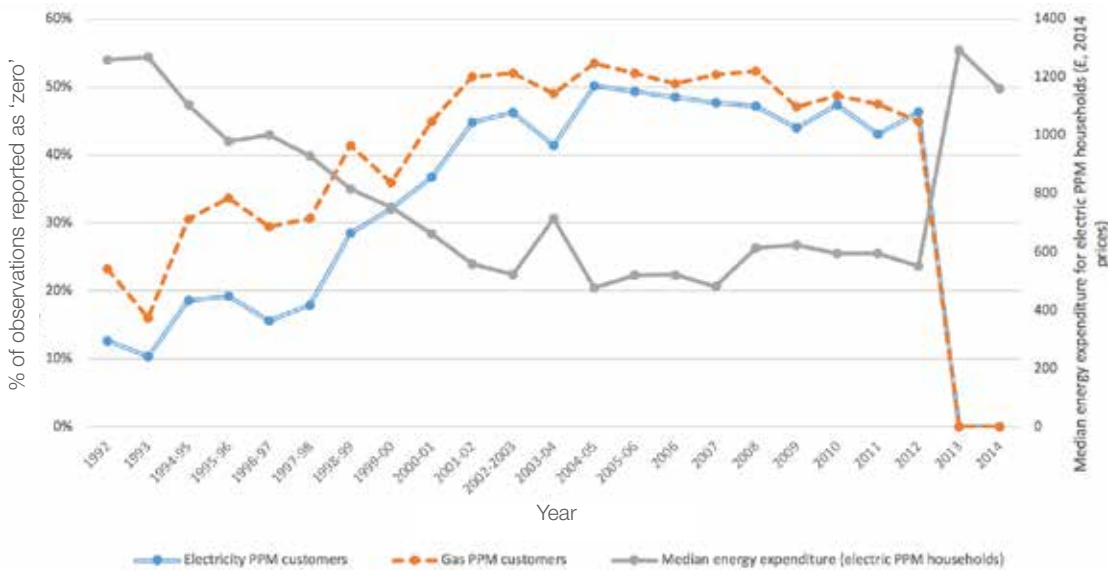
³ Reported ENEX is the ENEX reported by households in surveys.

2.1 Many PPM users' ENEX data appear to be missing

In the PPM ENEX data the proportion of households reporting zero expenditure on electricity and/or gas increased throughout the 1990s⁴ until around 50% of gas PPM customers were reporting zero gas expenditure in the first decade of the 2000s (Figure 1). Figure 1 also shows that as the proportion of PPM customers reporting zero increased, the median ENEX of PPM customers fell. Why the frequency of zeros increased during the 1990s is unclear.

Figure 1 Percentage of PPM customers with zero electricity/ gas expenditure plotted against median ENEX for electricity PPM customers

(Data: Living Costs and Food Survey and precursors)⁵



Advani et al (2013) and Buchs and Schnepf (2013) note that one possible reason for the zero expenditures is infrequency of purchase, i.e. households top up their PPM less frequently than once every two weeks. In this interpretation mean (average) ENEX from the expenditure diary would still be broadly accurate of 'true' average ENEX.⁶

4 See Figure A.3, pg 89, Advani et al (2013) for the rates of 'zero' PPM expenditures prior to 1992.
 5 Deller and Waddams Price (2018a). Details of our research papers' methodologies are provided in Appendix 1.
 6 Here the zeros would be offset by larger positive ENEX observations covering more than two weeks for those households that did top-up during the two-week diary window.

However, we believe,⁷ the zero observations are more appropriately treated as missing data. Consequently, apparent observations of zero ENEX for PPM households need to be replaced with an ENEX estimate if average ENEX and the ENEX distribution are to be accurate. Equally, we acknowledge, a small proportion of households' top-ups may have lasted for longer weeks and some of the zeros in the two-week expenditure diaries are real.⁸ As a result, our ENEX, ENEXShr and FP figures in years prior to 2013 are technically upper bounds.

The decision to impute PPM ENEX is based on a range of evidence. Most importantly, the drop in the number of 'zero' observations in 2013 coincides with a change in the survey question for PPM customers. From 2013 households were asked the amount of their last top up and the period it would normally last. Figure 1 highlights how this change caused observations of zero ENEX to disappear and at the same time median ENEX for PPM households more than doubled. Since this dramatic increase in median ENEX only occurs for PPM households, we conclude the question change was responsible.

Other evidence also supports treating the zeros as missing; in particular: (i) two surveys⁹ report a clear majority of PPM households top up weekly, so infrequency of purchase seems an unlikely explanation; and (ii) PPM prices did not increase significantly between 2012 and 2013¹⁰, so prices do not explain the sudden jump in PPM ENEX recorded by the LCF. Moreover, since the LCF sets expenditure to zero unless a respondent records positive expenditure, zeros can easily mask missing data.

2.2 Correcting for PPM users' missing data

To correct for the zero expenditures, ordinary least squares regressions¹¹ were performed based on data from the PPM households who reported positive expenditures for electricity(gas). These regressions produced a model that, when combined with the characteristics of PPM households reporting zero electricity(gas) expenditure, could estimate the annual electricity(gas) expenditure for each PPM household with missing data. The correction's impact is shown in Figure 2. If the correction is not applied, average ENEX for PPM households and, therefore, low income households is substantially lower. Applying the correction means the time trend for PPM households' ENEX becomes closer to that for the Direct Debit and Standard Credit payment methods.

7 Deller and Waddams Price (2018a)

8 For example, in summer months, due to limited heating requirements, a top up on a gas PPM might last more than two weeks. However, evidence presented in Deller and Waddams Price (2018a) suggests this is only true for a small proportion of the observations.

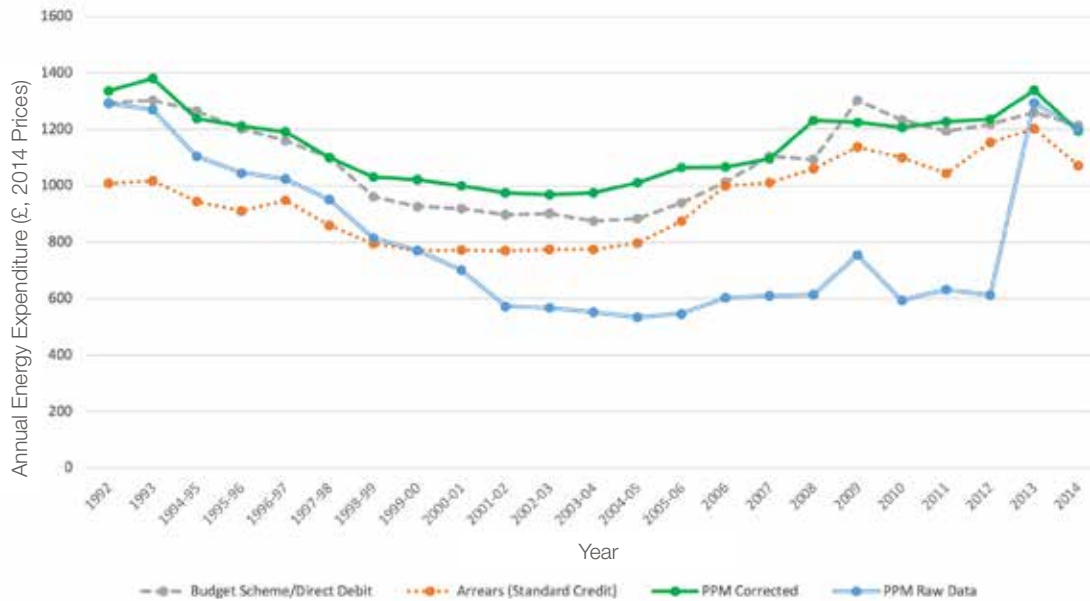
9 Waddams et al (2001) and Mummery and Reilly (2010).

10 Table 2.2.1 and Table 2.3.1, Statistical data set: Annual domestic energy bills, Department of Business, Energy and Industrial Strategy, available at: <https://www.gov.uk/government/statistical-data-sets/annual-domestic-energy-price-statistics>

11 Deller and Waddams Price (2018a) provide further methodological detail.

Figure 2 Median annual energy expenditure by electricity payment method (PPM corrected and uncorrected)

(Data: Living Costs and Food Survey and precursors)¹²



3 Alternative Fuel Poverty Metrics

Our quantitative analysis of FP uses two datasets. First, the corrected LCF data outlined above are used to produce FP rates based on reported ENEX to compare with official FP statistics using ‘required’ ENEX¹³ in England. Second, the British Household Panel Survey (BHPS) is used to compare FP indicators recording householders’ perceptions of in-home warmth with indicators based on reported ENEX¹⁴ across the UK.

Both analyses consider two expenditure-based FP indicators which have constituted the official English FP indicators.¹⁵ The 10% indicator identifies a household as FP if ENEX exceeds 10% of household income. The Low Income-High Cost (LIHC) indicator identifies a household as FP if ENEX lies above median ENEX and household income, after the deduction of ENEX, lies below 60% of median income. Further detail on these indicators is provided in section 1.1 of Chapter 5.

3.1 Reported ENEX can give higher FP rates than required ENEX

Official FP statistics are based on ‘required’ ENEX, i.e. the estimated ENEX required to maintain a specified temperature within a dwelling. Much of the FP literature¹⁶ assumes that FP statistics using

¹² Deller and Waddams Price (2018a)

¹³ Deller and Waddams Price (2018b)

¹⁴ Deller, Turner and Waddams Price (2019)

¹⁵ Although the official indicators are based on required ENEX.

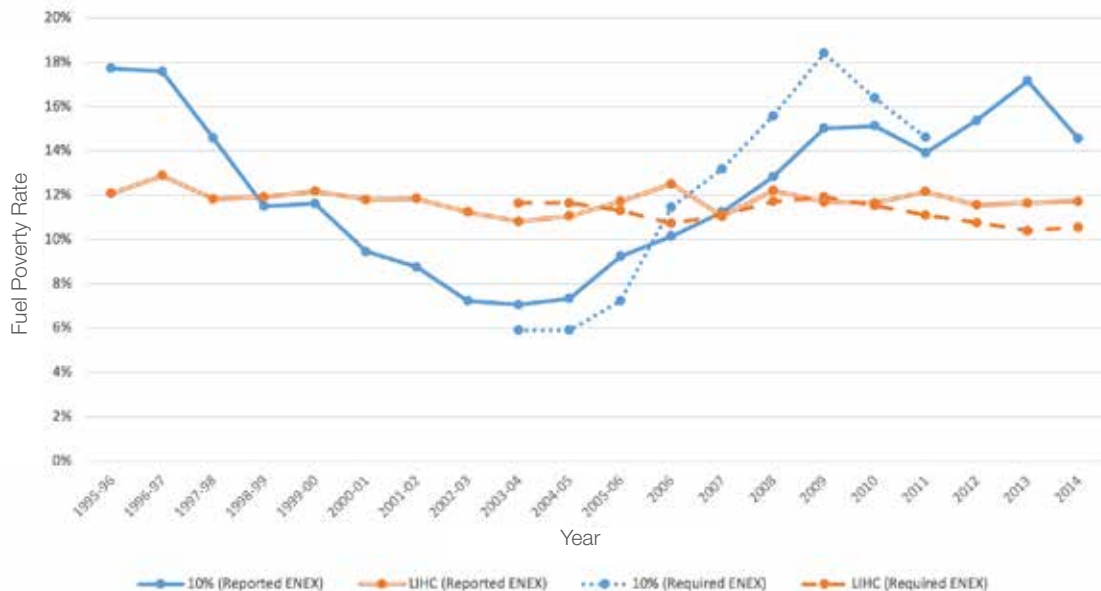
¹⁶ For example, Liddell et al (2012) and Thomson et al (2017).

reported ENEX under-report FP because households facing affordability pressures limit their ENEX by 'cutting back' on their energy use, e.g. reducing heating, not using lights and batch cooking etc. (see boxes 1 and 3 in Chapter 5). However, using the corrected LCF data, Figure 3 shows that the central estimate of the FP rate based on reported ENEX is sometimes higher than that based on required ENEX. Some earlier analysis which concluded reported ENEX under-reported FP relative to required ENEX was likely affected by the PPM measurement issue which reduced apparent expenditure for many low income households.¹⁷ The estimated 10% FP rate based on reported ENEX exceeds the rate based on required ENEX when energy prices were low, but the reported ENEX FP rate is below the required ENEX FP rate when energy prices were higher. This changing relationship probably reflects a constant energy consumption being assumed under required ENEX, while reported ENEX reflects reductions in households' energy consumption when prices increase.

Figure 3 also illustrates the relatively constant rate over twenty years of LIHC FP calculated from reported ENEX. This limited fluctuation illustrates that the headline LIHC FP rate is not particularly useful as an indicator of changing energy affordability pressures through time, i.e. it does not respond to energy price fluctuations. This lack of response is inherent in defining LIHC FP relative to the position of average households.

Figure 3 Estimates of English fuel poverty rates using reported and 'required' energy expenditures, 1995-96 to 2014

(Data: Reported ENEX FP – Living Cost and Food Survey and precursors¹⁸, Required ENEX FP – Department for Energy and Climate Change¹⁹)



¹⁷ In particular, Hirsch et al (2011) and DECC (2014). DECC (2015), using data from 2013 (i.e. unaffected by the measurement issue), shows little evidence of under-reporting (relative to required ENEX).

¹⁸ Deller and Waddams Price (2018b)

¹⁹ 10% metric: Trends in Fuel Poverty, England, 2003-2011, 10% Definition, Department for Energy and Climate Change (DECC), <https://www.gov.uk/government/statistics/trends-in-fuel-poverty-england-2003-to-2011> (last accessed 13.08.18); LIHC metric: Trends in Fuel Poverty, England, 2003 to 2014, Department for Energy and Climate Change (DECC), <https://www.gov.uk/government/statistics/fuel-poverty-trends-2003-2014> (last accessed 13.08.18).

3.2 The English Housing Survey should record reported ENEX

Figure 3 considers the aggregate FP rate, the relationship between reported and required ENEX FP rates for specific subgroups of households varies by the characteristics (e.g. age, tenure) used to segment households. A potentially notable finding is that the reported ENEX FP rate for those in social housing is noticeably above the required ENEX FP rate for all years considered (see Figure 3 in Chapter 5).²⁰ Since social housing dwellings have the highest average energy efficiency ratings (see Figure 2 in Chapter 5), this specific result could indicate the model used to calculate required ENEX over-estimates the ability of energy efficiency interventions to limit ENEX.

The more general mixed relationship between reported and required ENEX FP rates when households are disaggregated could be consistent with the random errors associated with any modelling process. FP statistics may be particularly prone to influence by modelling errors as they focus on the upper tail of the ENEX distribution rather than average ENEX. In addition to modelling how building characteristics map into energy consumption, required ENEX involves assumptions (of varying importance) regarding: (i) the temperature targeted, i.e. individuals' preferences are not considered; (ii) the pattern of heating, occupancy and energy consumption through time; and (iii) the price of energy. For these reasons we believe the term 'modelled ENEX' is more transparent than 'required ENEX'.

Nevertheless, a limitation of the above comparisons should be noted: the reported and required ENEX figures are from different surveys,²¹ so it has not been possible to compare reported and required ENEX for individual households. Since the results raise questions about the required ENEX methodology it would be valuable to obtain data enabling definitive comparisons. To enable such comparisons, we encourage the addition of appropriate questions to elicit reported ENEX and energy consumption to the English Housing Survey,²² the survey used to produce the official required ENEX FP statistics.

3.3 Perception-based and ENEX-based FP indicators show limited overlap

The analysis in sections 3.1 and 3.2 presumes that the 10% and LIHC metrics have clear meanings in terms of households' real-world experiences. BHPS data record self-reported assessments of heating adequacy and enables a comparison between these perception-based FP indicators and the 10% and LIHC FP indicators at the individual household level. The very limited overlap between the different indicators raises fundamental questions about what the indicators identify and how best to operationalise the concept of FP. In this sub-section all 10% and LIHC FP figures are based on reported ENEX.

The BHPS data offer three FP-relevant perception-based indicators:

- 1 Inability to keep home adequately warm;
- 2 Inability to afford to keep home adequately warm;²³
- 3 Accommodation lacks adequate heating facilities.

Indicator 2 seems most closely aligned to traditional notions of FP measurement.

²⁰ Reported ENEX FP exceeds required ENEX FP in 2013 and 2014 as well as earlier years, hence the relationship is not just the result of the PPM correction leading to ENEX prior to 2013 being 'upper bounds'.

²¹ The differences in Figure 3 could be influenced by methodological differences between the surveys.

²² Moore (2012) has previously advocated this.

²³ Households were only asked whether they could not afford adequate warmth after answering that they were unable to keep their home adequately warm; this may influence Figures 4-7.

Figure 4 reports the percentage of households identified by each FP indicator in the unweighted BHPS data.²⁴ Figure 4 is not intended to provide accurate estimates of FP rates for the UK population as a whole, rather it illustrates what drives the lack of overlap between the different indicators shown in Figures 5-7. The higher rate of LIHC FP in Figure 4 compared with Figure 3 results from the BHPS over-sampling households in the devolved administrations, areas where households tend to have higher ENEXShr than in England.

Figure 4 Unweighted rates of alternative fuel poverty indicators in our analysed BHPS sample covering the whole of the UK, 2001-02 to 2008-09

(Source: British Household Panel Survey)²⁵

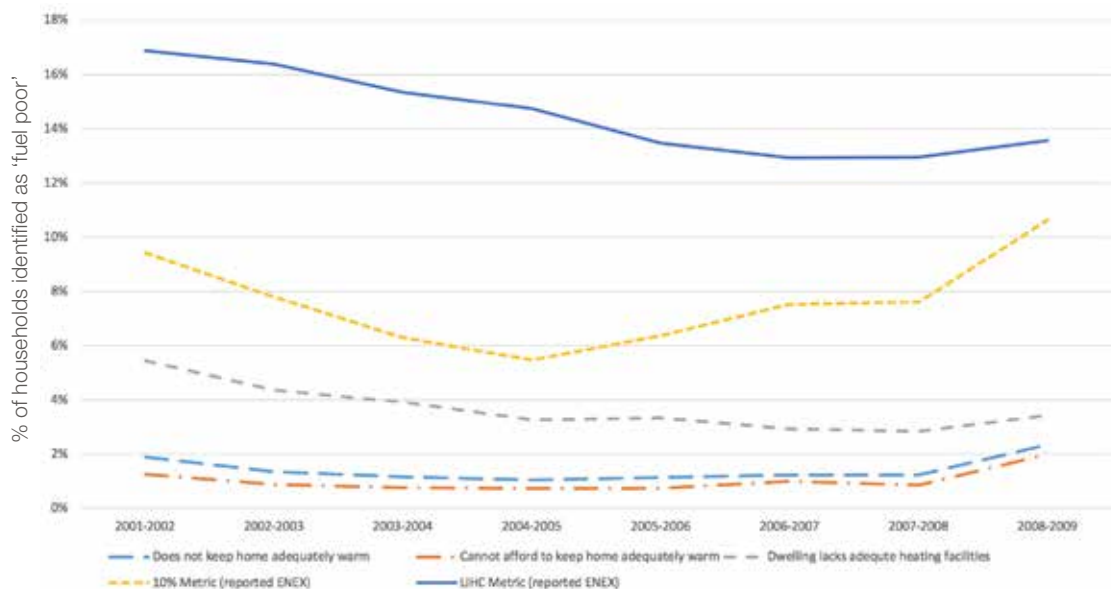


Figure 4 shows striking differences in the proportion of analysed households identified as FP by each of the ENEX-based and perception-based indicators. Across the period, the highest proportion of households reporting an inability to afford adequate warmth is 2.0%, compared to a peak of 10.6% for 10% FP and 16.9% for LIHC FP. That so few households report an inability to afford adequate warmth raises questions about the phenomenon being identified by the 10% and LIHC metrics.

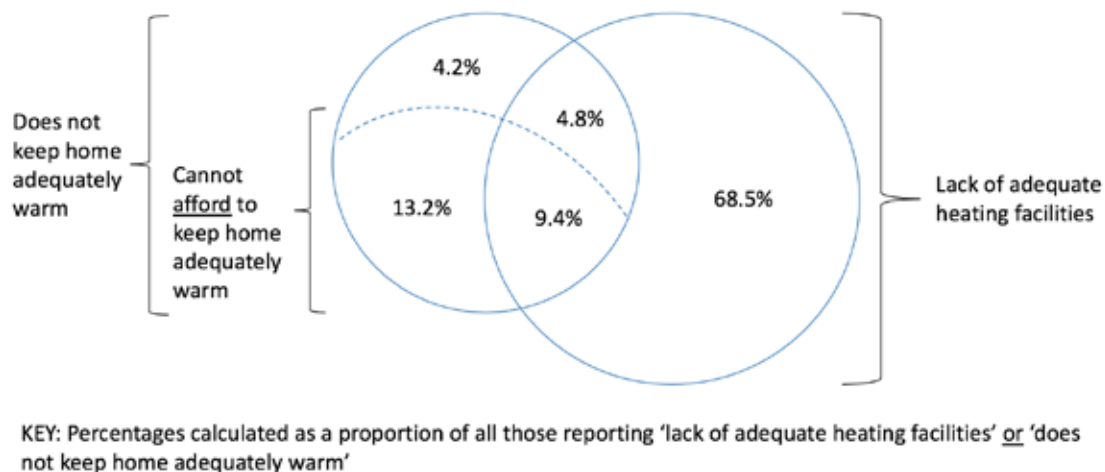
²⁴ Figures 4-7 use an unbalanced panel, i.e. households were interviewed in multiple years, but may not have been interviewed in all years. The time trends in Figures 4, 6 and 7 may be influenced by attrition, i.e. households dropping out of the sample.

²⁵ Deller, Turner and Waddams Price (2019)

The differences between the three perception-based FP rates should also be noted, as they show the effect of wording on the prevalence of FP suggested by perception-based indicators. The differences also illustrate how householders perceive access to heat. Combining data across 2001-02 to 2008-09, Figure 5 shows 68.5% of those reporting either a lack of adequate heating facilities or an inability to keep their home warm only reported a lack of adequate heating facilities; in other words, most households reporting inadequate heating facilities thought they were able to keep adequately warm. Also, of those reporting an inability to keep their home adequately warm, 28.4% indicated that this was for reasons other than affordability.

Figure 5 A Venn diagram of the three perception-based fuel poverty indicators considered in Deller, Turner and Waddams Price (2019), combining data from 2001-02 to 2008-09

(Source: British Household Panel Survey)²⁶



Figures 6 and 7 provide further detail on the overlap between the ENEX-based and perception-based indicators. Figure 6 reports the percentage of households identified as 10% or LIHC FP who report each of the perception-based indicators. The extent of overlap with the ENEX-based metrics is remarkably low: in all years, over 90% of households judged as FP according to the 10% and LIHC indicators do not self-identify as suffering inadequate warmth.

Figure 7 shows the percentage of households reporting each perception-based FP indicator who are also identified as 10% or LIHC FP. Compared to Figure 6, a noticeably higher proportion of perception-based FP households are identified as ENEX FP, although, in all cases, still only a minority of perception-based FP households are also identified as ENEX FP. With the exception of 2001-02, at least 60% of those reporting an inability to afford to adequate warmth are not identified as FP by the 10% or LIHC indicators.

Figure 6 Percentage of 10%/LHC fuel poor households reporting perception-based fuel poverty indicators,²⁷ 2001-02 to 2008-09

(Source: British Household Panel Survey)²⁸

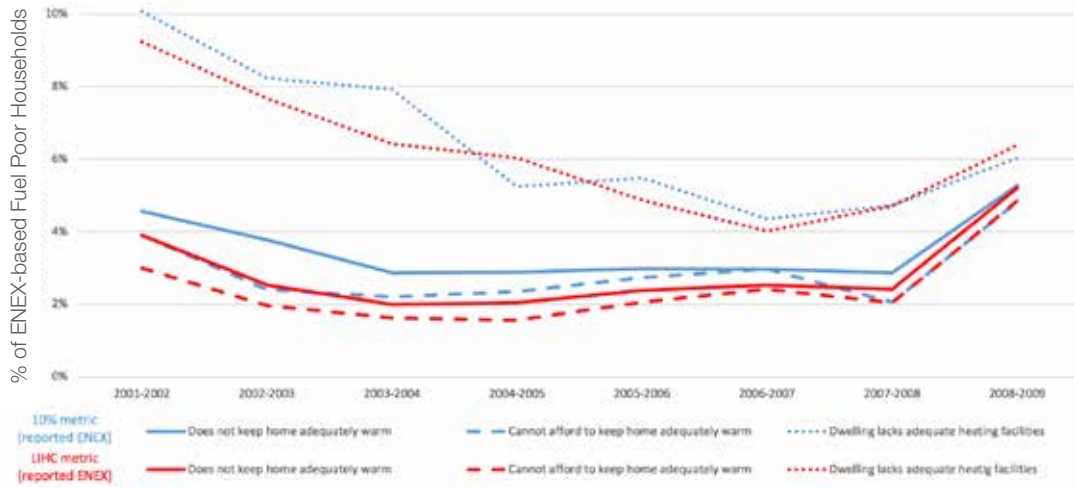
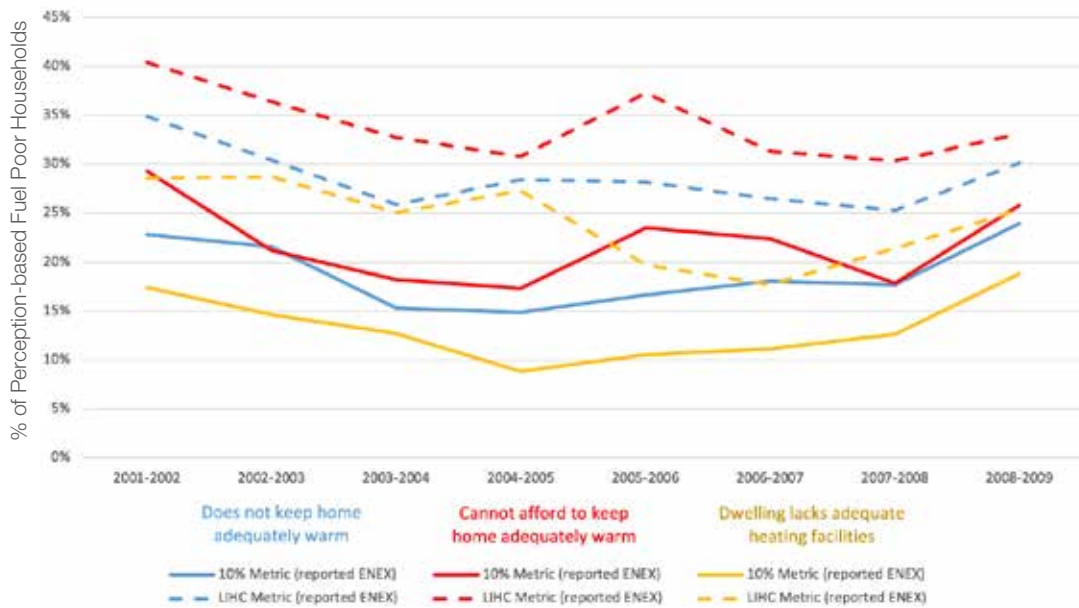


Figure 7 Percentage of perception-based fuel poor households identified as 10% / LHC fuel poor,²⁹ 2001-02 to 2008-09

(Source: British Household Panel Survey)³⁰



27 For example, the solid blue line represents the percentage of households in 10% FP that report that they cannot keep their home adequately warm.

28 Deller, Turner and Waddams Price (2019)

29 For example, the solid red line indicates the percentage of households reporting that they cannot afford adequate warmth who were identified as being in 10% FP.

30 Deller, Turner and Waddams Price (2019)

Furthermore, regression results³¹ indicate that different types of households are associated with each FP indicator. In particular, there are notable differences in the associations between older households and the alternative FP indicators. Compared to a household headed by someone under 65 (and after controlling for a large range of other factors), a household with a head aged 75 or over is more likely to be LIHC FP, just as likely to be 10% FP and, in some specifications, less likely to report an inability to afford adequate warmth.

3.4 Recording temperature preferences and in-home temperatures seems key

Since the FP results above use reported ENEX, the results might suggest the ENEX-based and perception-based indicators pick up different aspects of FP. The ENEX-based indicators could be identifying households who achieve adequate heat but at the cost of reduced consumption of other goods, while households reporting an inability to afford adequate warmth could be identifying households restricting their energy consumption below a ‘healthy’ level to afford other essential products. However, this interpretation relies on several assumptions.

A central problem is that we know neither the temperatures achieved by households nor their temperature preferences, in particular we do not know whether ENEX FP households achieve higher in-home temperatures than those reporting an inability to afford adequate warmth. Perhaps those reporting an inability to afford adequate warmth consider a higher temperature as ‘adequate’ than other households? Alternatively, if expectations of in-home warmth have increased in recent decades, perhaps some older individuals view lower temperatures as ‘adequate’? Psychological factors affecting whether a household views a given set of physical circumstances positively or negatively, and the willingness of respondents to report negative experiences, will also influence perception-based FP indicators.

Information about in-home temperatures and householders’ temperature preferences would help to illuminate: (i) the relationship between different FP indicators, and (ii) the policy interventions offering the greatest welfare improvements. Without temperature information, recommendations about particular FP indicators being more appropriate than others require significant assumptions. Equally, we recognise that in-home temperature recordings face their own methodological challenges.

Smart thermostats³² may present a new opportunity to obtain temperature data at a large scale, and could provide both frequent temperature recordings and information on the temperatures which households are seeking to obtain. Moreover, some smart thermostats are specifically targeted at social housing providers,³³ whose tenants likely have a high risk of energy affordability challenges. However, smart thermostats do not offer a panacea for research: some households (e.g. private renters) may be unlikely to receive one and smart thermostats themselves are designed to lower the cost of achieving a given temperature.

31 Deller, Turner and Waddams Price (2019)

32 These are different to smart meters.

33 For example, see Switchchee, <http://switchchee.co/> (last accessed 13.08.18)

4 Maximising Insights from Data

This chapter has illustrated the benefits of revisiting data sets which have been collected for another purpose; secondary data analysis provides important insights into both potential data problems and the detail of fairness and affordability regarding energy consumption. A clear expectation of sharing survey data can influence research agendas and stimulate analysis providing further information to improve regulatory policy and delivery. One underused source of data has been the surveys regularly commissioned by Ofgem³⁴ and other economic regulators, which each represent a significant investment of time and public money. Making these surveys routinely available would: (i) enable groups with different perspectives to contribute to analysis and knowledge; (ii) harness the time and skills of external groups to conduct in-depth analysis; (iii) increase the transparency of the evidence supporting regulation; and (iv) identify potential data collection improvements.

An example of this potential is shown by our research³⁵ suggesting additional questions for Ofgem's MSB survey in Chapter 4. Analysis of the MSB survey data could have yielded richer results if the energy supplier indicator had not been redacted, and more research to inform regulators' policy making could be available if the need to seek special permission to access this type of data can be avoided. We note that Ofcom places the raw data from an equivalent survey covering the communications sector on its website with no apparent restrictions³⁶ and we welcome Ofgem's data services and supplier hub projects. To harness external contributions to regulatory knowledge, we suggest that economic regulators adopt a default presumption, similar to the requirements placed on researchers funded by the Economic and Social Research Council (ESRC), to share data, where possible, via the UK Data Archive. The following procedures would facilitate such a policy:

- 1 All survey datasets commissioned by economic regulators are publicly listed and a brief description provided (metadata);
- 2 Suitably anonymised raw data are shared whenever possible;
- 3 Where data cannot be shared, a detailed explanation of reasons for the inability to share is provided.

This procedure would provide transparency about the survey evidence commissioned by regulators, and the non-sharing of publicly funded data would be justified to external parties. While greater openness with data may increase challenge in some areas of regulation, we hope that such a challenge would exert a positive influence on the quality of regulation. An open data policy could also increase the transparency and legitimacy of the regulatory process.

5. Conclusion

This chapter has explored a range of data and measurement issues identified in our research regarding the available evidence on fairness in the retail energy market. While this chapter and Chapter 4 highlight the potential gains from additional data collection, all the quantitative evidence documented in this report is based on analysis of pre-existing datasets. Significant insights can be obtained from returning to old datasets and thinking creatively about whether they can answer questions not envisaged by their designers. This experience drives our conclusion that open data-sharing should enable more informed decision making.

³⁴ For example, since 2012 Ofgem has commissioned at least five surveys covering MSB engagement.

³⁵ Deller and Fletcher (2018).

³⁶ 'SME Consumer Experience Research 2016 Raw Data' available at: <https://www.ofcom.org.uk/research-and-data/multi-sector-research/general-communications/sme-research> (last accessed 13.08.18)

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Appendix 1

Methodological Appendix

The chapters in this report are based on a series of (single discipline) research projects within the UKERC project 'Equity and Justice in Energy Markets'. Each project has generated at least one research paper which provides the underlying evidence. Here we summarise the methodologies used in the academic papers.

Deller, D. and C. Waddams Price, 2018a. Energy Affordability in the UK: Corrected Energy Expenditure Shares 1992-2014, Centre for Competition Policy, University of East Anglia, CCP Working Paper 18-8

This paper uses data from the Living Costs and Food Survey and its precursors, from 1992 to 2014, with additional observations in 1977, 1982 and 1987. The data cover the UK and involve a sample of 4,900-7,500 households per annum. A significant missing data issue is identified for households using pre-payment meters (PPM) from the early-1990s to 2012. This issue is addressed by: (i) running ordinary least square (OLS) regressions with electricity(gas) expenditure as the dependent variable on PPM households with non-missing data, and (ii) using the resulting models to estimate electricity(gas) expenditure for PPM households with missing data. Separate regressions are run for each fuel in each year. Additionally, energy expenditures (ENEX) for all payment methods are de-seasonalised with the seasonality factors produced by log-linear OLS regressions, where ENEX is the dependent variable and there is a wide range of explanatory variables including interview month. Separate de-seasonalisation regressions are run for each payment method and fuel in each year.

ENEX are defined as all expenditure by a household on fuel, light and power within the home; expenditures on transport fuels are excluded. Annual ENEX are converted to 2014 prices using the Retail Price Index (RPI). Energy expenditure shares are defined as ENEX divided by total household expenditure after housing costs are deducted, and total expenditure is equivalised for the number of household members using the modified OECD scale. The results are weighted to address potential sampling issues. Prior to 2001-02 when official weights are first provided, weights are calculated using census data identifying a household's region/devolved administration together with a household head's age and gender.

Deller, D. and C. Waddams Price, 2018b. Comparing English Fuel Poverty Rates: Reported vs Modelled Expenditure, Centre for Competition Policy, University of East Anglia, CCP Working Paper 18-11

This paper compares the official fuel poverty (FP) rates from the Department for Business, Energy and Industrial Strategy (BEIS), based on 'required' ENEX, with FP rates based on reported ENEX from the dataset in Deller and Waddams Price (2018a). The official FP rates are based on ENEX modelled using data from the English Housing Survey which includes a physical survey of dwellings. Both the 10% and Low Income-High Cost (LIHC) FP metrics are compared. The official statistics cover 10% FP from 2003-04 to 2011 and LIHC FP from 2003-04 to 2014. The headline rates of 10% and LIHC FP based on reported ENEX are calculated from 1995-96 to 2014, while reported ENEX FP rates disaggregated by household type are calculated for 2003-04 to 2014. Both the required ENEX and reported ENEX FP rates cover England only. When calculating reported ENEX FP rates, care is taken to follow the official

definitions¹ of 10% and LIHC FP as closely as possible. When calculating reported ENEX LIHC FP, median income and median housing costs are calculated separately for each year.

Deller, D., G. Turner and C. Waddams Price, 2018. A Postcode Lottery: Regional Electricity Price Variations for Inactive Consumers, Centre for Competition Policy, University of East Anglia, CCP Working Paper 18-10

This paper is based on two datasets. The main focus is a time series of the electricity bill charged by the incumbent supplier for 3,300 kWh of electricity per annum in each electricity supply region in Great Britain between 1970 and 2016.² The electricity bills are for the Standard Credit payment method (i.e. the default payment method), inclusive of VAT and are converted to 2016 prices using the Retail Price Index (RPI). The time series is formed from analysis undertaken in previous projects at the University of Warwick, from pricing sheets produced by Which?, energywatch and Consumer Focus and from data provided by Cornwall Energy.

After identifying the electricity bills of consumers who have stayed with the incumbent, data from a 2011 CCP survey are used to identify characteristics associated with this type of inactive consumer via a logit model. Full details of the survey are provided in Flores and Waddams Price (2018). An unrepresentative subsample of the data is analysed because it was not possible to identify households' electricity supply region for some respondents. The data provide two potential ways to identify whether a household had remained with the incumbent electricity supplier since market opening: (i) a question asking whether a household had ever switched supplier, and (ii) comparing a household's current supplier against the identity of the relevant region's incumbent supplier. The two approaches often give 'inconsistent' results regarding whether a household remains with the incumbent.

Deller, D. and A. Fletcher, 2018. Micro and Small Businesses' Satisfaction with the Energy Market: Policy Implications, Centre for Competition Policy, University of East Anglia, CCP Working Paper 18-9

This paper uses data from Ofgem's Micro and Small Business (MSB) market engagement surveys in 2014 and 2015.³ The analysis focused on the 2014 data, using the 2015 survey as a robustness check. The surveys cover businesses in Great Britain with 49 or fewer employees who are directly responsible for their energy purchases and purchase energy using a non-domestic contract. The survey intentionally oversampled firms with 5 or more employees. Ordered logit models are used to identify MSB characteristics associated with a higher level of satisfaction with respect to: (i) an MSB's current supplier, (ii) energy brokers, and (iii) the ease of comparing prices in the market. Each dependent variable consists of a five-point likert scale. Explanatory variables are split into two groups: (a) firm demographics e.g. number of employees, turnover and electricity expenditure, and (b) engagement, e.g. whether the MSB has switched in the last 5 years and whether they have read their energy contract. The analysis is restricted to MSBs providing responses relating to their electricity supplier, yielding a sample of just over 1,000 MSBs in 2014.

1 See BEIS/BRE (2018)

2 Data for 2014 was not found.

3 The researchers were not granted access to a variable identifying an MSB's energy supplier(s).

Deller, D., G. Turner and C. Waddams Price, 2019. Discrepancies between Perception- and Expenditure-based Fuel Poverty Indicators over Time, Centre for Competition Policy, University of East Anglia, CCP Working Paper 19-1

This paper uses the British Household Panel Survey (BHPS) between 2001-02 and 2008-09 to form an unbalanced panel involving almost 56,000 observations from 10,500 households. These years are analysed because they include specific survey questions required for our research and to harness booster samples in the devolved administrations. The data cover the UK as a whole, but the booster samples result in over-sampling of the devolved administrations. All monetary amounts are converted to 2008 prices using the Consumer Price Index (CPI). Two FP indicators based on reported ENEX are considered: (i) the 10% metric and (ii) the LIHC metric; and three perception-based indicators are considered: (iii) an inability to maintain adequate warmth in the home, (iv) an inability to afford adequate warmth in the home, and (v) living in a dwelling lacking adequate heating facilities. For LIHC FP the thresholds of median housing costs and median income are re-calculated in each year, applying weights so that the thresholds are representative of the UK as a whole. With the exception of using reported rather than required ENEX, our 10% and LIHC FP indicators are designed to follow the government's official FP definitions as closely as possible. Extensive descriptive statistics are produced looking at the (lack) of overlap between the different FP indicators. Additional descriptive statistics (exit probabilities) provide an initial assessment of the persistence of each FP indicator through time, with the persistence of income poverty⁴ used as a benchmark. Last, logit regressions including a wide range of explanatory variables identify the characteristics of households associated with each FP indicator. The regression analysis focuses on indicators (i), (ii) and (iv).

Hargreaves, T. and N. Longhurst, 2018. The lived experience of energy vulnerability among social housing tenants: emotional and subjective engagements, 3S (Science, Society and Sustainability)/Centre for Competition Policy, University of East Anglia, 3S Working Paper 18-32/CCP Working Paper 18-7

This paper explores the lived experience of social housing tenants at risk of FP. The research began with five telephone interviews with expert stakeholders (both academics and practitioners) working on FP to identify key issues and frame the research. This was followed by fifteen in-depth semi-structured interviews with tenants of Broadland Housing Association (BHA) in Norfolk between January and June 2017. These tenants were identified by BHA staff as likely to be at risk of FP, and were then selected to provide diversity regarding housing type, family structure and type of energy issues faced etc. Interview questions explored their everyday energy use, their properties' energy efficiency, how they manage their energy bills, and their reflections on BHA interventions. The interviews were recorded and transcribed verbatim before being coded thematically using NVivo software.

Harker, M. and D. Reader, 2018a. W(h)ither independent regulation: the 'repoliticisation' of British retail energy markets, Centre for Competition Policy, University of East Anglia (under review)

This paper uses two principal methodologies. First, a historic analysis of changes in the regulation of residential energy pricing between 2008 and 2014. The changes to policy are contextualised by investigating contemporary political debate and media coverage. Key institutional developments are charted to analyse whether key reforms had a discernible effect on regulatory independence. Second, semi-structured elite interviews were performed with current and former senior members of the regulatory and policy community (thirteen in total), with each interviewee assigned a descriptive indicator to

⁴ Defined as a household with an income below 60% of the estimated UK median.

contextualise their responses. The interviews enable a more detailed exploration of if, and how, regulatory independence has evolved; the institutional factors which may have contributed to any changes; and how to appropriately manage the relationship between regulators and government.

Harker, M. and D. Reader, 2018b. How do market regulators interpret statutory duties? The case of energy regulation in the UK, Centre for Competition Policy, University of East Anglia (mimeo)

This paper explores the evolution of the energy regulator's general statutory duties since privatisation. Here, documentary analysis and legal archival methods are employed to: (i) observe how the list of duties has changed over time through amending legislation, and (ii) identify the likely motivations behind these amendments. This analysis includes using QDA software to examine historic Hansard debates, Parliamentary reports and data from our elite interviews.

Errington, E., 2019. Just Regulation? Access to policy formulation for affordable energy in GB, Centre for Competition Policy, University of East Anglia, CCP Working Paper 19-2

To analyse the procedural and recognition justice implications of FP policy formulation, five case studies of documents were constructed. One case involved the House of Commons impacting policy for the UK as a whole and one case was selected for each of England, Scotland, Wales and Northern Ireland. Each of the country case studies included a consultation at national government level and stakeholder responses; a committee investigation or inquiry; and national government strategy documents. This documentary corpus generated an initial set of interviewees for semi-structured elite interviews with practitioners involved with FP policy formulation in the UK. The documents and interview transcripts were coded and analysed thematically using NVivo software. Coding and analysis were conducted in parallel with interviewing so that feedback could support the inclusion of further documents and interviewees. Coding included using a framing around distributive, procedural and recognition justice and emerging themes from the documents and interviews. In total thirty-four individuals from twenty-five organisations were interviewed.

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- Flores, M. and C. Waddams Price, 2018, The Role of Attitudes and Marketing in Consumer Behaviours in the British Retail Electricity Market, *The Energy Journal*, 39(4), pp. 153-179

Appendix 2

List of Abbreviations

AHC	After Housing Costs
BEIS	Department for Business, Energy and Industrial Strategy
BHA	Broadland Housing Association
BHPS	British Household Panel Survey
CCP	Centre for Competition Policy
CERT	Carbon Emissions Reduction Target
CMA	Competition and Markets Authority
CPI	Consumer Price Index
DCLG	Department for Communities and Local Government
DECC	Department for Energy and Climate Change
ECO	Energy Company Obligation
ENEX	Energy Expenditure
ENEXShr	Energy Expenditure Share
ESRC	Economic and Social Research Council
FP	Fuel Poverty or Fuel Poor
FPS	Fuel Poverty Strategy
kWh	Kilowatt-hour
LCF	Living Costs and Food Survey
LIHC	Low Income – High Cost
MSB	Micro and Small Business
NDC	Non-Discrimination Claus
OECD	Organisation for Economic Co-operation and Development

OFT	Office of Fair Trading
OLS	Ordinary Least Square
PPM	Pre-Payment Meter
RPI	Retail Price Index
SAP	Standard Assessment Procedure (energy efficiency ratings)
SEG	Social and Environmental Guidance
SPS	Strategy and Policy Statement
UEA	University of East Anglia
UKERC	UK Energy Research Centre
UKRI	UK Research and Innovation
WFP	Winter Fuel Payment
WHD	Warm Homes Discount



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