



This item was submitted to Loughborough's Institutional Repository (<https://dspace.lboro.ac.uk/>) by the author and is made available under the following Creative Commons Licence conditions.

The image shows a yellow-bordered box containing the Creative Commons Attribution-NonCommercial-NoDerivs 2.5 license summary. At the top is the Creative Commons logo (CC) and the text 'creative commons' in a bold, lowercase font, with 'COMMONS DEED' in a smaller, spaced-out font below it. The license title 'Attribution-NonCommercial-NoDerivs 2.5' is centered. Below this, the text 'You are free:' is followed by a bullet point: 'to copy, distribute, display, and perform the work'. Then, 'Under the following conditions:' is followed by three items, each with a circular icon: 1. 'BY:' icon (a circle with 'BY' inside) followed by the text 'Attribution. You must attribute the work in the manner specified by the author or licensor.' 2. '\$' icon (a circle with a dollar sign and a diagonal slash) followed by the text 'Noncommercial. You may not use this work for commercial purposes.' 3. '=' icon (a circle with an equals sign) followed by the text 'No Derivative Works. You may not alter, transform, or build upon this work.' Below these three items are two more bullet points: 'For any reuse or distribution, you must make clear to others the license terms of this work.' and 'Any of these conditions can be waived if you get permission from the copyright holder.' At the bottom of the box, the text 'Your fair use and other rights are in no way affected by the above.' is followed by 'This is a human-readable summary of the [Legal Code \(the full license\)](#).' and a 'Disclaimer' link with a small icon.

For the full text of this licence, please go to:
<http://creativecommons.org/licenses/by-nc-nd/2.5/>

The 100-day challenge

A literature review of the factors associated with tackling fuel poverty in the United Kingdom

A report for E.ON UK

Issued on 28 August 2009

Contributors

Loughborough University,
Ashby Road,
Leicestershire.
LE11 3TU
www.lboro.ac.uk

E.ON Engineering,
Technology Centre,
Ratcliffe on Soar,
Nottinghamshire.
NG11 0EE
www.eon-engineering.com



Contributing institutes

Department of Civil and Building Engineering, Loughborough University
Ergonomics and Safety Research Institute (ESRI), Loughborough University
Centre for Research in Social Policy (CRSP), Loughborough University
E.ON Engineering

Authors

Dennis Loveday, Principal Investigator – Project CALEBRE, Department of Civil and Building Engineering, and Director, Sustainability Research School, Loughborough University

Keyur Vadodaria, Research Associate – Project CALEBRE, Department of Civil and Building Engineering, Loughborough University

Victoria Haines, Head of Applied Ergonomics Centre, Co-Investigator Project CALEBRE and Co-Investigator Project CCC (Carbon, Control and Comfort), Ergonomics and Safety Research Institute, Loughborough University

Becky Mallaband, Research Associate, Ergonomics and Safety Research Institute, Loughborough University

Val Mitchell, Research Fellow and Senior Researcher on Project CALEBRE, Ergonomics and Safety Research Institute, Loughborough University

Kim Perren, Research Fellow, Centre for Research in Social Policy, Loughborough University

Dave Clarke, Head of Research and Development, E.ON Engineering

Paul Guest, Business Modelling, E.ON Engineering

The Ergonomics and Safety Research Institute (ESRI) is one of the world's leading centres for independent vehicle safety and human factors scientific expertise. ESRI's mission is the application of research based knowledge to solve real world problems and the study of real world problems to inform our understanding of the underlying science. ESRI undertakes research projects on behalf of the EC, government departments and their agencies and commercial organisations world-wide. ESRI provides teaching support to a range of Loughborough departments in its areas of expertise and supports a community of PhD students.

The Centre for Research in Social Policy (CRSP) is an autonomous research centre based in the Department of Social Sciences at Loughborough University. The Centre, established in 1983, employs 21 researchers as well as a support team of 6 and has a national and international reputation for high quality applied policy research. CRSP's research has five main themes: Children, Youth and the Life-Course; Equality, Diversity and Citizenship; Health, Social Care and Wellbeing; Poverty and Social Exclusion; Work and Welfare.

Project 'CALEBRE' (Consumer-Appealing Low Energy technologies for Building Retrofitting) is a £2million four year (2008-2012) project, funded by the EPSRC and E.ON UK. With Loughborough University as Principal Investigator, researchers at partner universities of Nottingham, Ulster, Heriot-Watt, Oxford and Warwick are conducting research on validated solutions for carbon reduction in UK solid wall housing that are acceptable and appealing to householders.

E.ON Engineering is the consulting engineering company of E.ON owned by E.ON Energie AG and E.ON Ruhrgas AG to serve investors and operators in the fields of power & gas and is the parent company of all EEN Group companies. The strategy of E.ON Engineering to add value to E.ON through excellence and innovation in technology and engineering.

EXECUTIVE SUMMARY

Fuel poverty is a complex issue arising from a simple problem: the inability to afford to sufficiently heat one's home. The Government has pledged that all vulnerable households should be removed from fuel poverty by 2010, with longer-term aims that no households in England should live in fuel poverty by 2016 and that, by 2018, fuel poverty should be completely eradicated throughout the UK. This report comprises a review of the available literature on the major issues associated with fuel poverty in the UK, with particular reference to the efficacy of staple methods used to treat fuel-poor households.

Key measures

Definition: There is a standard definition used by the UK Government which states that a household is suffering from fuel poverty if it would need to spend over 10% of its income in order to achieve satisfactory levels of heating within the home. The full income used in this definition includes all benefits, including income directly related to housing such as Housing Benefit. The amount of energy required to provide satisfactory heat to a dwelling is a value based on modelling, rather than measurement; government figures use energy consumptions modelled using the Buildings Research Establishment Domestic Energy Model (BREDEM).

This definition is open to criticism from a number of angles. In reality, a household's ability to pay heating costs depends upon its disposable income, but this measure is not generally used in government headline figures. Anti-poverty groups tend to favour a disposable income measure, because such metrics are comparatively insensitive to extraneous factors such as local house prices or rents. Regarding the Government metric, there is a lack of clarity regarding exactly which benefits should be included in an appropriate definition, meaning that the existing definition is open to misinterpretation.

Crucially, the definition is not normalised ('equivalised') so as to enable accurate comparison between different occupancies – this is out of line with most credible poverty indicators. This means that the Government indicator

will tend to overestimate the levels of fuel poverty in small households and underestimate the levels in larger households.

Thermal Comfort: There is little correlation between an individual's subjective view of household thermal comfort and the objective measure of thermal comfort. Generally, households with dependant children are more likely to consider themselves unable to keep comfortably warm. Elderly households tend to consider themselves relatively thermally comfortable – this may highlight a difference in different generations' attitudes to thermal comfort and fuel conservation. Overall, studies indicate that the number of people in subjective fuel poverty is greater than the number according to the Government definition.

Regulations: There are numerous regulatory aspects designed to help households at risk of fuel poverty. Firstly, the benefits system provides extra income for the vulnerable; however, the benefits system is highly complex and there is evidence that many people do not claim all of their entitlement. Benefit claims are usually instigated by the claimant, so householders who are socially isolated may not be aware of their eligibility. The major benefit aimed at helping those at risk of fuel poverty, namely the Winter Fuel Payment, is not means-tested, and hence is paid to a significant number of fuel-rich householders.

Efficiency: Housing efficiency measures may be installed under the umbrella of many different types of initiative, including fuel poverty measures, climate change reduction or home quality standards. The type of initiative can influence the types of efficiency measures which can be installed. All of these measures must comply with building and planning regulations and this can restrict or delay the installation of certain technologies.

The energy savings observed after the installation of efficiency measures are often less significant than predicted savings. This is because of imperfect installations and also because of behavioural changes of households. In dwellings which were previously kept at relatively low temperatures,

householders tend to renormalize their level of thermal comfort, an effect commonly known as 'take-back'.

Tariffs: Some households may be eligible for an energy supplier's social tariff. Social tariffs are special products which must at least match a supplier's cheapest existing tariff, designed to help the most vulnerable customers within a supplier's portfolio. These products are monitored by Ofgem, but suppliers are free to focus upon any vulnerable subset of their customer base and have freedom to choose the pricing structure.

There is little coordination of these tariffs across the energy supply industry, with respect to either pricing or target audience. As a result, it is possible for an individual social tariff to be undercut by a standard price from a rival supplier. Social tariffs have a relatively low profile, and tend not to be marketed aggressively by suppliers, although there is some variation in this between the different energy companies.

Effectiveness of work to date

Much of the available literature is based upon the effectiveness of Warm Front installations. It has been observed that, although Warm Front measures do typically increase dwelling efficiency, fuel consumption reductions are significantly less than predicted. There are two main reasons for this: technical issues, which limit the extent to which energy efficiency measures can be employed, and behavioural changes, which result in a take-back of energy savings. Also, socio-cultural and regional factors have influenced the uptake and success of fuel poverty measures and schemes.

Measures that raise consumer awareness of the help available to reduce energy bills have had a degree of success. Research has suggested that technologies like smart meters and clip-on visual displays may reduce the take-back process; however, technological and regulatory barriers currently prohibit a cost-effective uptake of these initiatives.

The current report has highlighted several key challenges which must be addressed. There are a large number of households, notably Hard To Treat properties, where it is difficult or ineffective to employ staple energy efficiency measures. While new, efficient housing stock is required to replace the least energy efficient dwellings, development of cost-effective low or zero carbon technologies is required to treat Hard To Treat properties.

Roles of stakeholders

A wide variety of stakeholders have been identified in this review, and the influence and visibility of these stakeholders ranges significantly. Clearly the responsibilities of government and energy suppliers are critical in providing the means for individuals to receive fuel poverty mitigation measures.

However, raising awareness of the issues is a role that could be taken by several stakeholders, ranging from the preceding two major players, to the informal advice provided by friends and family.

Fuel poverty is a difficult issue to address, and the fact that the number of sufferers has increased over the past few years suggests that the remedial measures to date have had limited success. Possible reasons for this are that those at risk of fuel poverty are unaware of the measures available or are reluctant to spend money or time to obtain benefits which are realised over a longer term. It is clear that some of the major stakeholders could play a more significant role by providing guidance for people in difficulty, for example by acting as a 'one stop shop' for such guidance.

In view of the number of actors involved and the various geographic and socio-economic factors involved, there are several different paths which can be taken by an individual suffering from fuel poverty. Although there are many measures available, the interplay of the stakeholders to deliver any improvements is complex and warrants further attention.

Financial and digital exclusion

Financial exclusion refers to processes that prevent or deter people from accessing standard financial services, such as current accounts, affordable

credit, insurance products, savings and financial advice. There is a clear overlap between households and communities that are financially excluded and those that are at risk of fuel poverty.

Initiatives that encourage households to open simple transaction accounts have been less successful than originally envisaged. Low levels of financial competency contribute to the low take up of financial services. Low levels of technological competency contribute to the low use of the internet for financial purposes (including transactions and advice-seeking).

Social norms sustain the cash culture in financially excluded areas. Given the very high level of resources invested in financial exclusion hotspots, it may be appropriate to exclude these areas for the 100 day initiative.

Recommendations and open questions for the 100 day project

- Subjective measures of fuel poverty should be used in addition to the standard objective measures.
- Actual levels of income, fuel consumption, thermal comfort and dwelling efficiency (SAP rating) should be recorded for each household and compared with official Government metrics and output from BREDEM.
- Introduction of technology into the households needs to be accompanied by education regarding energy use and should be designed to create long-term sustained behavioural change. Hence, monitoring and feedback should be an integral part of any fuel poverty measures and, in particular, the 100 day initiative.
- Fuel poverty measures must include a benefit entitlement check and assistance to ensure that these benefits are actually claimed. The claims process merits further investigation regarding trigger points and intervention.
- The energy efficiency measures to be employed in this project should preferably be those which do not require planning permission, as this

could potentially delay any action. This may restrict the use of some microgeneration technologies within the 100 day initiative.

- A scenario may be envisioned whereby a competitor offers a tariff which is cheaper than the lowest priced E.ON social tariff. What would be the response of E.ON to the emergence of such a scenario?
- It is critical to accurately monitor the temperatures of all habitable rooms and to investigate the actual energy use within the dwelling in order to properly assess the impact of any interventions
- The effect of climate change warrants some additional attention. Warmer summers and the possibility of summertime overheating may result in a scenario where today's fuel-poor households, having a lack of affordable warmth, may end up being tomorrow's fuel-poor households, having a lack of affordable cooling (though passive cooling solutions should, of course, be encouraged as opposed to the adoption of active energy solutions for cooling). Any installed measures should be assessed in terms of their fitness for purpose both now and in the future
- The interplay of stakeholders is highly complex, and further analysis into this area is required to fully understand the barriers involved in delivering fuel poverty abatement measures.

TABLE OF CONTENTS

1	INTRODUCTION.....	2
2	WHAT IS FUEL POVERTY?.....	4
3	WHAT ARE THE LEGAL, REGULATORY AND STATUTORY ASPECTS AROUND FUEL POVERTY?.....	28
4	WHAT CAN BE LEARNED FROM WORK TO DATE TO ERADICATE FUEL POVERTY?.....	49
5	WHAT IS THE ROLE OF EACH STAKEHOLDER ON FUEL POVERTY?.....	60
6	WHAT CAN BE LEARNED FROM THE FINANCIAL SECTOR, AND THE IMPACT OF FINANCIAL AND DIGITAL EXCLUSION FOR PEOPLE WHO CANNOT ACCESS THE BEST DEALS?	81
7	CONCLUSIONS.....	93
8	BIBLIOGRAPHY.....	95
Annex A	THE UK BENEFITS SYSTEM.....	113
Annex B	VULNERABLE HOUSEHOLDS	115
Annex C	GLOSSARY AND ACRONYMS	117

1 INTRODUCTION

Since an Act of Parliament was passed in November 2000, the Government has pledged that fuel poverty – the act of being unable to afford to adequately heat one's home – should be eliminated throughout the UK by 2018. This subject is politically and ethically important because it is well known that cold temperatures contribute to excess winter deaths, especially within the elderly population. Although the levels of fuel poverty did decrease somewhat in the years immediately following this pledge, since 2005 the levels have begun to rise rapidly again. Latest indications are that the current levels may be nearly as high as those measured in the late 1990s: as of August 2009, around five million households were estimated to be suffering from fuel poverty.

There are many contributing factors associated with this recent increase. The recent weak economic position (accompanied by increasing unemployment) may have reduced the income of a number of households sufficiently to bring them into fuel poverty. Another important factor is that energy prices have increased markedly in the last few years, notably because of the recent volatility in price of fossil fuels. It is apparent that to effect a palpable reduction in the levels of fuel poverty, an increased investment in measures to combat these two factors is imperative. Government and energy suppliers have introduced several initiatives to tackle this issue but, quite clearly, success has been limited. Forecasts suggest that energy costs will continue to rise from this point, so it is likely that the issue of fuel poverty will not subside but rather worsen over the long term.

The purpose of this report is to review the available literature on the subject of fuel poverty. There is a vast amount of material on this subject in the public domain, from several different Government departments, plus academia, NGOs, charities and many more. Some relevant research is actually associated with low-carbon technology initiatives rather than fuel poverty

directly, as many of the technologies involved in decarbonising the home are also appropriate for use in treating fuel poor households.

This report has a slightly narrower remit than simply reviewing all issues involved in this area. Subsequent sections of the report focus on the definition of fuel poverty, the regulatory aspects, the effectiveness of current measures, the roles and responsibilities of the key stakeholders and finally the impact of financial and digital exclusion in this area. This work has indicated that there are numerous barriers to a true understanding of the problem at hand and there are also issues regarding the effectiveness of the current approaches used to address specific cases.

The E.ON 100 homes initiative is a opportunity to analyse the efficacy of the available methods used in treating fuel poverty. It will allow the interplay of the stakeholders involved with fuel poverty action to be investigated. This report provides a number of suggestions and questions for the project, with particular reference to issues of monitoring energy usage of those households involved in the initiative.

2 WHAT IS FUEL POVERTY?

2.1 What is the most robust/widely accepted definition?

The standard definition of a fuel poor household is a household that needs to spend more than 10% of its income on fuel use in order to heat the home to an adequate standard and in order to meet its needs for lighting, cooking and the running of domestic appliances (DTI/DEFRA, 2001; Baker and Starling, 2003).

The Fuel Poverty Ratio is defined as:

$$\text{Fuel poverty ratio} = \frac{\text{Fuel costs (usage x price)}}{\text{income}}$$

If this ratio is greater than 0.1 then the household is classified as being in Fuel Poverty (DEFRA/BERR 2008).

2.2 The extent of fuel poverty

2.4 million households in England were classified as being in fuel poverty in 2006. This is considerably higher than in 2005 (1.5 million) but much lower than a decade ago (5 million). It represents around 11% of all households. Since 2006 (the year to which the latest official data applies), energy prices have risen considerably. As a result, it is estimated that the number of households in England in fuel poverty in 2007 was around 3 million (Palmer et al, 2008). Figure 2-1 through Figure 2-3 provide a view of the progression of fuel poverty over the past decade.

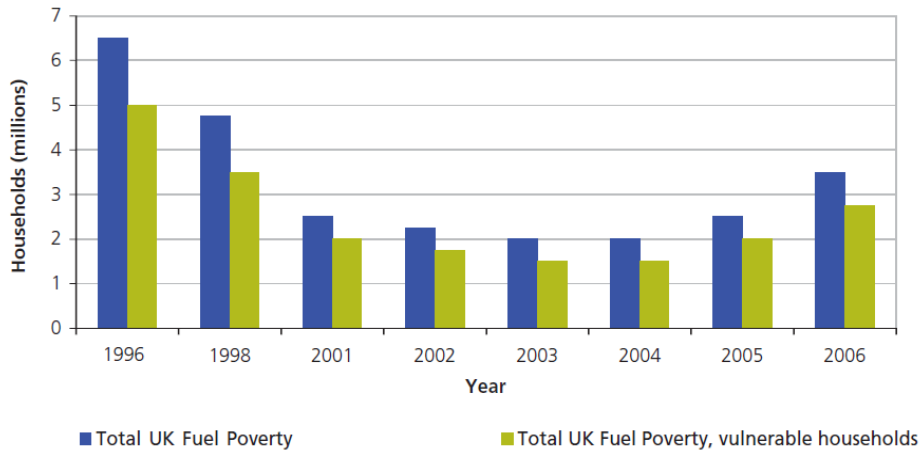


Figure 2-1: Fuel poverty in the UK, all households and vulnerable, 1996-2006 (Source: BERR, 2008)

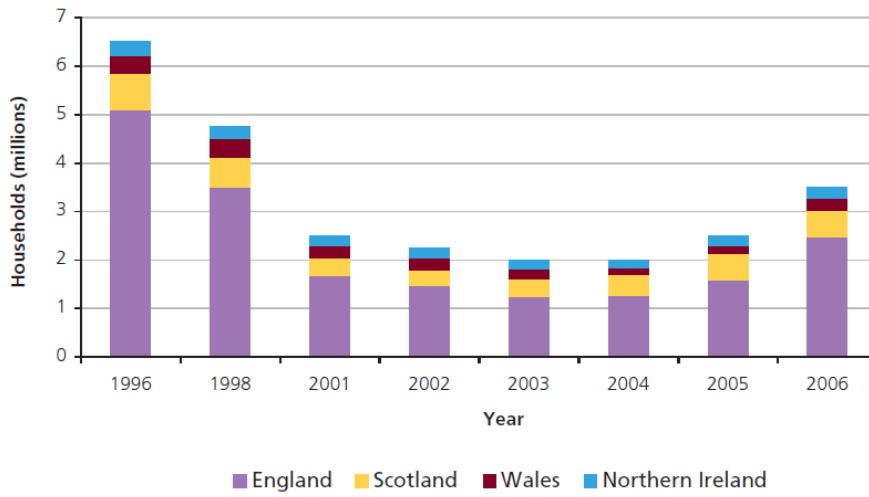


Figure 2-2: Fuel poverty by country, 1996-2006 (Source: BERR, 2008)

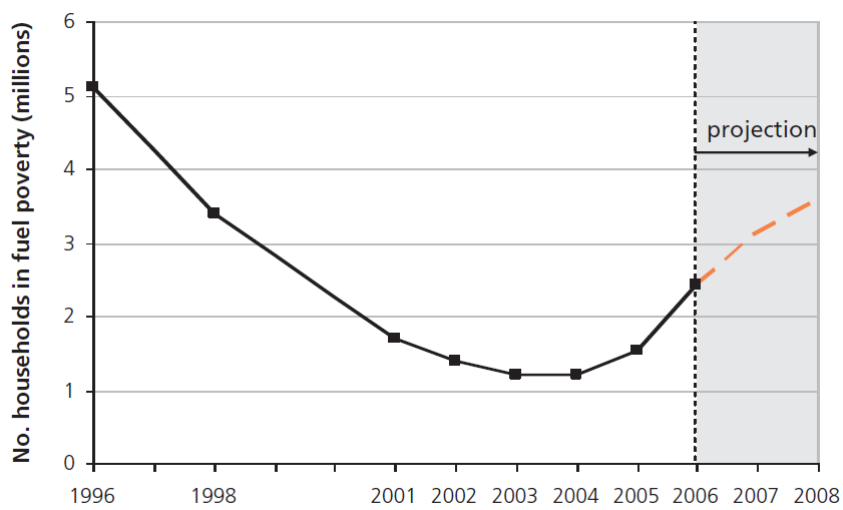


Figure 2-3: Fuel Poverty Projections, 1996-2008 (Source: BERR, 2008)

A selection of socio-economic and geographic risk factors associated with fuel poverty are shown in Table 1. From a pure geographic perspective, within England fuel poverty is most prevalent in the North East.

Group	Comparator	Difference in proportion of income spent on fuel	Difference in income	Difference in fuel costs	Major factors accounting for difference in fuel cost
Singles in income poverty	Other households in income poverty	60% more	50% less	25% less	Smaller homes (-10%). Fewer people (-15%)
Rurals in income poverty	Other households in income poverty	20% more	5% less	15% more	Larger homes (5%). Less energy efficient (15%). Various other factors (-5%)
Outright property owners in income poverty	Other households in income poverty	30% more	20% less	5% more	Larger homes (5%). Less energy efficient (5%). Fewer people (-5%).
Households in less deprived areas in income poverty	Other households in income poverty	10% more	5% less	5% less	Larger homes (4%). Lower SAP (3%). Geography (-2%).
All singles	All other households	60% more	50% less	25% less	Smaller homes (15%). Fewer people (10%).
All rurals	All other households	3% more	18% more	20% more	Larger homes (10%). Lower SAP (10%).
All outright property owners	All other households	15% more	2% less	10% more	Larger homes (10%). Lower SAP (5%). Fewer people (-5%).
Households in more deprived areas	All other households	30% more	30% less	10% less	Smaller homes (10%).

Table 1: What accounts for higher risks? (Source: Palmer et al, 2008)

2.3 What are the different types/classification of fuel poverty?

2.3.1 Definitions of fuel poverty used within the Fuel Poverty Indicator

The Fuel Poverty Indicator¹ is a statistical model of fuel poverty based on the 2003 English House Condition Survey (EHCS) and the 2001 Census together with data from postcode level housing data from RESIDATA that includes age of dwelling and a property valuation (Baker and Starling, 2003). It was developed by the Centre for Sustainable Energy and Townsend Centre for International Poverty Research at the University of Bristol.

The EHCS was used to predict the risk of fuel poverty for different household types. The results were then applied to the 2001 Census data to predict the level of fuel poverty for all Lower Super Output Areas (LSOAs) in England.

¹ <http://www.fuelpovertyindicator.org.uk>

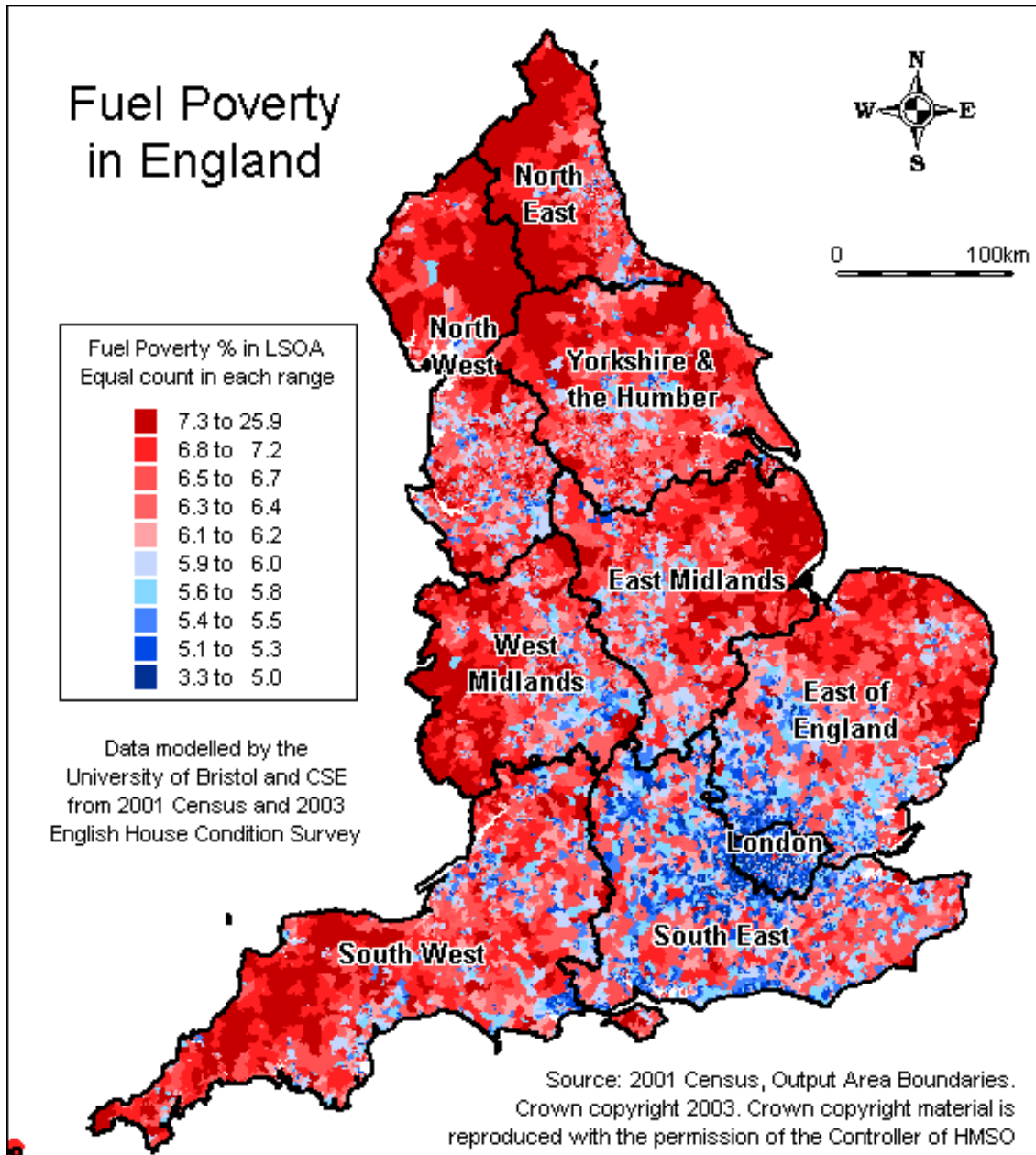


Figure 2-4: Fuel Poverty indicator map, England (Source: <http://www.fuelpovertyindicator.org.uk>)

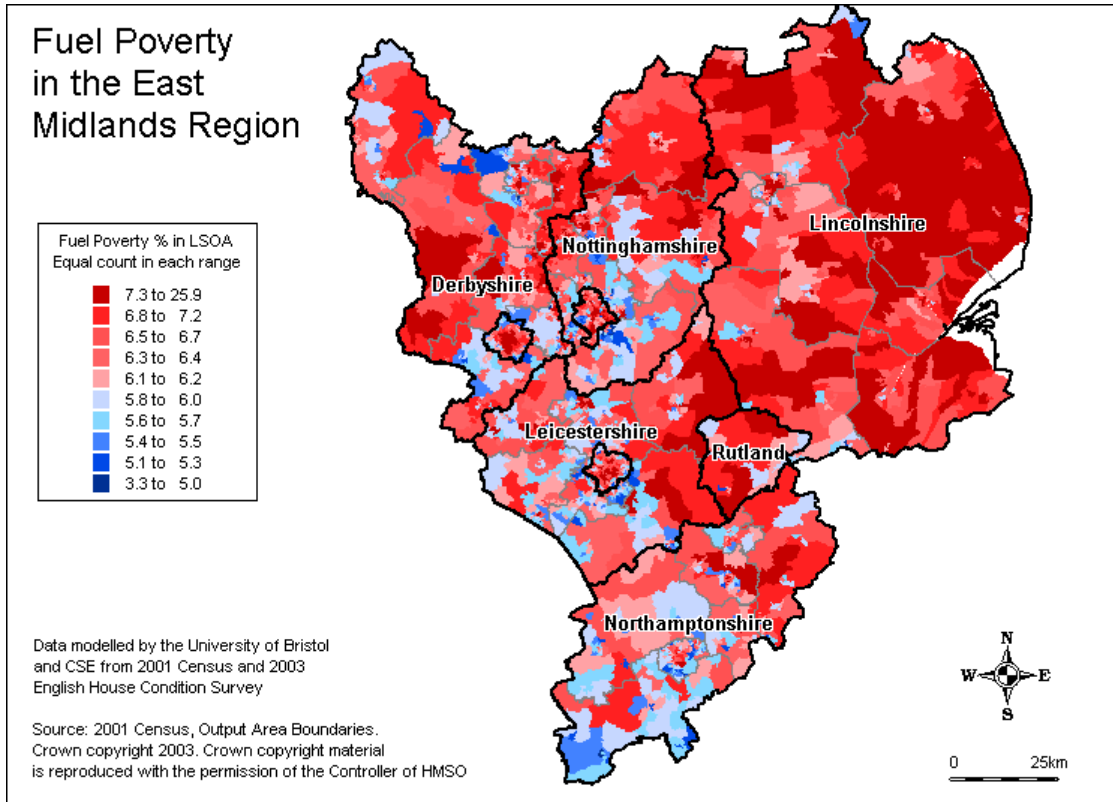


Figure 2-5: Fuel Poverty indicator map, East Midlands (Source: <http://www.fuelpovertyindicator.org.uk>)

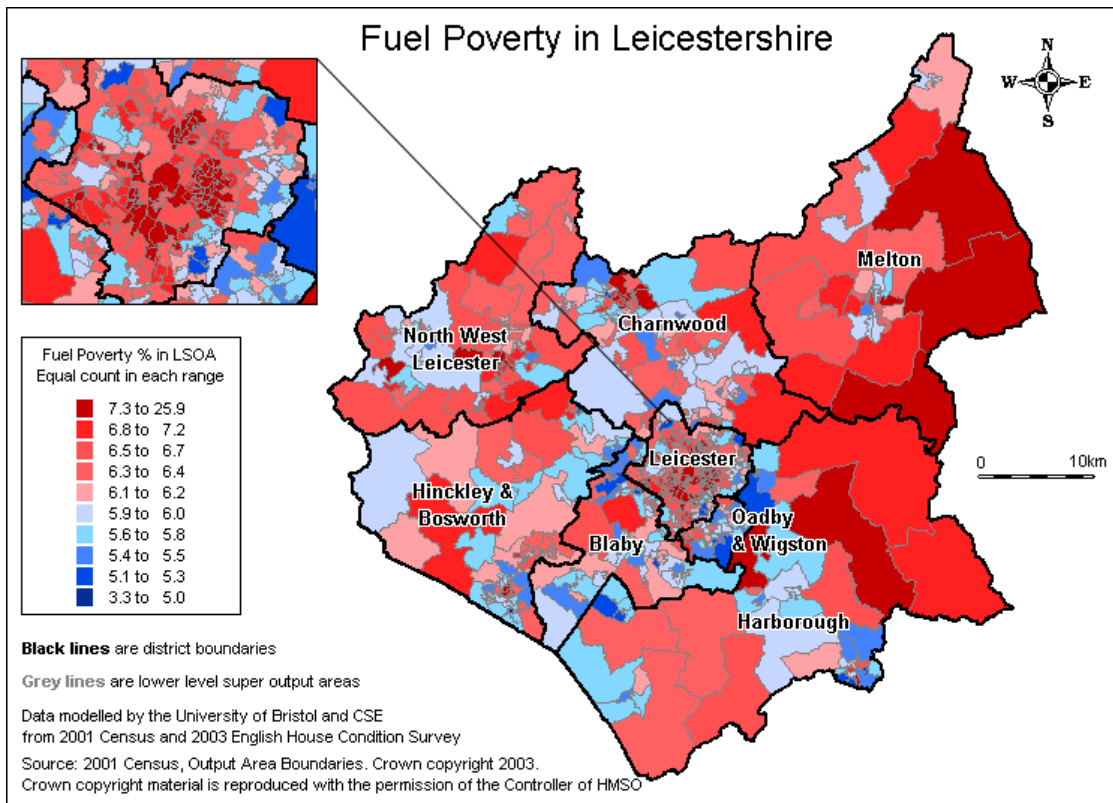


Figure 2-6: Fuel Poverty indicator map, Leicestershire (Source: <http://www.fuelpovertyindicator.org.uk>)

Four definitions of fuel poverty are used for the Fuel Poverty Indicator (Fahmy and Gordon, 2007).

1. *Full income*: A household is in fuel poverty if, in order to maintain a satisfactory heating regime and cover other normal fuel costs, it would be required to spend more than 10% of its income on all household fuel use. 'Income' by this definition includes Housing Benefit, Income Support for Mortgage Interest, and Council Tax Benefit.

This is the Government's official definition of fuel poverty used for the official headline figure.

2. *Basic income*: As above except that Housing Benefit, Income Support for Mortgage Interest and Council Tax Benefit are not included as part of household income.

When comparing the incomes of households, both International and UK standards advocate the use of adjustments to take into account different household sizes (numbers of people) (Fahmy and Gordon, 2007). Both the DWP and the European Union have now agreed that low income/poverty statistics should be equivalised (adjusted) using the Modified OECD Scale (Atkinson et al, 2002). Therefore within the Fuel Poverty Indicator two additional measures of Fuel Poverty have been developed to take into account these adjustments.

3. *Full income (equivalised)*: As for 'full income' except income is adjusted or 'equivalised' and very low incomes are 'not imputed'².

² Incomes are 'not imputed' (changed) when the reported household income is assumed to be accurate. This contrasts with the EHCS which assumes that all households have as a minimum an income equivalent to benefit levels. By not imputing incomes, these measures acknowledge that some households subsist on incomes below the official benefit levels

4. *Basic income (equivalised)*: As for 'basic income' except that income is 'equivalised' and very low incomes are 'not imputed' .

These 'equivalised' measures provide a more accurate assessment of the true extent of fuel poverty than the unadjusted full and basic income measures. Fahmy and Gordon (2007) provide the following example:

“A family of 4 with an annual income of £15,000 can be considered to be ‘poorer’ than a single person with an annual income of £15,000. If both these families live in a 1930’s semidetached house the heating and fuel costs of the family of four will be slightly greater than for the single person. However, some of the family of four’s non-fuel costs will be much greater (e.g. their food costs, their clothing costs, etc.) - these costs have greater elasticity than fuel costs.

Unless income is equivalised to take account these additional costs then any fuel poverty calculation will inevitably underestimate the ‘true’ amount of fuel poverty amongst larger households and overestimate the extent of fuel poverty amongst smaller households. This will result in an overestimate of the extent of fuel poverty in areas with high proportions of small households and an underestimate of the extent of fuel poverty in areas with high proportions of large households.”

Morrison and Shortt (2007) provide an alternative methodology for highlighting areas and households that are possibly susceptible to fuel poverty.

2.3.2 Subjective definitions of fuel poverty

The EHCS contains as part of the household interview section, a question which provides insight into householders' subjective thermal comfort during winter (DEFRA/BERR 2008). The survey asks:

“During the cold weather, can you normally keep warm in your living room?”

If respondents answer no, then a follow on question is used to ascertain whether this is because it costs too much to keep the heating on and/or it is not possible to heat the room to a comfortable standard. The subset of householders who answered that they could not keep warm in their main living room because it cost too much to heat are classified as being 'self reported' fuel poor.

Using 2005 survey data (the most recent subjective data available in 2008) DEFRA/BERR found little correlation between households officially classified as fuel poor using the official Government measure and those that reported that they were unable to keep comfortably warm in their living rooms during winter. For example of the 6.6% of survey households classified as 'self reported' fuel poor only one in eight were actually classed as fuel poor using the Government's official measure (DEFRA/BERR, 2008). Similarly only one in nine householders who were actually fuel poor according to the official measure responded that they could not keep comfortably warm in winter. Further analysis showed that households with a dependant child or children were most likely to state that they were unable to keep comfortably warm, whereas single person households are the most likely group to be calculated objectively as fuel poor. Figure 2-7 below provides further comparison of subjective fuel comfort against fuel poverty by household type.

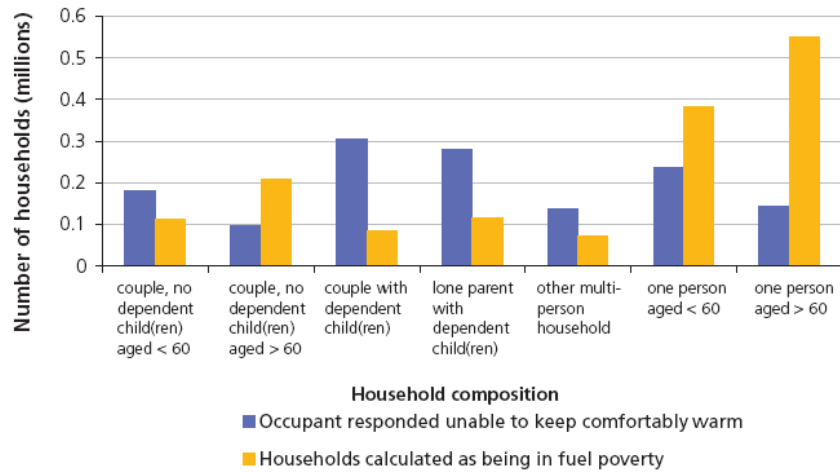


Figure 2-7: Comparison of subjective thermal comfort against fuel poverty by household type (from DEFRA/BERR 2008)

Brazier et al (2006) used a survey methodology within a sample of 3417 low income households to explore the correlation between the objective measures used to assess fuel poverty and whether or not householders believe that they can afford sufficient energy to meet their needs. They argue that a better understanding of this relationship is needed to improve the targeting of limited government and industry resources. They found that the numbers in subjective fuel poverty are higher than those spending more than 10% of their income on fuel and therefore even if all households are removed from 'objective' fuel poverty many will still feel unable to afford their bills.

2.4 What is the methodology to identify/assess fuel poverty

The full and basic income definitions (non equivalised) are used for the Government's official fuel poverty statistics. A full description of the methodology used is provided in BRE DTI DEFRA (2006). The key data source used to estimate the extent of fuel poverty is the EHCS which provides information on the condition and composition of the English housing stock and the characteristics of the households living within the different types of dwelling. The survey has operated on a continuous basis since 2001 with approximately 8000 dwellings surveyed every year. When monitoring fuel poverty, the data sets for two years are combined to provide data for approximately 1600 dwellings.

2.4.1 Income

As previously described two different definitions of income are used to assess the extent of fuel poverty. These are the *basic income* and *full income* definitions. In both definitions the income (net of income tax and national insurance) for the whole household is used. The household is defined as the Household Reference Person (HRP), their partner and any other adult member of the household.

2.4.2 Fuel costs

Fuel costs are modelled rather than based on actual spending. The price each household pays for fuel is defined by four factors:

- Household's location within the country (there are regional differences in fuel prices)
- Choice of supplier
- Choice of tariff
- Method of payment where relevant (i.e. payment by direct debit, credit, pre-payment meter etc.

The EHCS does not collect information on the exact tariff or supplier but does provide information on the geographical location and method of payment.

2.4.3 Energy consumption

The amount of energy required to heat a dwelling depends upon the building specification (including factors such as insulation levels and heating systems) and geographical location. A household's demand for energy depends upon the number of people within the household and the behaviours of these individuals.

The BREDEM model (BRE, 2001) is used to predict the energy use of a household where:

$$\text{Total household fuel consumption} = E_S + E_W + E_{L\&A} + E_C$$

The components of the model are:

Space heating - E_S

Water heating - E_W

Lights and appliances - $E_{L\&A}$

Cooking - E_C

The calculation method for each component of energy consumption is consistent with standard energy models including the Standard Assessment Procedure (SAP) for calculating energy use in dwellings (BRE, 2001).

Data about the housing stock and its occupants are collected within the physical and interview survey components of the EHCS. The physical survey is undertaken by trained surveyors. The interview survey contains responses from HRP or their partner. Calculation of fuel consumption data uses information from both the physical and interview surveys to model the following:

- Heat loss due to conduction from the external house structure to the external environment
- Heat gain from solar fluxes and other gains from lights, appliances and occupants
- Heat loss due to ventilation
- Energy required for space and water heating systems
- The heating regime of the occupants
- Energy required for lights, appliances and cooking.

The heating regime of the occupants is defined according to household type (DETR, 2000a).

- *Standard heating regime:* Used for households in work or fulltime education. The standard is 21°C in the living room and 18°C in the other occupied rooms for the whole house for 9 hours a day (morning and evening).
- *Full heating regime:* Used for households that are likely to be at home all day. The standard is 21°C in the living room and 18°C in the other occupied rooms for the whole house for 16 hours a day (all day).

- *Partial heating regime*: Used for under occupied households (defined according to the 1968 Parker Morris standard building regulations which set the minimum floor area for a home depending on the number of occupants, HMSO (1968)). The standard is 21°C in the living room and 18°C in the other occupied rooms for half of the house for 16 hours a day (all day).

Methods for predicting fuel poverty vary in scale from absolute indicators which assess the level of fuel poverty experienced by individual households through to Local Area Indicators and Surveys which measure the relative risk of fuel poor households living in a particular area. The costs of administering such indicators range from the comparatively expensive, yet thorough, process of performing an individual house assessment, to the comparatively inexpensive yet less accurate method of combining social variables from the census to determine which areas are most likely to include fuel poor households. (Pither and Moore, 2006, cited by Morrison and Shortt, 2007).

An example of the individual household level fuel poverty estimator is the 'Affordable Warmth Index', which uses survey software working on a handheld device to identify 'fuel poor' buildings'. This was co-developed by Powergen and energy efficiency specialists at NHER (National Home Energy Rating). The system generates "an Affordable Warmth rating after a five-minute assessment" (E.ON, 2003). Although the Affordable Warmth Index quantifies the risk of fuel poverty for individual households, it does not solve the larger problem of identifying the areas that should be targeted for 'fuel poverty proofing' (Morrison and Shortt, 2007). The accuracy of assessments produced from such a short survey must also be questioned.

Several methods of predicting fuel poverty at a local area level are currently used in the UK. The most established is the Fuel Poverty Indicator (FPI) (Fahmy and Gordon, 2007) which as previously described uses census data from 2001, data from the EHCS and postcode level housing data from

RESIDATA that includes the age of dwelling and a property valuation (Baker and Starling, 2003). The census variables identified as predictors of fuel poverty within the FPI are as follows (Baker and Starling, 2003):

- Unemployed households
- Under - occupied households
- Households with no access to a car
- Households with no central heating
- Single pensioner households
- Lone parent households
- Private renting households
- Households including a disabled person

2.4.4 Criticism of the current official methodology for assessing fuel poverty

The reliability of the methodology for measuring fuel poverty has been criticised by both academic and social action groups. The Poverty Site, funded by the Joseph Rowntree Foundation, monitors poverty and social exclusion in the UK using around 100 statistical indicators including the Government's Fuel Poverty statistics. The site rates the overall adequacy of the indicator as '*medium*'. Whilst acknowledging that the EHCS is a well-established, regular government survey, designed to be nationally representative, the site concludes that "calculation of required fuel costs is both complex and obscure." (The Poverty Site, n.d.)

The government official headline figures use the *full income* measure which includes Housing Benefit, Income Support for Mortgage Interest, Mortgage Payment Protection Insurance and Council Tax Benefit. Many fuel poverty organisations prefer an income definition that is based on *disposable income* (Baker and Starling, 2003; NRFC, 2002). This is because a 'disposable income definition' prevents a household's fuel poverty status being influenced by such extraneous factors as local house prices or rents. The basic income definition is closer to a disposable income definition but still does not deduct rent and mortgage interest payments from the household income (The Poverty Site, n.d.).

Fahmy and Gordon (2007) argue strongly for the equivalisation of income within measures for assessing fuel poverty. They argue that both international and UK statistical standards state clearly that, when comparing incomes of households of different sizes, income should be 'equivalised' or adjusted for household size and composition. Both the DWP and the European Union agree that low income/poverty statistics should be equivalised using the Modified OECD Scale (e.g. Atkinson et al, 2002). Income used to calculate fuel poverty should, according to Fahmy and Gordon, also be adjusted using this scale. Gordon (2004) acknowledges that some people counter this viewpoint by reasoning that fuel costs within the fuel poverty statistics are already adjusted by household size and composition (e.g. equivalised) and therefore income does not also need be adjusted. However, Fahmy and Gordon (2007) conclude that unless income is equivalised, any fuel poverty calculation will inevitably underestimate the 'true' amount of fuel poverty amongst larger households and overestimate the extent of fuel poverty amongst smaller households.

Gordon (2004) argues that the current fuel poverty estimates which show high rates of fuel poverty amongst single people (particularly pensioners) and relatively low rates of fuel poverty amongst larger families with children, are "largely a statistical artefact which has resulted because income has not been equivalised by household size and composition". This 'statistical artefact' he concludes has led to fuel poverty monies being spent inefficiently and ineffectively due to the inadequate statistical methodology used to measure fuel poverty.

2.5 What are the contribution of each element to fuel poverty: low income, poor housing and high energy price?

Whether or not a household experiences fuel poverty is determined by a number of social and physical factors as well as by broader political policy related to energy and housing. Social factors refer to the demographic make-up and subsequent income of the occupants of a particular household, whilst

the physical factors refer to specific characteristics of the dwelling in which the householders reside—largely energy (in)efficiency and location (Morrison and Shortt, 2007). For example, where household income is sufficiently high it can accommodate the energy costs resulting from inadequate thermal insulation and inefficient heating systems (albeit wastefully). Similarly where a dwelling meets extremely high energy efficiency standards charges may be manageable within a comparatively small budget (National Energy Action, 2004).

2.5.1 Low income

According to Palmer et al (2008) most of the 1.5 million households in fuel poverty in England in 2005 were also in income poverty. This means that policies to reduce income poverty would at that time have had a direct impact on most households in fuel poverty. However by 2007 the overlap between fuel poverty and income poverty has become less strong. Palmer et al estimate that the rises in energy prices roughly doubled the number of households in fuel poverty, from 1.5 million in 2005 to 3.0 million in 2007. Many of the households moving into fuel poverty during this period will not have been in income poverty. Therefore policies to reduce income poverty now have less proportional impact

Among those in low income, single-person households are more likely to be in fuel poverty than either couples or larger families. Palmer et al (2008) suggest that the reason for the high risk of fuel poverty among single-person households, both overall and among those on low incomes, is that, although their estimated fuel costs tend to be a bit lower than those for other household types, their household incomes tends to be a lot lower. Therefore, fuel costs tend to be a bigger burden, relative to incomes, for single-person households than for larger households.

The overall risk of fuel poverty is higher in rural areas than in urban areas (in 2006, 16% in rural areas compared with 10% in suburban and 12% in urban). Among those on low incomes, however, those in rural areas are much more likely to be in fuel poverty than those in either urban or suburban areas.

Palmer et al (2008) suggests that a major reason for these differences is that rural households tend to live in larger and less energy-efficient properties.

Palmer et al conclude that two of the major causes for concern from a fuel poverty perspective relate to those on low incomes. These are single-person households of working age and those who live in rural areas. This is notable because these two groups have not been the focus for the Government's anti-poverty strategy, which has tended to focus on children, older people and deprived urban areas.

According to Oreszczyn et al (2006) households where there were self-reported difficulties with paying the bills (i.e. not enough money available to pay them) were associated with substantially lower temperatures in the home).

The student population, who generally live on minimal incomes, and in poor housing conditions are likely to be fuel poor. However, this is generally seen as a temporary period of fuel poverty and they are therefore not always associated with fuel poverty statistics (Baker and Starling, 2003).

Low income households find that there are many competing pressures on their finances. There may be other financial needs that are prioritised above fuel bills and therefore they do not spend the amount needed to stay warm (Cole, 2000).

Discomfort and the risk of health problems such as; respiratory infections, bronchitis, heart attacks and stroke have all been shown to increase at temperatures below 18°C, and below 10°C the risk of hypothermia increases, especially for the elderly (Wilkinson, Landon and Stevenson, 2000, in Cole, 2000).

Some low income households use prepay meters by choice to pay for their electricity because of the budgeting it provides. In this case the use of

prepayment meters offer a coping strategy, and are the preferred use, even if that means that overall, a higher price is paid for fuel. However, some users who pay by this method will ration their use of fuel, and then may end up not adequately heating their home. By using this method, users are often exemplified from certain offers and deals available to other customers. (CSE, 2001).

A household's benefit status is commonly used as an indicator of low income as most State benefits are means-tested. Households who are in receipt of Income Support receive very little income from other sources and are only able to meet very basic needs. Therefore the number of claimants of benefits in a household is a good indicator for low income as it allows for differing size of household and circumstances. One problem in the area of income support and benefits is that many people do not claim their full benefit entitlement (Baker and Starling, 2003). In helping to eradicate fuel poverty, it will be necessary to ensure that all fuel poor households, but especially those with a 'vulnerable' status are in receipt of their full benefit entitlement.

2.5.2 Poor housing

Fuel poverty is most common among those who live in private rented accommodation. Averaging from 2004 to 2006, 12% of households in private rented accommodation were in fuel poverty compared to 7-8% in other tenures. Despite their much lower average incomes, those in social rented accommodation are no more likely to be in fuel poverty than owner-occupiers. This is partly because very little social housing is energy inefficient and partly because social housing tends to be small. Both factors lead to very relatively little fuel being required to keep the home warm (Palmer et al, 2008).

How energy efficient the home is has a major effect upon fuel poverty. For example, households not in the poorest fifth but in very energy inefficient homes are more likely to be in fuel poverty than households in the poorest fifth but in homes with above-average energy efficiency. As a result, households who are both in the poorest fifth and in very energy inefficient homes are at a very high risk of fuel poverty (The Poverty Site, n.d.)

Palmer et al (2008) report that for homes with a SAP rating of less than 30, the risk of fuel poverty was 26%, 8% for those with a SAP rating of 30-40, and progressively reducing to 0% for those with a SAP rating of 70 or more. Although only a tenth of all homes have a SAP rating of less than 30, two-fifths of all households in fuel poverty have a SAP rating of less than 30.

2.5.3 High energy price

Palmer et al (2008) report that nearly three-quarters of the reduction in fuel poverty between 1996 and 2005 was due to increased incomes, around a fifth was due to energy efficiency measures and the remainder was due to energy price reductions. However, since 2005, the substantial rise in fuel poverty can be largely attributed to energy price increases. A view of the relative impact of the three main factors on fuel poverty between 1996 and 2006 is provided in Figure 2-8.

In 2005, the energy efficiency charity National Energy Action (NEA), warned that energy prices are the biggest threat to preventing the Government meeting their targets to end fuel poverty (NEA, 2005). A recent estimate suggests that each percentage point increase in fuel prices may push an additional 40,000 households into fuel poverty (Environment, Food and Rural Affairs Committee, 2009). In July 2009 the BBC reported that average domestic fuel bills have more than doubled over the past 5 years (BBC, 2009). A perspective of fuel prices over the past decade is shown in Figure 2-9.

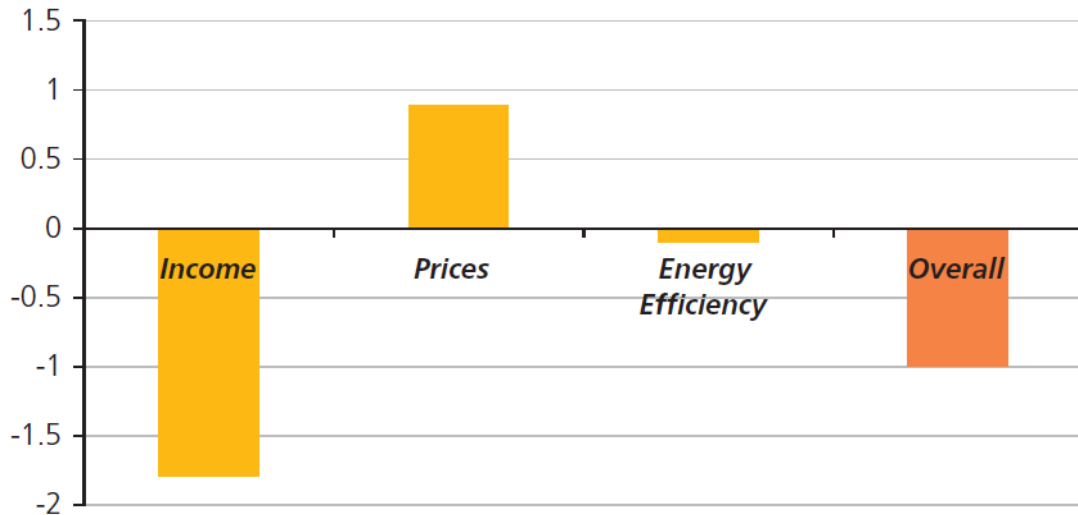


Figure 2-8: Relative effects on change in fuel poverty, 1996-2006 (Source: BERR, 2008)

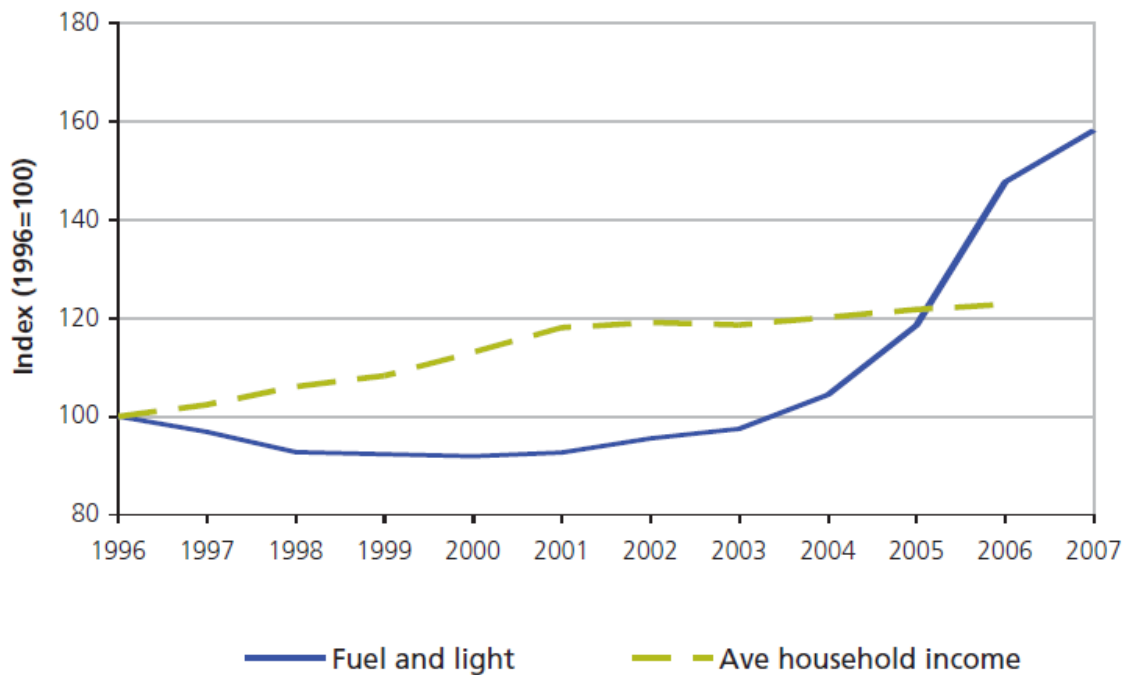


Figure 2-9: Prices (RPI) against income (FRS), 1996-2006 (Source: BERR, 2008)

2.6 What are the impacts of behaviours?

User behaviour is a critical, yet relatively under researched, factor affecting the likelihood of experiencing fuel poverty. It is also important to consider user behaviour as part of the suite of interventions used to tackle fuel poverty as inappropriate behaviours have been shown to cancel out many of the

potential savings gained from the implementation of energy efficiency and other measures.

Milne and Boardman (2000) studied the amount of potential energy savings taken back as an increase in comfort temperature following energy efficiency improvements. They found that the previous temperature of the home before the implementation of energy efficiency measures was the main determinant of how much energy was saved and how much was taken back as extra comfort:

- at 16.5°C, the current average temperature of housing in Great Britain, about 30% of the benefit from energy efficiency improvement is taken as a temperature increase and the rest as an energy saving
- at temperatures as low as 14°C - still frequently found in low-income households - only half of the energy saving will be achieved and the remainder would be taken as a temperature increase
- 20°C is the most likely whole house comfort temperature in an energy efficient house and it is only in these circumstances that further improvements will achieve the full energy saving;

They also found that energy efficiency measures that increase radiant temperature, such as double glazing, enable the occupants to be comfortable at a lower air temperature and thus reduce the degree of take back by up to 20%.

Wright (2004), using qualitative interview data from 64 older adults, found that the beliefs and behaviour of many older householders often contributed to their living in cold homes. A common theme was the conception that younger generations kept their homes far too warm. Several householders worried about their children keeping their own homes too warm, believing that this was unhealthy for their grandchildren because it made them more susceptible to germs and illness. This was despite the fact that many of the older adults

interviewed had health problems that made them sensitive to the cold (e.g. arthritis, strokes, heart problems and diabetes).

Wright found that it was a common practice to turn heating off in winter for at least several daylight hours. This was partly to keep fuel bills down but also because many believed that economizing on heating was a virtue. Wright found that older adults expected to put on an extra jumper or wrap up in a blanket when cold. Approximately one in three respondents reported that they never heated the bedroom. This a figure very similar to that reported in a national stratified sample of hypothermia among older people (Salvage, 1993). It was also common practice to keep a bedroom window open at night even in the coldest weather. Breathing cold air at night was widely believed to be healthy, although Wright reports that health studies have found the stark temperature differences within the home, resulting from this behaviour, increase the likelihood of chest infections and related illnesses.

Wright found that older householders were often unable to distinguish between the many different local authority grant programmes with their individual eligibility criteria. If a previous application for a totally different grant had been unsuccessful, older people tended to assume that there was no point in applying for a grant for insulation or heating.

The study found that the conditions applied to grants for loft insulation could make it impossible for a frail older person to accept. Two householders in Wright's study had successfully applied for a loft insulation grant but had withdraw when they found out that the householder was expected to clear the loft in advance of insulation.

Although there has been an increase in publicity to make people aware that energy efficiency measures in the house makes good sense, the results of a face to face survey of 1500 Irish homes (Healy and Clinch, 2002) showed that 32.3% of energy inefficient households were not aware of the benefits of energy-saving measures, while a further 19% did not know of their existence. Healy and Clinch also found that the 'transactions' costs (the disruption costs

associated with installing the measures) were identified as a reason for not retrofitting energy saving technologies in the home.

Healy (2004) conducted a comparative study of fuel poverty across the EU analysing the relationship between domestic energy efficiency, fuel poverty and health. The study includes an empirical assessment of the reasons why energy efficiency measures are not taken up. One of the principle reasons across Europe was found to be lack of information on the opportunities available to reduce fuel bills.

Darby (2000) provides a comprehensive review of how information on energy consumption can impact upon user behaviour. Her findings are based on a review of 38 studies where consumption feedback has been trialled within home settings. Three types of feedback to domestic consumers were identified: direct feedback in the home; indirect feedback via billing and 'inadvertent' feedback (or learning by association). Inadvertent feedback can result from factors that affect energy consumption in the home, for example, bringing new energy consuming products in the home, changes in the composition of the household or the physical fabric of the house. She reports that direct feedback in conjunction with some form of advice or information gave savings in the region of 10% within four programmes aimed at low-income households. She also highlights that the continued use of prepay meters by those on low income shows the value of direct feedback to those who wish to avoid debt.

The review concludes that metering displays should be provided for each individual household in a form that is accessible, attractive and clear. Alerts that are activated when a given threshold for energy consumption is exceeded may have potential as a means to reduce energy consumption but should not be used without the provision of additional information that enables the household to learn and adapt their behaviours. Darby warns that such inventions should be carefully trialled and evaluated particularly where low-income households are concerned.

She found that Informative billing that provides advice on energy usage in a clear and accessible way, showed potential as a means of raising awareness but should be created using a user centred design process in order to maximize it's usefulness. Similarly Darby concludes that energy audits can provide useful baseline information but care must be taken to ensure that the language of the resulting audit document should fit the needs of both the utility company and the householder.

3 WHAT ARE THE LEGAL, REGULATORY AND STATUTORY ASPECTS AROUND FUEL POVERTY?

3.1 Introduction

The previous section outlined the definition of fuel poverty, and described the three main factors that may contribute to a household being fuel poor: low income, inefficient housing and high or increasing energy prices. In this section, we focus upon the regulatory aspects associated with each of these factors, and discuss the measures in place that facilitate improvement in each of these three areas.

Fuel poverty is a partly devolved issue, involving different targets and strategies for the four devolved administrations. The Government, in the Warm Homes and Energy Conservation Act 2000 (UK, 2000), pledged that fuel poverty should be eradicated in England by 2016 and within all vulnerable households by 2010; the strategy by which this target was to be met was initially laid out in the DTI Fuel Poverty Strategy (DTI, 2001). It has been acknowledged by DECC, however, that this latter target is likely to be missed (HC EFRA 37, 2009).

Within the initial DTI Fuel Poverty Strategy, and in subsequent government publications in this area, a vulnerable household has been defined as one containing older householders, families with children or householders who are disabled or suffering from a long-term illness. The efficiency measures described in this chapter, as provided by Warm Front or under the CERT legislation, are focused upon slightly different tranches of the population – further details of these variations can be found in Annex B.

Key points

- A large proportion of those at risk of fuel poverty are eligible for benefits. The benefits system is complex and these may remain unclaimed. Benefit entitlement checks, as carried out by Warm Front or by energy suppliers, enable consumers to check that they are claiming all available benefits.
- Appliances are heavily regulated under European and UK law; most white goods now have an easy-to-understand guide to their energy consumption. Housing measures must comply with UK Building Regulations, and the efficiency of an entire dwelling is summarised by the now-mandatory Energy Performance Certificate.
- All of the major energy suppliers in the UK now offer at least one social tariff. Such tariffs, although regulated by Ofgem, are part of a number of voluntary initiatives, and must offer sufficient value for money for the relevant set of customers.

3.2 Income and benefit regulation

3.2.1 Available benefits

Those at most risk of fuel poverty are generally those with the lowest income, and are often eligible for financial help via benefits. The UK's benefits strategy is controlled by the Department for Work and Pensions (DWP); the benefits system is complicated, with well over thirty available benefits designed to help different tranches of the population. An Institute of Fiscal Studies report has suggested that these benefits can be naturally divided into six different types (O'Dea et al, 2007):

- Benefits for families with children
- Benefits for the unemployed
- Benefits for people on low incomes
- Benefits for the retired and elderly
- Benefits for sick and disabled people
- Bereavement benefits

Further detail regarding specific benefits, following O'Dea et al (2007), can be found in Annex A.

Administration of specific cases is carried out by Jobcentre Plus for most working age benefits, and by the Pensions Service, for retirement age benefits. Housing Benefit and Council Tax Benefit are administered by local authorities, and most benefits for families are administered by HM Revenue and Customs. Historically, most claims have usually involved a face-to-face meeting or interview with an advisor, but some benefits such as Income Support and Disability Living Allowance can now be claimed online, via the DWP e-service.

As well as benefits administration, Jobcentre Plus is also responsible for monitoring and reporting the performance of its service. This involves a yearly Business Plan, wherein targets for the following year are agreed, and an Annual Report, where accounts are provided and the quality of service for

the preceding year is analysed. Of paramount importance for the current project is the Benefit Clearance Time – the time taken to process a claim. This varies according to the specific benefit under consideration, but overall these targets are between 10 and 15 days. The Jobcentre Plus annual report for the financial year 2008-09 indicates that during the preceding year, all of these targets were met comfortably (Jobcentre Plus, 2009). It is possible, but not likely, that the time for a claim to be processed could impact negatively upon the challenge of lifting households out of fuel poverty within a 100 day period.

All of the benefits described so far are designed to help vulnerable and low-income households, but are not specific to the issue of fuel poverty. There are two additional benefits, which are geared towards helping the more vulnerable members of society to pay their fuel bills.

Winter Fuel Payment

The Winter Fuel Payment was introduced in 1997, and is a tax-free annual benefit paid around November, designed to help the over-60s with their fuel payments in winter. In the winter of 2009/10, this payment will be £250, rising to £400 for those aged 80 and over. This is paid automatically to pension and benefits recipients and is not means-tested.

Cold Weather Payment

The Cold Weather Payment is a small additional payment (£25 in 2009/10) available to the most vulnerable low-income people during periods of very cold weather (defined as seven consecutive days of freezing temperatures). Like the Winter Fuel Payment, this benefit is paid automatically. Further details of the eligibility criteria can be found in Annex B.

The Government classes Winter Fuel Payments as an addition to recipients' incomes, and judge this benefit to be responsible for taking around 100,000 households out of fuel poverty in England in 2006 (Defra/BERR, 2008). However, there has been widespread criticism, notably from the House of Commons Environment, Food and Rural Affairs Committee (HC EFRA 37,

2009), that this payment is given to a significant number of relatively affluent, fuel-rich households. Possible amendments to this strategy include removing the payment for higher-rate taxpayers or making the payment taxable. This would provide an additional budget which could be used to target a different subset of the fuel-poor population.

3.2.2 Making a benefit claim

Claiming benefits is a process generally instigated by the claimant. The standard approach, as outlined by the Government's Directgov website, is usually started by a telephone call to the appropriate department.

- Families with children – Child Benefit Helpline
- Unemployment benefits – Jobcentre Plus claim line
- Low income – Jobcentre Plus claim line
- Elderly – Pension Service helpline
- Sickness and disability – Benefit Enquiry Line
- Bereavement – Jobcentre Plus claim line

In most cases, this is followed by an face-to-face meeting with an advisor, often at Jobcentre Plus. It is usually necessary to prove eligibility for the relevant benefit at this point.

Some of these benefits can now be claimed via the internet. In some cases, this simply means that the appropriate claim forms can be downloaded and printed without the need to visit a local office, but in other cases claims can be carried out wholly online.

These processes require the claimant to be aware of their eligibility for benefits and generally the claimant will initiate any further checks. This is likely to be difficult for the more isolated and vulnerable members of society. It is perhaps not surprising, then, that significant amounts of benefits remain unclaimed: the DWP estimates that between £6bn and £10bn was left unclaimed in the period 2007-08 (DWP, 2008). To reinforce this, Warm Front

figures from a similar period indicate that as many as 30% of households investigated for potential Warm Front action do not claim all of the benefits that they are entitled to, and the average extra benefit entitlement located by Warm Front totalled nearly £1500 per household per annum (Defra/Eaga, 2008).

Earlier academic study (Baker and Starling, 2003) has indicated that poor benefit take-up is particularly notable in older people and also within rural communities, the latter possibly because of the geographic isolation of these areas.

Although this is not necessarily a regulatory issue, ensuring a complete benefit claim is an important part of any credible and integrated fuel poverty strategy. Currently, this strategy is rather disjointed, and a large number of different parties can help with claims. These range from companies who directly carry out benefit entitlement checks (BECs) or provide benefit advice for households, to local or informal services to raise awareness of the available measures; examples of these parties are shown below (these roles are described in more detail in Chapter 5):

- Warm Front (BECs are administered by eaga Advice Services)
- Energy suppliers, as part of social initiatives
- Advice services (e.g. Home Heat Helpline, Citizen's Advice)
- Local council officers
- Housing associations and improvement agencies
- Hospital and medical staff
- Social and community care workers
- Charity workers
- Drop-in centres
- Family, friends and neighbours

A BEC should inform the customer of their eligibility and the processes required to claim the benefits in question. In some cases, face-to-face help is available to help the most vulnerable to fill in the relevant claim forms.

The role of social and community care is crucial here. Each person who may be eligible for community and social care undergoes an assessment to determine which care measures are required – one obvious way in which this process can be instigated is if the person is admitted to hospital. Government guidelines suggest that part of this assessment should be to determine what benefits are available, and to provide help in claiming these benefits. If these households do ultimately become the recipients of care facilities, this provides an important interaction point with the social services.

Clearly, for the most socially excluded and isolated members of society, interaction with these different parties will not happen regularly, and they may be completely unaware of their benefit eligibility. Such people are difficult to find and difficult to help. This area highlights the importance of local initiatives, such as Warm Zones. For example, the Kirklees Warm Zones scheme³ involves a street-by-street visit to every household in the borough; this is mainly designed to deliver efficiency measures to all suitable housing, but part of the initiative is to provide BECs through a relationship between the local council and Citizen's Advice Bureaux.

3.3 Energy Efficiency regulation

The second of the three measures discussed in treating fuel-poor households is to improve the household energy efficiency. Usually the most effective efficiency measures are whole-house insulation techniques such as loft and cavity-wall insulation, but the precise fuel poverty definition means that lighting, storage and cooking efficiency also warrant some attention.

3

<http://www.kirklees.gov.uk/community/environment/energyconservation/warmzone/warmzone.shtml>

Many of the larger efficiency measures require a large investment upfront, and for this reason they tend to be unaffordable for fuel-poor households without significant third party help.

3.3.1 Regulation of funding and third party help

There are several different sources of third party help. Energy suppliers provide a means for consumers to obtain efficiency measures, mainly funded through the mandatory Carbon Emissions Reduction Target, but also through voluntary social initiatives. The most familiar source is the Warm Front scheme, which is directly funded with government money and designed to focus upon vulnerable members of society who are at risk of fuel poverty.

Carbon Emissions Reduction Target

Since 1994, statutory obligations have been placed upon energy suppliers to achieve a reduction in energy usage by encouraging households to take up efficiency measures. The most recent iteration – the Carbon Emissions Reduction Target (CERT) – commenced in April 2008 and shifts the emphasis of this obligation from energy reductions to carbon reductions. The details of the requirement are described in the Electricity and Gas (Carbon Emissions Reduction) Order 2008 (UK S.I. 188, 2008). The targeted carbon savings which each supplier must achieve are related to the size of the supplier's customer base.

The key message is that the initiative is designed to deliver lifetime carbon reductions of 154 MtCO₂ between 2008-11. Financially, this corresponds to an obligation on energy suppliers of around £2.8bn over the three year period. It is also specified that suppliers must focus 40% of activity on a Priority Group of vulnerable households. In fact, this carbon reduction target was uplifted by 20% as part of the Home Energy Saving Programme (HMG, 2008), equating to around £560m of additional supplier investment over three years.

The CERT programme is not specifically designed to help the fuel-poor, but rather to contribute towards the UK's carbon reductions. However, the priority group are predominantly those at risk of fuel poverty, so there are clear

potential benefits to the fuel-poor. Further discussion of this priority group may be found in Annex B..

Community Energy Savings Programme

The Community Energy Savings Programme (CESP) is a more recent obligation placed on energy generators and suppliers. Although the types of measures are similar to those generally utilised by Warm Front and CERT-funded activity, the primary focus of CESP measures should be upon areas of low income; specifically, the 10% most deprived Lower Super Output Areas. The details of this requirement are described in the Electricity and Gas (Community Energy Saving Programme) Order 2009 (UK S.I. 1905, 2009).

CESP is intended to deliver carbon reductions of around 19 MTCO₂, which corresponds to an investment of around £350m over three years. The scope of these investments is fairly wide, ranging from district heating systems to a simple home energy advice package. Generally, these programmes are employed by developing relationships with local authorities.

Warm Front

Warm Front is a national government scheme, which facilitates the take up of efficiency schemes for vulnerable households within the privately rented and owner-occupied market. Grants are available up to £3,500 in value (£6,000 for oil systems), and these may be used against a range of efficiency measures. Government funding for this scheme has been set at approximately £874m over the period 2008-11. This actually involves a cut in funding relative to the £350m invested in the period 2007-08.

Decent Homes

The Decent Homes standard is a minimum standard below which homes should not fall. A Decent Home is defined as a dwelling which

- meets the current statutory minimum standard for housing
- is in a reasonable state of repair
- has reasonably modern facilities and services

- provides a reasonable degree of thermal comfort

The Government's strategy has been primarily focused upon social housing, and has a target that 95% of all social housing should be made decent by 2010. Funding to make homes decent can be either directly from Government, or through partnerships with the private sector, such as private finance initiatives (PFIs).

Social initiative agreement

In the April 2008 Budget (HM Treasury, 2008), Government proposed that energy suppliers would increase their level of voluntary funding of social initiatives, focusing upon their more vulnerable customers, up to a level of around £150m per year by 2010/11 – this proposal was agreed shortly after. This programme is monitored by Ofgem, and energy suppliers must periodically report on their spend to the regulator. The majority of this spend has been on social tariffs, but efficiency measures are also carried out using this funding.

There are several additional schemes and initiatives – details of these may be found in subsequent sections of this report.

Approved measures

The measures employed need to be approved for usage within the scheme in question. Warm Front has a fairly restrictive set of conventional insulation technologies available to it, which limits the scheme's effectiveness in hard-to-treat homes. There are a large set of measures which are currently approved under CERT; additional energy-saving innovations can be approved on an ad-hoc basis through Ofgem.

3.3.2 Regulation of Appliances and Efficiency Measures

Labelling – White goods and small appliances

The first aspect of energy efficiency to consider is that of appliance efficiency. European Union Directive 2005/32/EC (EU, 2005) requires that certain

appliances display a rating certificate which summarises their efficiency and electrical consumption, along with other key performance indicators. The headline figure of such certificates is a rating letter from A++ to G, denoting highest to lowest efficiency.

This rating certificate may be found when purchasing new refrigerators, freezers, fridge-freezers, ovens, dishwashers, washing machines, tumble driers, light-bulbs, air conditioners and cars. Although the details of how the grading is calculated may not be obvious to a potential purchaser, the grade provides an easy method of comparison between different products.

As part of a voluntary initiative, incandescent light-bulbs are gradually being withdrawn from sale in the UK. It is intended that these bulbs should be fully phased out by 2011. An EU directive in this area has recently been set up (EU, 2009a).

These measures are important in that measurable fuel savings can be achieved by upgrading from inefficient to efficient appliance. For example, a new A-grade fridge-freezer typically consumes 300-400 kWh/year, while an older appliance can consume double this amount. Assuming an electricity price of 10p/kWh, this equates to savings of around £30-40 per year.

Labelling – Whole-house measures

Boiler, window and insulation efficiencies are not standardised via an EU rating system, but are subject to UK regulation schemes. For boilers, EU efficiency guidelines are under discussion, specifically the labelling scheme (EU, 2009b). The UK uses the Seasonal Efficiency of Domestic Boilers in the UK (SEDBUK) system (SEDBUK, n.d.). This is visually similar to the EU labelling approach, with a rating from A-G; in this case, that letter simply corresponds to the approximate thermal efficiency of the boiler, based upon a typical yearly usage of the boiler. The SEDBUK rating is an integral part of the SAP 2005 analysis used in determining whole-house efficiency.

Replacing inefficient boilers is acknowledged as one of the most effective ways of achieving fuel savings. Newer A-grade condensing boilers may be as high as 90% efficient, while older boilers such as back boilers may have a thermal efficiency as low as 60%. The Energy Saving Trust estimate that replacing a G-grade boiler with an A-grade boiler could achieve savings of over £200 per year.

The situation with window installations is similar – the UK has a voluntary regulation scheme, administered by the British Fenestration Rating Council (BFRC) (BFRC, n.d.). Like the SEDBUK system, the BFRC system has been chosen to be visually similar to EU energy labelling, with a headline A-G rating summarising the efficiency of a specific unit. Clearly, the energy losses associated with a dwelling's glazing depend very much upon the sites and quantity of windows, so it is difficult to estimate the heat loss simply using this rating. The BFRC is generally considered to be primarily a comparison tool for consumer information.

The rating itself is a fairly complicated measure, based upon a calculation involving the energy factor per square metre, U-value⁴, heat leakage and solar heat gain factor. All of these different variables must also be included on the certificate. As one might naively expect, the very best efficiencies are achieved in gas-filled triple-glazed windows (see, for example, MTP, 2007).

Building Regulations

Home improvements and new build homes must comply with Building Regulations and the associated Approved Documents (UK S.I. 2531, 2000 and related amendments). This regulation provides technical requirements or guidelines on the types of heating, glazing and insulation which are permitted to be installed. For replacement work, the requirements include:

⁴ The U-value represents how well a given element transmits energy from one side of the element to the other, and is measured in watts per square metre per Kelvin

- Windows should have a U-value no greater than 2 W/m²K. In practice, this discounts single-glazed windows and many double-glazed windows
- Replacement boilers should be condensing boilers of SEDBUK rating A or B. If it is not viable to install such a boiler, then a minimum efficiency must be satisfied, as specified in the Domestic Heating Compliance Guide (ODPM 2006)
- Renewal or virgin installation of loft insulation must provide at least 270mm of mineral fibre or cellulose
- Cavity Wall Insulation (CWI) material must be suitable for the particular wall construction under consideration. A guideline U-value for CWI elements is 0.55 W/m²K

CWI is defined as notifiable building work within Building Regulations. This means that a Building Control Notice must be submitted for this work. If the installer is registered with the Cavity Insulation Guarantee Agency, they will usually submit this notice themselves.

Planning Permission

Unless the property is listed or within a conservation area, planning permission is not usually required when installing efficiency measures which leave the property externally unchanged. Planning permission is also not usually required when replacing external glazing or doors. However, there are certain standards which must be met when such work is undertaken. In practice, this means either than the installer must be registered within a competent person scheme, or the work must be certified by an approved inspector. In both cases, a certificate showing the compliance of the work with Building Regulations will be issued. Competent person schemes include the Gas Safe Register (formerly CORGI), the Fenestration Self-Assessment Scheme (FENSA), the Oil Fired Technical Association (OFTEC) and many others.

Planning permission is currently required for most microgeneration technologies, although flush solar panels do not require planning permission. Timescales associated with a planning permission decision tend to be around five weeks, which may impact on the feasibility of microgeneration installation for the current project. For conventional insulation measures, the major threat to any fuel poverty measures is the availability of competent installers (Defra, 2007).

The situation regarding air source heat pumps is less clear. Currently, a planning consultation must take place, mainly to address noise issues. It is likely that legislation will be set up shortly to ensure that planning permission is not required for these devices.

Energy Performance Certificates and Standard Assessment Procedure

The current and potential efficiency of an entire dwelling is summarised in the dwelling's Energy Performance Certificate (EPC). Consumers selling property in England and Wales must make a Home Information Pack (HIP) available to any prospective purchaser as soon as the property is placed on the market. Every HIP must contain an up-to-date EPC (or Predicted Energy Assessment if the dwelling is not yet physically complete). Furthermore, since October 2008, an EPC has been required whenever a building is built, sold or rented out.

As specified in Building Regulations, EPCs must be issued by an accredited assessor. Generally, EPC assessors use the Standard Assessment Procedure (SAP) 2005 rating to critically analyse the efficiency of the dwelling, representing the entire efficiency of the dwelling by a single number.

SAP 2005

The SAP procedure (BRE, 2008) is based upon the BRE Domestic Energy Model (BREDEM). This assessment procedure involves evaluation or measurement of a large number of different properties of the dwelling, including

- Construction materials of the dwelling

- Insulation and ventilation
- Heating system type and efficiency
- Solar gains
- Dwelling measurements

The procedure culminates in a calculation to determine the SAP rating, which generally lies between 1 and 100 (although this score may be greater than 100 for dwellings which are net exporters of energy). This SAP rating is then used to generate an A-G classification for the EPC – the resulting EPC looks similar to an EU energy label. Furthermore, the EPC must contain the potential SAP rating if a number of efficiency measures are carried out. Figure 3-1 shows measured and potential SAP ratings for an example efficiency rating graph.

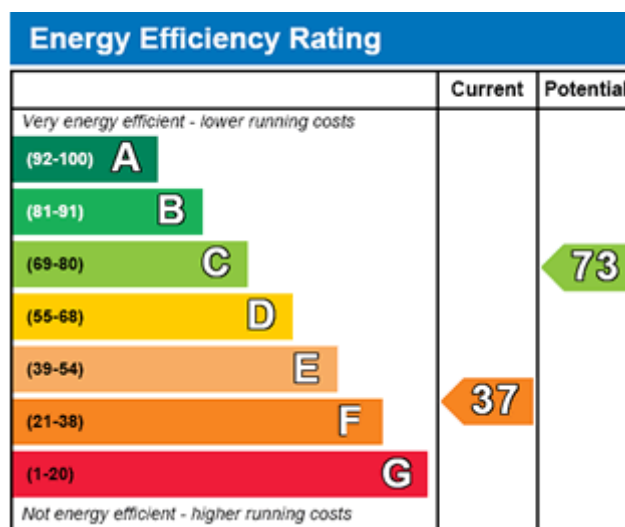


Figure 3-1: Example of Energy Efficiency Rating graph, as found within an EPC (Reproduced from Directgov website, under terms of Crown Copyright)

One important use of the SAP rating is to judge the effectiveness of Warm Front measures. For the period 2007-08, the average SAP rating for a house which received Warm Front measures was increased from 42 to 57. It is also used in analysis of National Indicator 187, which will be discussed later in this report.

Recently, the Energy Saving Trust have recommended that the sale or rent of F and G-rated dwellings should be banned, starting in 2015 (Energy Saving Trust, 2009). This would mean that the least efficient homes must either be treated or demolished.

3.4 Social tariffs

Following proposals in the April 2008 Budget (HM Treasury, 2008), the government and energy suppliers recently agreed (Defra, 2008) that suppliers should contribute an increased level of funding to social initiatives, reaching a total of £150m in 2010-11. A number of different initiatives may count towards this, including trust funds, benefit entitlement checks and, of current interest, social tariffs. Ofgem estimate that, as of December 2008, approximately 800,000 customers benefited from a social or discounted tariff (Ofgem, 2008).

The social initiatives are administered and monitored by Ofgem, and each supplier must report on their spend to the regulator. Ofgem periodically summarise the energy suppliers' spend on social initiatives, paying particular attention to the value offered by the various social and discounted tariffs (Ofgem, 2009). One important feature that Ofgem manage is the definition of a social tariff, and this is currently thus:

For a supplier's tariff to qualify as a 'social tariff' it must be at least as good as the lowest tariff offered by that supplier to customers in that region on an enduring basis – regardless of that customer's payment method and includes online tariffs

Previously, this definition was looser: the requirement was merely that any social tariff should be at least as good as the same supplier's standard direct debit tariff – this change of definition means that some products previously deemed to be social tariffs are no longer so. Ofgem now categorises these as discounted tariffs. There is still some debate regarding the precise definition of a social tariff – the charity National Energy Action suggests that the definition should go further and elucidate the ancillary services offered to such

vulnerable customers, although Ofgem's current preference is to encourage product innovation rather than standardisation.

The energy supplier contributions are voluntary, although all of the major UK energy companies do currently operate one or more social tariffs as part of the agreement. In the recent UK Low Carbon Transition Plan (HM Government, 2009), published by the Department for Energy and Climate Change, the Government has expressed intent to move this agreement to a statutory agreement once this voluntary agreement expires. The Fuel Poverty Advisory Group (FPAG) have suggested that the entitlement criteria should mimic the Cold Weather Payment eligibility criteria, to ensure that the most vulnerable customers can access these tariffs (FPAG, 2009).

Suppliers are free to devise any eligibility criteria and pricing structure that they see fit. Table 2 contains a summary of the different social and discounted tariffs offered by the major energy suppliers – clearly, the primary focus is upon elderly and low-income customers. Along with the actual energy prices, a number of ancillary services are often made available to customers on these tariffs, such as benefit entitlement checks. Interestingly, only two of the suppliers use the phrase 'social tariff' in their online description of the product; furthermore, the marketing strategy, placement and availability of information regarding these products varies between suppliers.

There is no cross-industry agreement regarding a standardised price point of these tariffs. As a result, it is possible for the social tariff of one supplier to be more expensive than the standard rate of a different supplier, although the latter may be inaccessible to vulnerable consumers if, for example, payment through direct debit is required. Various parties, including FPAG (FPAG, 2009) and Consumer Focus (Consumer Focus, n.d.), believe that minimum standards should be mandated for these tariffs and the eligibility criteria should be set by Government, rather than leaving these choices in the hands of energy suppliers

Current views regarding the effectiveness of social tariffs are mixed, as surveyed by Baker (2006). The report revisits the paradoxical situation that a consumer on a social tariff may still pay more for their energy than the standard rate of a rival energy supplier, and notes that this is inevitable if a minimum price point is not mandated. The report also highlights alternatives to social tariffs, such as fuel vouchers, although this particular measure is unpopular with the surveyed interest groups.

Supplier	Tariff	Target	Ancillary benefits	Comments
British Gas	Essentials Support	Low income and means tested benefits	Signposting to debt advice. EE advice	Direct hyperlink to Essentials programme is on BG's front page, at www.britishgas.co.uk . Essentials Combined described as a social tariff
British Gas	Essentials Safe and Sound	Elderly or disabled customers	EE advice and charity support	
British Gas	Essentials Combined	Both of the above	Always lowest tariff, irrespective of payment method	
EDF Energy	Energy Assist	'Vulnerable' customers	Discounted tariff, EE advice and measures, BEC	Energy Assist described as a social tariff. Details linked through Sustainability header
E.ON	StayWarm	Dual fuel customers over 60	Fixed price for 12 months for energy service	Tariffs not described as social tariffs. Details linked through Products & Services
E.ON	Age Concern	Elderly customers	An additional cold weather payment, EE advice, free CFLs	
E.ON	WarmAssist	60 or over and receive Pension Credits	15% discount on standard prices	
Npower	Spreading Warmth	Elderly or low income families or sick/disabled	Cheapest enduring tariff. Additional services, safety checks, EE advice	Direct hyperlink to Spreading Warmth on front page. Not described as a social tariff
Scottish Power	Fresh Start	60 or over and receive certain benefits	Equalises to lowest SP price in area, free EE advice and BEC	Linked via Product Information. Not described as social tariff
Scottish and Southern Energy	energyplus Care	Spend over 10% of total household income on fuel bills	Lowest cost tariff, EE advice and measures, BEC, safety checks	Linked through Southern Electric website, via Customer service. Not described as a social tariff

Table 2: Social and discounted products offered by the major UK energy suppliers, as of August 2009

3.5 Other legal and regulatory measures

3.5.1 Financial measures

Banking measures are one area where regulation is present to help consumers at risk of fuel poverty. The causes and impacts of financial inclusion will be addressed in detail later in this report, but we shall briefly describe the two main measures which have been put in place to help deal with the problem of financial inclusion.

Usually the best priced non-social tariffs require bills to be paid via direct debit or online. These tariffs are thence unavailable to customers who do not have a bank account, either because they are unable to open an account or because they choose not to. To pay their energy bills, many such customers have no choice but to use a prepayment meter, and as such are usually paying more for their energy than is necessary. The Financial Services Authority (FSA) estimate that around 2 million adults in the UK do not have a bank account; Government is keen to reduce this number.

Basic Banking Accounts (BBAs) were introduced in 1999 as a widely available and accessible bank account, with the risk of default minimised. It is not compulsory, but most UK banks offer these accounts. The FSA and the Banking Code manage the guidelines regarding these accounts, but generally such accounts allow direct debit transfers, access to cash via the Post Office and ATMs. BBAs do not provide overdraft facilities (although some accounts provide a 'buffer zone' to enable all funds to be withdrawn at ATMs), and do not provide a cheque book. However, this is sufficient to enable most of the lower priced tariffs to be accessible.

The main sticking-point for take-up of these accounts is the customer verification process. Money Laundering Regulations dictate that a customer's identity must be verified on the basis of reliable documentation. There is no legal framework of how this identification should occur, but many UK banks follow a 'Know Your Customer' approach wherein proof of identity and proof of address must be provided separately. Some parts of the population (for example, the elderly (Age Concern/Help the Aged, 2009)) may not have this identification and as such cannot open a BBA.

An alternative to opening a fully-fledged bank account is offered by the Post Office, and this is the Post Office Card Account. This is a very simple account which is used to receive benefits. It is administered and operated by the Post Office, partly because of the convenience offered in rural areas. Currently,

there are around five million such accounts open, although not all of these correspond to unbanked consumers.

The primary aim of this service is to allow people to cash some (but not all) benefit payments over the counter. Wages cannot be paid into the account, and direct debits and standing orders cannot be set up. The contract for this service was recently renewed, and a number of minor changes proposed. These changes are not related to the functionality of the account, but rather to the ease of opening.

3.5.2 Fuel Direct

Fuel Direct (now known as the DWP Third Party Deduction system) is a last-resort method of payment for benefit-receiving consumers with major budgeting difficulties. It requires the agreement of both the consumer's energy supplier and the DWP, with the result being that energy costs and debt recovery costs are deducted directly from benefits. The use of Fuel Direct has declined significantly, with fewer than 50,000 consumers utilising this service recently compared with over 300,000 in the mid 1990s. This measure should not directly impact upon an individual household's fuel poverty ratio as it involves no additional income and no discount on energy costs, although it is conceivable that it could influence an individual's behaviour.

4 WHAT CAN BE LEARNED FROM WORK TO DATE TO ERADICATE FUEL POVERTY?

4.1 Introduction

Having looked at the legal, regulatory and statutory aspects around fuel poverty in the previous section, we now review the measures that did work (and didn't) in alleviating fuel poverty, whether there are any 'easy' holistic solutions, the challenges to be overcome and finally the question of how we measure the impact of interventions.

Key Points

- Effectiveness of schemes offering 'staple' energy efficiency measures is limited due to technical, behavioural, socio-cultural and regional factors.
- 'Advanced' measures (low/zero carbon technologies) for Hard To Treat (HTT) dwellings need to be developed and installed in a cost-effective way.
- Social measures that include raising consumer awareness through Smart Metering, clip-on visual display units (VDUs) and community engagement could reduce the 'take-back' process and help achieve the desired targets of reducing energy consumption.
- Challenges of a fiscal (monetary help to reduce 'left-over' fuel poverty), technological (need to develop cost-effective low/zero carbon technologies) and social (re-housing the old and vulnerable in energy efficient stock and demolishing energy inefficient stock) nature remain to be addressed.
- Temperature monitoring of all habitable rooms, objective and subjective evaluation of thermal comfort, assessment of pay-back time of installed measures and the robustness of current measures in addressing future climate change all need to be reviewed in order to assess the full impact of the interventions to alleviate fuel poverty.

4.2 What measures did work/didn't?

The government is committed to removing all vulnerable households from fuel poverty by 2010 and all others in England by 2016. It has implemented several policies and measures since 2001 to tackle the issue along with a range of stakeholders (DTI, 2001). These measures include national programmes like Warm Front in England, Home Energy Efficiency Scheme in Wales, Warm Deal and Central Heating Programme in Scotland, Warm Homes and Warm Homes Plus Schemes in Northern Ireland, Carbon Emissions Reduction Target in Great Britain and the Decent Homes and Scottish Housing Quality Standard. Area-based measures at local and regional level have also been put in place and these include the Warm Zones in England, Low Carbon Buildings Programme in England and Wales, Community Energy Efficiency Fund in England, Local Authority Indicators in England and Wales and Helping households off the gas grid in Great Britain.

4.2.1 Staple Energy Efficiency Measures

The aforementioned government schemes to tackle fuel poverty focus primarily on 'staple' energy efficiency measures. These primarily include wall and loft insulation, draughtproofing, efficient central heating systems, double glazing, energy efficient lighting and energy efficiency advice. Through these staple measures, Warm Front assisted houses have seen an improvement in average energy efficiency (SAP) of 15 points, from 42 to 57 (Defra, 2008). However findings by the Warm Front Study Group (Hong, Oreszczyn et al, 2006) suggest that measures like cavity wall and loft insulation have reduced the space heating fuel consumption by only 10% in centrally heated properties and 17% in non-centrally heated properties as against the theoretical 49%. This has been primarily due to difficulty in insulating 100% of walls and roofs, increased air infiltration due to introduction of central heating system, behavioural changes resulting in window left open for longer periods and 'take-back' process initiated through improved thermal comfort.

On the other hand, a Centre for Sustainable Energy (CSE) report on 'Quantifying Rural Fuel Poverty' (Preston and Baker, 2006), points out that Warm Front schemes have seen a lower take up in rural areas due to lack of information, 'cultural factors' associated with rural population, marketing difficulty due to dispersed population and more importantly few appropriate measures for rural properties available in Warm Front packages. Therefore new approaches to targeting rural fuel poor are required, either as a part of Warm Front schemes or as separate schemes. Recognising this fact and the need to seek alternative low carbon technologies for hard to treat rural properties, the Warm Front scheme have begun a pilot project of installing solar thermals in off-gas properties (Defra, 2008).

4.2.2 Advanced measures (PVs, heat pumps, microgeneration, CHPs)

Advanced measures would include low or zero carbon technologies like heat pumps, microgeneration and renewables (for example, photovoltaics (PVs), solar thermal systems, micro wind turbines, gas CHPs and biomass stoves and boilers). A EEPH study on the use of heat pumps in Hard to Treat homes (Pitcher, 2005) indicates that heat pump systems could be effective, but only in well insulated properties and hence should not be seen as an alternative to insulation, particularly in hard to treat solid wall properties. The study further suggests that although heat pump systems are likely to provide the lowest fuel running costs in an un-insulated 'hard to treat' property that does not have access to mains gas, they are not low enough to eliminate the risk of fuel poverty if a low income household is living there. Hence additional fiscal measures in form of grants would be required in such instances.

Distributed generation systems have the future potential to further improve access to affordable energy for low-income households. However, for it to become a part of cost-effective measures, central and local governments, housing associations and energy suppliers must actively take up the potential to provide microgeneration in various ways (Walker, 2008).

A report prepared by BRE (Henderson, 2004) on the comparison of running costs for different heating options in hard to treat flats suggests that CHP

systems have the potential to deliver significantly lower annual running costs depending on the unit price received for the electricity generated. In the case of non-CHP systems, a system powered by communal gas fired boilers would give the lowest running costs. Electric storage heating would incur the highest running costs.

4.2.3 Social measures – raising awareness amongst the fuel poor

Besides the technological and fiscal measures, social measure that raise the awareness of fuel poor households towards help available through various schemes as well as ways to reduce energy consumption could play a significant role in reducing fuel poverty.

The Department of Health and Ofgem and a number of organisations are involved in making vulnerable households aware about the help available to reduced their energy bills. Schemes include The Fuel Poverty Energy Summit hosted by Ofgem and the Department of Health's continued commitment to the Keep Warm, Keep Well Campaign. The Government and energy companies have also launched a joint information campaign entitled 'Save Money, Save Energy' which includes a national TV and press information campaign to publicise the help available to households.

A 'real-time' awareness of energy consumption, through smart meters and clip-on visual display units could help reduce energy consumption by instigating an 'energy cautious' approach in the consumer. Recent research into the energy savings that could be achieved by smarter meters or real-time displays suggests a 5–10% reduction in consumer energy demand, which equates to an overall saving of about 2% of UK energy use (DTI, 2001). In addition to energy savings, smart meters and clip-on visual display units could also help reduce consumer uncertainty about billing, facilitate microgeneration, and reduce the need for more expensive pre-payment meters, which could be an important step in combating fuel poverty (Baldock, 2006).

However, not only is the installation of smart metering technology in the domestic sector currently cost-prohibitive (DTI, 2007), but technological hurdles like increased network traffic between utilities and consumers and the need for a high-speed internet connection, together with managerial and legislative barriers associated with the installation and maintenance of smart meters prohibit a cost-effective uptake of this technology (Burgess J and Nye M, 2008).

4.3 Are there any ‘easy’ holistic solutions available and what are the challenges to eradicate Fuel Poverty?

Though the primary factors affecting fuel poverty are income, fuel prices and energy efficiency of houses (DEFRA, 2001), the risk of fuel poverty varies among different groups of people by income, work status, vulnerability, deprivation of area, household type, number of people in household, tenure, type of area (urban or rural), geography, SAP rating (average energy efficiency of the house), under occupancy, floor space and fuel payment methods (Palmer et.al, 2008). The diversity of these risk factors requires an approach which consists of a variety of measures, tailored to the specific requirements of each risk group and their combinations, thus not making it possible to have any ‘easy’ holistic solutions to eradicating fuel poverty. It would thus be necessary to adopt a three step approach, starting with improving the energy efficiency of the dwelling (SAP rating) through ‘staple’ measures (cost-effective fabric improvements such as cavity, loft insulations, draughtproofing, double glazing and energy efficient heating system, heating controls, lighting and appliances), followed by advanced measures (renewable and low zero carbon technologies like PVs, solar thermals, microgeneration, CHPs, heat pumps) and finally fiscal measures to alleviate the remaining portion of fuel poverty. However challenges of a fiscal, technological and social nature still remain in efforts towards eradicating fuel poverty.

4.3.1 The fiscal challenge

Analysis by Preston et al (2008) suggests that application of proven fuel poverty measures would still leave 29.1% of today’s fuel-poor households in

fuel poverty. Thermal improvement packages cannot do enough to bring these households under the 10 per cent threshold, which defines them as fuel poor. Severe under-occupancy, insufficiently scope of improvements due to listed conservation status and hard to treat properties are the main factors responsible and an additional £1.4 billion in income help each year at end-2006 fuel prices will be required to bring them out of fuel poverty.

4.3.2 The technological challenge

The modelling work on the existing housing stock undertaken by Preston et al.(2008) shows that further technological developments are required to alleviate the impact of future fuel price increases on the fuel poor, without having to resort to large fiscal measures. Their modelling work of 'cost-effectiveness of renewable and low carbon technologies' reveals that PVs would not pay for themselves in their lifetime at 2006 prices. If capital costs of PVs were reduced, it would provide fuel-poor households with free electricity for parts of their needs.

The Energy Analysis Focus Report (BRE, 2008) shows that households living in dwellings that are particularly hard to treat are more likely not to be able to keep their living room warm due to high heating costs, with the worst categories being 'high rise flat and solid wall' and solid wall and off gas and no loft'. The study further suggests, that while 81% of the HTT stock has the potential to have some 'staple' or cost-effective fabric energy efficiency measures installed, the remaining 1.6 million dwellings are left without such options. While it may be relatively easier to achieve cost-effectiveness in PV technology through mass deployment across almost all types of properties, 'bespoke' technologies developed specifically for listed properties and 'off-gas' properties may not be able to achieve the same extent of cost-effectiveness.

An example of the scale of the technological challenge is provided by solid-wall housing, which represents much of the housing stock from before the 1930s. There are estimated to be nearly seven million solid-wall dwellings in the UK. Figure 4-1 and Figure 4-2 provide an overview of the geographical distribution of these homes.

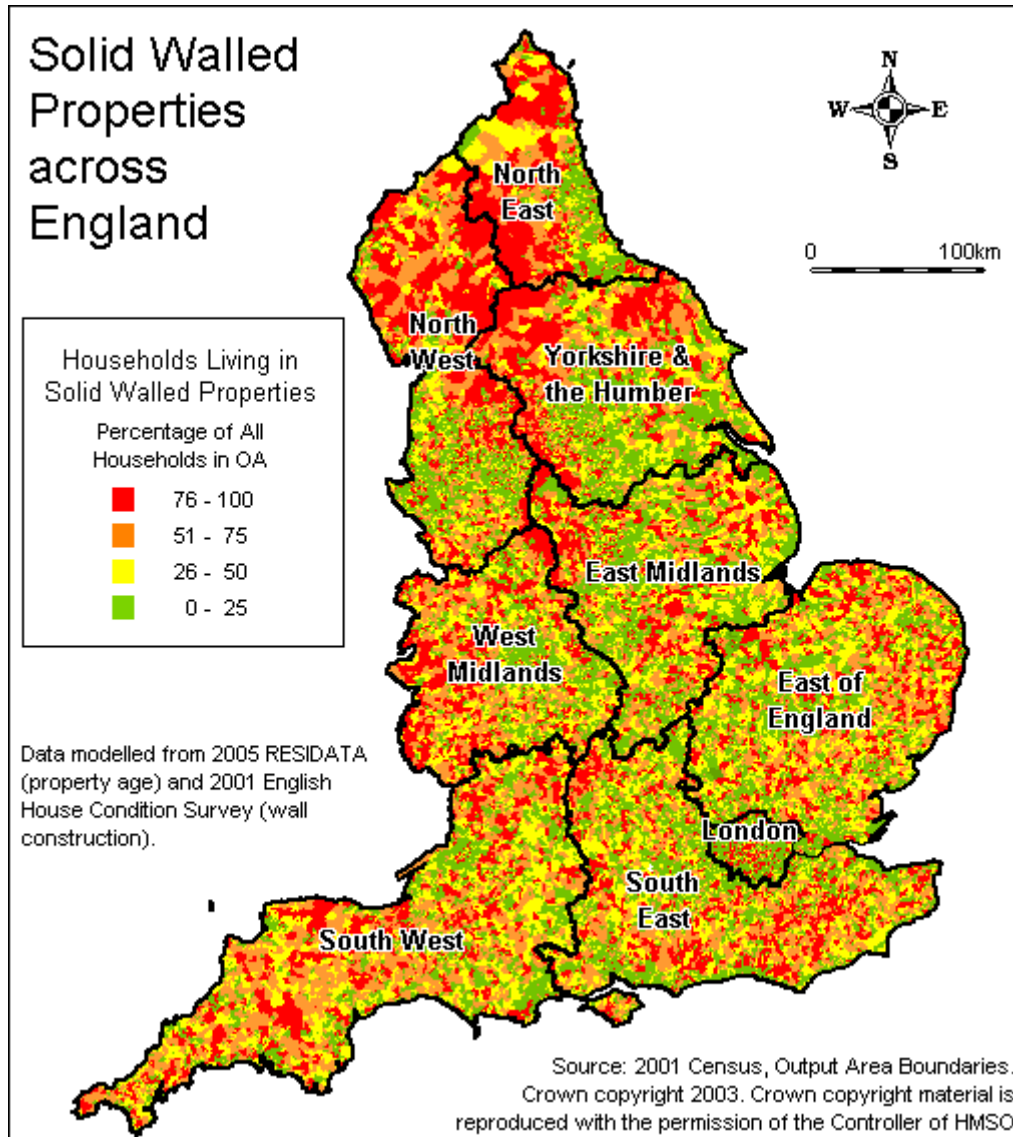


Figure 4-1: Solid Walled properties across England (Source: <http://www.fuelpovertyindicator.org.uk>)

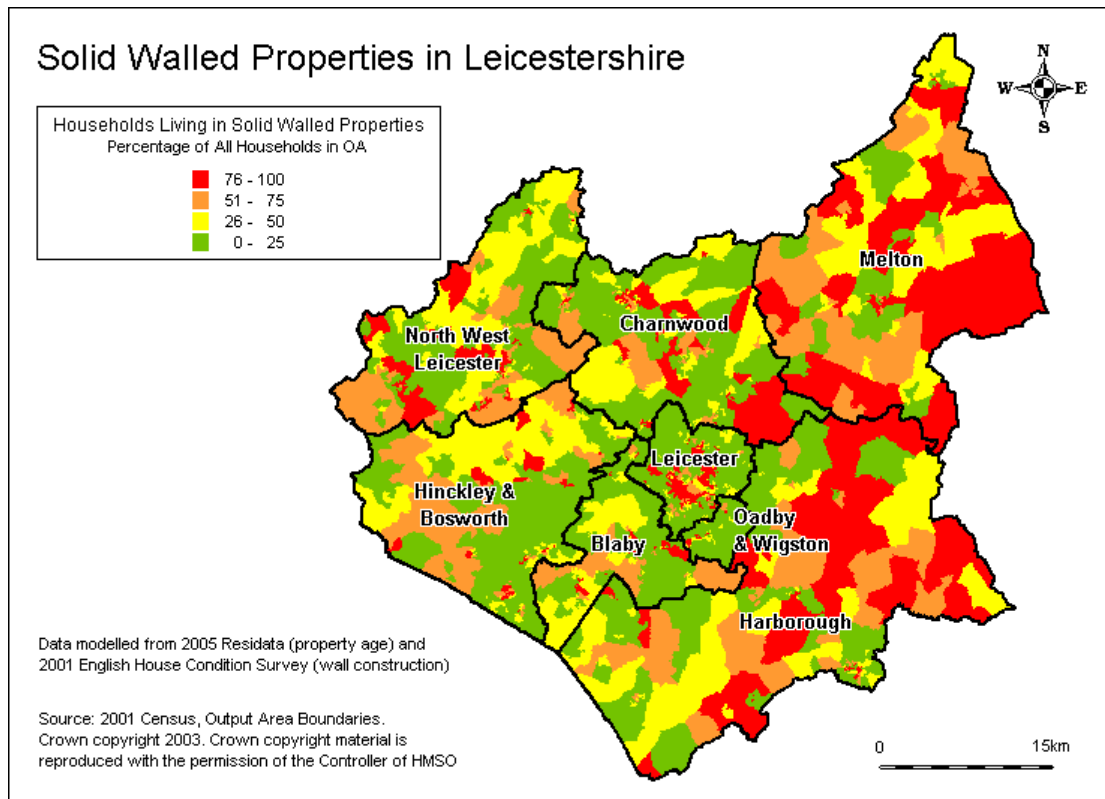


Figure 4-2: Solid Walled properties in Leicestershire (Source: <http://www.fuelpovertyindicator.org.uk>)

4.3.3 The Social Challenge

With an ageing population, under occupancy is a major cause of fuel poverty and households over the age of 60 living in under-occupied homes will be at significantly higher risks of being fuel poor even after applying the current fuel poverty measures. It would therefore be sensible to encourage elderly or low income households to move into new, purpose built accommodation that are built with good standards of energy efficiency (Roberts 2008). Of course this could have a significant impact on the social life of these householders but, conversely, could benefit them financially and provide carbon savings in the long run. In such a scenario, the least thermally efficient dwellings, as pointed out by Boardman et al. (2005), could be replaced by new highly efficient stock. This would have a disproportionately beneficial effect on the fuel poor. However this would be a serious challenge given that demand outstrips supply in the UK housing market.

4.4 How do you measure the impact of interventions?

Having employed various measures to tackle fuel poverty, it is important to measure and assess the impacts of those measures to ensure that fuel

poverty is alleviated. While objective assessment would include the monitoring of internal temperatures, thermal comfort and reduction in energy consumption, subjective assessment will include the state of thermal comfort as reported by the householders.

4.4.1 How does it feel? Impact of interventions on internal temperatures

The internal temperature is the main determinant on the amount of benefit from energy efficiency measures that will be taken as an increase in comfort rather than as an energy saving. At 16.5°C, the current average temperature of housing in Great Britain, about 30% of the benefit of an energy efficiency improvement would be taken as a temperature increase and the rest as an energy saving. 20°C is the most likely whole house comfort temperature in an energy efficient house and it is only in these circumstances that further improvements will achieve the full energy saving. Living room temperature is not a good indicator in the UK of whole house average temperature, as a warm living room may be found in an otherwise cold house, particularly in low-income households without central heating (Milne, Boardman 2000).

4.4.2 How much less energy do I need? Impact of interventions on reducing energy demand

Another factor to assess the impact of interventions is the reduction in energy consumption. The great difference shown, by the Warm Front Study (Hong, Oreszczyn et al. 2006) between the modelled and the monitored normalized space heating fuel consumption in houses that employ fuel poverty measures, strongly suggests the importance of using empirical data to assess the impact of energy efficient improvements to dwellings. For any similar future investigation, the study recommends that temperature monitoring should be carried out in every room and detailed record kept of fuel consumed by all space heating appliances.

4.4.3 How much does it cost? The financial impact of interventions

Recent detailed modelling of 2004 English House Condition Survey data by CSE, the Association for the Conservation of Energy and Richard Moore Associates (Preston et al, 2008) has revealed the cost and scale of delivering

energy performance improvements to the homes of the fuel poor in England in the order of £4.6 billion. The true cost of bringing all homes occupied by fuel poor households up to a standard of SAP 64 would be nearer to £6 billion.

4.4.4 Is it 'fit-for-future'- not able to afford cooling the house

Climate change due to summertime overheating poses a question of affordable 'coolth'. Over the next 40 years, warmer winters and warmer summers with extreme heat discomfort may shift the definition of fuel poverty from being unable to afford adequate heating in winter to one which also includes adequate cooling in summer (Roberts 2008). However, the potential threat of widespread energy use for domestic cooling should be tackled now, wherever possible, by passive measures and only then followed by low carbon cooling technologies as appropriate. The impact of fuel poverty intervention measures should thus be assessed in terms of their 'fitness' and 'adaptability' for future climate changes.

4.5 Summary and conclusions

The literature reviewed here reveals that the effectiveness of fuel poverty schemes offering 'staple' energy efficiency measures is limited due to technical, behavioural, socio-cultural and regional factors. There is a discrepancy between the theoretical savings achieved through staple measures and the actual saving achieved and this discrepancy should be noted in our assessments of the extent to which fuel poverty has been alleviated or reduced. This observation hints at reviewing the methodology of calculating fuel poverty, which is currently based on modelled energy consumption. Monitoring and feedback could be critical in changing behaviour and thus will govern the extent to which energy efficiency measures are successful. Therefore temperature monitoring of all habitable rooms together with an objective and subjective evaluation of thermal comfort will be necessary to fully understand the impact of the interventions of fuel poverty measures. Finally it would be necessary to model the performance of energy efficiency measures in a future climate scenario where average summer temperatures would have risen and thereby assess their robustness, ensuring

that today's fuel poor households with lack of affordable warmth do not end up being tomorrow's fuel poor households with lack of affordable coolth.

5 WHAT IS THE ROLE OF EACH STAKEHOLDER ON FUEL POVERTY?

5.1 Identification and roles of stakeholders

There are a range of stakeholders associated with fuel poverty, some of whom have a direct and significant impact on householders, others have a more indirect impact. The main stakeholders identified as part of this review are listed below.

1. Government
 - a. Central Government
 - b. National Health Service
 - c. Local authorities
 - d. Technical groups
2. Private corporations
 - e. Energy Suppliers
 - f. Manufacturers
 - g. Others in the supply chain
 - h. Financial Institutions
 - i. Private landlords
3. Charity and action groups
 - j. Charities
 - k. Consumer groups
4. Community support
5. The media

It is inevitable that other stakeholders also exist, and these would be uncovered as part of more thorough review, in particular as a result of consulting end users, which has been outside the scope of this review.

5.1.1 Central Government

Central Government in the UK forms a significant stakeholder role in the approach towards reducing fuel poverty. The main piece of legislation, the

Warm Homes and Energy Conservation Act 2000, covers a strategy for reducing fuel poverty and requires setting of targets for the implementation of that strategy. Under this Act, the Government has a target of removing all vulnerable households from poverty by 2010 and all households in England by 2016.

The Energy White Paper, published on 23 May 2007, sets out the Government's international and domestic energy strategy to respond to changing circumstances, address the long term energy challenges and deliver four energy policy goals:

- to put the UK on a path to cutting CO₂ emissions by some 60% by about 2050, with real progress by 2020;
- to maintain the reliability of energy supplies;
- to promote competitive markets in the UK and beyond;
- to ensure that every home is adequately and affordably heated.

Changes to Government structure over the past decade has meant that the Department for Business, Innovation and Skills (formerly Department for Business, Enterprise and Regulatory Reform, and previously Department for Trade and Industry), DEFRA (Department for Environment Food and Rural Affairs) and currently the Department for Energy and Climate Change all have had responsibility for tackling fuel poverty. Because of the complexity of fuel poverty, the Department of Health and the Department for Work and Pensions are also stakeholders, as well as regulators Ofgem (Office of the Gas and Electricity Markets). Ofgem support the Government in ensuring the competitive energy market works for all customers and in particular for low income and vulnerable households.

The Government is responsible for policy and strategy setting and published the UK Fuel Policy Strategy in November 2001 (BERR, 2001) and produces an annual report on progress towards this strategy (DEFRA, 2008a). Ofgem launched a Social Action Strategy in October 2005 which set out to how they

would meet its social obligations and help the Government tackle fuel poverty.

This included four key areas of work:

- Securing compliance with regulatory obligations and effective monitoring and reporting by the companies;
- Encouraging best practice among energy suppliers using research to identify effective ways to address fuel poverty and help vulnerable customers;
- Influencing the debate about measures to help tackle fuel poverty, working with other stakeholders, helping to promote a joined up and holistic approach;
- Informing consumers about ways to lower their energy bills.

The Government has directly funded a number of programmes to assist people in fuel poverty:

Warm Front which provides a package of insulation and heating improvements up to the value of £3,500 (or £6,000 where oil, low carbon or renewable technologies are recommended) to help make homes warmer, healthier and more energy efficient. Householders who own their own home or rent from a private landlord may be eligible for grants under this scheme (Warm Front, n.d.). However, a report by the Public Accounts Committee (2009) has shown that nearly 75% of households entitled to a grant are unlikely to be in fuel poverty, whilst the scheme is only available to 35% of all those households likely to be in fuel poverty, partly because the eligibility criteria include receipt of non-means tested benefits. In addition, the scheme does not prioritise those with the most energy inefficient accommodation. The report does comment that many customers are satisfied with the improvements once complete. Other concerns regarding the scheme are that many applicants are having to fund a lot of the work themselves and the scheme is due to be cut in April 2010. Watchdog Consumer Focus' energy expert, Jonathan Stearn (Home Advisory Service, 2009) commented "when it works, Warm Front can make a big difference to those who receive its help, but it is still failing many who need its help the most".

Warm Zones, set up in 2000, trials were conducted in five 'pathfinder' zones in the UK (Hull Newham, Northumberland, Sandwell and Stockton). Warm Zones aims to identify all households that need help in a given area and give them all available help in a cost effective way. It does not focus just on fuel poverty, but looks to help anyone who can benefit from energy efficiency measures (Warm Zones, n.d.).

Home Energy Saving Programme, which provides assistance to householders to make their homes more energy efficient and, for households most vulnerable to fuel poverty, gives help with their bills during the winter through fuel payments and lower energy company tariffs (DEFRA, 2008b).

Winter Fuel Payments, an annual payment to help people aged 60 years and over with the costs of keeping warm during winter. A payment of at least £250 (depending on circumstances) is made to people aged 60 and over; people over 80 years are entitled to additional payments (Directgov, n.d.a).

Cold Weather Payments, made during each week of very cold weather (specific criteria apply), to householders already on Pension or Income Support (Directgov, n.d.b).

Fuel Direct is a last resort payment method for particular consumers who experience major difficulties in budgeting. Access to Fuel Direct requires that a domestic consumer should be in debt for gas or electricity and that they should be in receipt of Income Support, Income-based Jobseeker's Allowance or Pension Credit. In order for a Fuel Direct arrangement to be set up it is necessary to secure the agreement of both the Department for Work and Pensions and the energy supplier. The operation of Fuel Direct involves direct deduction from benefit for both current consumption and for debt recovery. Fuel Direct is now known as the Department for Work and Pensions' Third Party Deduction system (Third Party Payments Creditor Handbook, 2006).

Low Carbon Buildings Programme is open to householders to provide grants of up to £2,000 towards the costs of energy efficiency measures for their home (Low Carbon Buildings Programme, n.d.).

A number of public awareness campaigns have been run by the Government, for example:

Keep Warm Keep Well – a national campaign to reduce cold-related illness and deaths during winter. Information and advice is provided about how to stay well in winter by keeping warm and what financial support is available (Keep Warm Keep Well, n.d.)

Warm Homes – a national, annual campaign organised by NEA (National Energy Action) in association with Powergen and supported by the Government, to raise awareness of the households in the UK who cannot afford to heat their homes in the winter and the action that can be taken to end their suffering (National Energy Action, n.d.).

Save Money Save Energy – a campaign to raise awareness of the help on offer under the Home Energy Savings Programme.

The Government has also set up performance frameworks, which includes annual reporting of progress with the fuel poverty strategy (DEFRA, 2008a), and national indicators, e.g. NI 187 (DEFRA, 2009). Jobcentre Plus offers advice to people about a range of benefits, such as Disability Living Allowance and Income Support. The Government also offer interest-free Crisis Loans to help with an emergency or disaster, particularly where there is a risk to the family's health or safety (Directgov, n.d.c).

5.1.2 National Health Service

There is a recognised link between health and fuel poverty as poor housing has a significant effect on both physical and mental health. Living in a cold home can lead to or worsen a large number of health problems including heart disease, stroke, respiratory illness, falls, asthma and mental health

problems. In the winter of 2006/07, there were 23,900 excess winter deaths in England and Wales (DEFRA ,2008a) Clearly an improvement in fuel poverty will reduce the burden on the National Health Service. The General Practitioner is likely to be an initial point of contact with a householder who is unwell, and provide letters of diagnosis for patients claiming disability benefits and so health professionals are important stakeholders in the process. Other health practitioners who may be stakeholders include health visitors, community and district nurses and occupational therapists. Olsen (2002) comments on “the massive pressures on the NHS each winter. Waiting lists are aggravated after cold weather, with hospital beds blocked by patients with cold-related illness. Planned operations have to be cancelled – a major source of NHS inefficiency. GPs and nurses struggle with increased surgery and home visits and a higher expenditure on prescriptions”. Whilst the GP may be in a good position to assist a patient who is in fuel poverty, confidentiality issues may prevent any action being taken. However, Boardman (2000), suggests that ‘health authorities are more focussed on service provision than prevention’.

The National Health Service support the Keep Warm Keep Well campaign, with information on how to cope with cold weather and keep well on their website. Other information about winter health is also provided in paper and electronic formats through surgeries, pharmacies, libraries and Citizen’s Advice Bureau as well as on the internet.

5.1.3 Local authorities

Local authorities offer a range of grants and loans for energy saving home improvements; these vary according to geographic location and personal circumstances. Details are provided by the Energy Saving Trust (n.d.) but local councils also provide free and impartial advice and information on energy saving measures, often through a dedicated council department or officer. Schemes such as HeatSeekers (n.d.) work with Local Authorities across the UK using thermal images to identify homes that may benefit from improved insulation, to help residents save money and reduce CO₂. Their

website provides information and links to accredited suppliers (much of this is directed through the Energy Saving Trust)

Local authorities can support people who are eligible for Council Tax Benefit, Discretionary Housing Payment or Housing Benefit under the Local Housing Allowance. Local councils are likely to have a benefits department to assist householders in the claims process.

Local authorities also provide housing to people on low income and, as part of council house schemes, will maintain properties to the Decent Homes standard (A Decent Home, 2006). This ensures the house meets the current statutory minimum standard for housing, it is in a reasonable state of repair and it has reasonably modern facilities and services.

Social workers employed by the local authority will have contact with householders and are likely to support a range of people with financial, health and social conditions, some of whom will be people in fuel poverty.

5.1.4 Technical groups

There are a number of funded technical groups who form a stakeholder group. These include Fuel Poverty Advisory Group and Energy Efficiency Partnership for Homes. The Fuel Poverty Advisory Group consists of senior representatives from organisations such as the energy industry, charities and consumer bodies, who take a broad and impartial view.

The role of the Group is:

- To consider and report on the effectiveness of current policies in delivering reductions in fuel poverty and the case for greater co-ordination
- To identify barriers to the delivery of reductions in fuel poverty and to the development of effective partnerships, and propose solutions
- To consider and report on any additional policies needed to deliver the Government's targets
- To enthuse, and encourage, key players to tackle fuel poverty

- To consider and report on the results of the work to monitor fuel poverty.

(BERR, n.d.)

The Energy Efficiency Partnership for Homes is a network of over 560 organisations from the public, private and voluntary sectors. They aim to reduce the energy consumed by UK households as well as the number of people who are unable to sufficiently heat their homes during winter (Energy Efficiency Partnership for Homes, n.d.).

These groups provide reporting and monitoring of metrics and policy effectiveness as well as proposals for policy modifications.

5.1.5 Energy Suppliers

The energy suppliers, (E.ON, British Gas, RWE npower, EDF, Scottish & Southern Energy, Scottish Power, etc) through the supply of and charging for energy to the householders, form a significant stakeholder group. The energy suppliers are obliged, under CERT (Carbon Emissions Reduction Target) by 2011 to deliver measures that will provide overall lifetime carbon dioxide savings of 154 MtCO₂ – equivalent to the emissions from 700,000 homes. Suppliers must focus 40% of their activity on vulnerable and low income households – the so-called Priority Group. The Community Energy Saving Programme (CESP) places an obligation on energy suppliers and electricity generators to meet a CO₂ reduction target by providing energy efficiency measures to domestic customers, including providing these measures to houses in areas with high levels of low incomes (Communities and Local Government, 2009).

Suppliers also provide efficiency and benefit advice and ensuring customers are aware of available efficiency measures, through information provided with bills, direct marketing, on-line information and face to face approaches, for example E.On offer energy efficient products for households (E.On, n.d.a). British Gas offer a 'Here to help' programme that provides free energy efficient products and a quality of life assessment for people on certain

benefits and those over 70 years of age (British Gas, n.d.). Energy suppliers also ensure customer awareness of (social) tariffs and the benefits of switching, for example E.On's Caring Energy which offers free and discounted energy efficient measures, free energy efficiency advice, free benefit entitlement checks and advice on payment methods and tariffs, priority service register, referrals to other grants schemes and E.On Caring Energy fund. This fund assists E.On customers who are low income households facing financial difficulty and may not be eligible for financial help from Government schemes. E.On's WarmAssist tariff offers existing customers who are 60 or over and in receipt of Pension Credit a 15% discount on standard gas and electricity prices (E.On n.d.b).

Utility companies offer social tariffs to help those on low incomes, however, a report on www.easier.com suggests that being on a social tariff does not automatically mean being on the lowest prices. At some points during 2008, they report three of the big six suppliers were offering lower prices on one of their mainstream plans. This meant that customers who were on a social tariff were potentially paying more for their energy than other consumers. One supplier also expected consumers to switch to paying by direct debit in order to benefit from its initiative which means that consumers who are on pre-payment meters or who do not have a bank account are effectively being excluded (Easier.com, 2008).

The Utilities Act 2000 encouraged providers to compete to bring down fuel prices and there is strong competition among energy suppliers (Wright 2004). However, although wholesale gas prices have dropped recently, not all decreases have been passed on to the consumers.

Macmillan Cancer Support's forum reports in 2008 that British Gas offered a big discount to dual fuel customers who received certain benefits/ allowances. However, the forum reports that the offer was later withdrawn as the quota was filled as too many people applied, despite minimal advertising; this will inevitably frustrate customers (Macmillan, 2008).

National Energy Action carried out a report to outline a payment method to assist people who have difficulty in paying for fuel. The report, which was funded by the Money Advice Trust, details a system that makes use of options such as direct debit and cash accounts that can be accessed easily. Maria Wardrobe of NEA commented "It is vital that vulnerable households are not paying more for their fuel because an optimal payment method has not yet been developed." Vulnerable people often have to use pre-payment meters because they do not have easy access to the internet or might not have a bank account, but this payment method costs more, Ofgem has said (Fletcher, 2009).

5.1.6 Manufacturers

Manufacturers of energy efficiency home improvement measures such as boilers and central heating, insulation, glazing and lighting, and appliances such as heaters or fridge freezers are stakeholders. Where there is sufficient demand, they can offer new products and technology, easy payment terms and warranty. They may also offer installation and on-going support.

There are initiatives by manufacturers to advance energy efficient products, for example Baxi Group, Warm Zone, BGC and Veolia Water Outsourcing have collaborated to help local authorities and registered social landlords to address the issues of fuel poverty in off-mains gas areas (Plumbing Park, 2009). However, these initiatives are not as widespread or visible as the activities of the utility companies.

5.1.7 Other groups in the supply chain

Other groups in the supply chain are also stakeholders, and include retailers, installers, maintainers and bodies representing these groups. Many of these offer energy saving products or energy efficiency measures for the home. For example, DIY retailers offer a range of home improvement products that increase the energy efficiency of the home; B&Q are well known for retailing wind turbines.

The Energy Retail Association (ERA), formed in 2003, represents the major electricity and gas suppliers in the domestic market in Great Britain and works closely with Government, NGOs, charities and other organisations in England, Scotland and Wales to ensure a coordinated approach to dealing with the key issues affecting our industry and the British consumer. All the main energy suppliers, operating in the residential market, in Great Britain are members of the association - British Gas, EDF Energy, npower, E.ON, Scottish Power, and Scottish and Southern Energy. Since its inception, the ERA has ultimately focused on finding ways to continually improve customers' experiences with their electricity and gas suppliers (Energy Retail, n.d.).

Other industry bodies include:

- The Cavity Insulation Guarantee Agency, established in consultation with the Government's Energy, Environment and Waste Directorate (a division of DETR) to provide householders with an independent, uniform and dependable guarantee covering defects in materials and workmanship. The Government regards cavity wall insulation as the most effective energy savings measure that most people can carry out on their homes and a major contributor to reducing emissions of carbon dioxide, the main greenhouse gas (Cavity Insulation Guarantee Agency, n.d.).
- The Gas Safe Register, run by the Health and Safety Executive, took over the statutory gas registration scheme in Great Britain from CORGI (Council for Registered Gas Installers).

These provide management of installations and ensure installer competence. They can also offer post-installation support, regulation and guarantees, providing reassurance to the householder.

5.1.8 Financial Institutions

Although many banks offer low rate loans and adjustable payments on mortgages, there is little evidence of overt help with fuel poverty. The banks clearly could be an influential stakeholder, although currently appear to take a passive role in tackling fuel poverty.

However, these offers rely on householders using banking services, and the National Energy Action site (2008) suggests the following statistics:

1. 1.5 million households in Britain have no bank or building society account
2. 4.4 million households have very limited access to financial services
3. one in five adults has no current account
4. the cheapest payment options are open only to direct debit customers

This means that fuel poverty among poor consumers is exacerbated by their exclusion from financial services.

The Financial Services Authority (2009) published a document 'Money Made Clear' to assist people with basic banking issues. Again, this is not targeted at fuel poverty in particular but provides advice to consumers who may be in debt.

Householders are advised to talk to their mortgage lenders if they are unable to pay their regular mortgage payments. Directgov (n.d.d) offers advice on mortgage payments for people who are worried about continuing their payments. Homeowners Mortgage Support offers help to people whose income has suddenly and unexpectedly dropped.

5.1.9 Private landlords

Landlords in the private rented sector have the responsibility to maintain the condition of their properties and to set rent levels (inclusive or exclusive of bills). They may tolerate delays in payment or adjustment of rates. Energy efficient standards are particularly low in the private rented sector, (in comparison, public sector rented accommodation has above average standards as social landlords have placed a higher priority on implementing energy efficiency measures) (Baker and Starling, 2003).

5.1.10 Charities

There are a number of charities that focus on energy and the issues relating to fuel poverty, the leading one being National Energy Action. Age Concern

(n.d.) campaign for the needs of older people in all aspects of their lives, including health and fuel payments and provide advice as well as a benefits checker and a Freephone information phone line. Their factsheet 'Help with heating' gives information on what financial assistance is available and ways of reducing heating expenses. It includes information on Energy efficiency measures, Switching to a cheaper supplier, Warm Front Grants, Cold Weather Payments, Winter Fuel Payments, Priority Services for people aged 60 and over and What to do if you are threatened with disconnection.

Help the Aged (2009) also offer support on claiming benefits and budgeting advice. They produce a leaflet 'Keep out the Cold' which gives advice on energy saving and have a free advice phone line – 'SeniorLine'. They have a fuel poverty calculator for people to enter their income and outgoings. In addition to direct help, they campaign for improved services and conditions for older people, including:

- taking the Government to court, with Friends of the Earth, for failing to meet its target to eradicate fuel poverty for vulnerable households;
- representing older people in the Fuel Poverty Advisory Group, which holds the Government to account on its progress towards the eradication of fuel poverty;
- working with Energywatch to put pressure on energy providers to develop and promote social tariffs and schemes for vulnerable customers;
- working with the Department of Work and Pensions to increase benefit take-up;
- calling for automatic payment of means-tested benefits for pensioners;
- working in partnership with British Gas to run a Benefits Advice programme and distribute information packs to vulnerable older people;
- raising public awareness of fuel poverty through the media; and
- providing older people with the tools they need to tackle fuel poverty.

Help the Aged (2008) also offer comment on measures and policies, to provide a non-governmental viewpoint

Other charities such as Barnados have highlighted their concerns about the effects of fuel poverty on children (Charities Aid Foundation 2009).

There are some specific, local charities who support individuals in an area, for example the Hampton Fuel Allotment Charity, which in the last financial year distributed £1,988,369 to support individuals and organisations in Hampton, Twickenham and Richmond. During the last eighteen years, the Hampton Fuel Allotment Charity (2009) has helped needy people in the area with grants towards fuel costs while greatly extending its activities to benefit the wider community. According to the Annual Report, during the year to June 2008 the Charity was able to assist some 1,640 households with fuel grants at an average of £324. In addition, the Charity purchased essential equipment for 300 individuals including refrigerators, cookers, washing machines, wheelchairs and special medical equipment.

Other local charities offer more general support to people in need, but this usually includes financial support for fuel payments, for example Isleworth & Hounslow Charity Limited Trustees (n.d.) award grants for a variety of things including payments to meet electricity, gas, water bills, TV licence fees. Energy Action Scotland (n.d.) is the national charity which aims to eliminate fuel poverty by raising awareness of fuel poverty, particularly as it affects low income households. It offers information on fuel poverty as well as schemes to help people on its website, with particular reference to Scottish issues.

Shelter, the housing and homelessness charity, offers advice on paying for a home, including making best use of the energy used, where to get help paying for fuel, and making homes energy efficient (Shelter, 2009).

Other charities, such as Care & Repair England (n.d.), which aims to improve the housing and living conditions of older people and disabled people, offer

advice, helplines and information (sometimes as videos/DVDs) on particular topics relating to housing, health, debt and benefits.

Macmillan carried out a fuel poverty campaign for cancer patients which help cancer patients who are struggling with their fuel bills, for example they are able to contact the fuel provider on the patient's behalf and arrange a small monthly payment whilst writing off any remaining arrears. (Breast Cancer Care, 2009)

5.1.11 Consumer groups

There are also a number of consumer groups set up to promote energy saving and carbon reduction (e.g. Energy Saving Trust, Carbon Trust) as well as more general issues of daily living such as Citizen's Advice Bureau, Consumer Direct, Housing Associations. Groups specifically aimed at home heating include Home Heat Helpline, USwitch, Health, Housing and Fuel Poverty Forum. As with charities, they offer a wide range of advice and help and run marketing and awareness campaigns (e.g. CAB/Ofgem: Energy Best Deal)

Energy Saving Trust operate a network of advice centres, to provide independent, authoritative and free information on the scope for energy efficiency improvements.

Citizen's Advice Bureau offer support, particularly in relation to debt counselling, across the UK. In 2002 CAB produced a report (Monroe and Marks, 2002) about the problems Citizens Advice Bureau clients have dealing with fuel suppliers and paying for fuel. It describes the experiences of CAB clients with a range of fuel suppliers reported to the National Association of Citizens Advice Bureaux (NACAB) in the two years ending November 2001.

uSwitch (n.d.) offers a website to allow consumers compare prices for a range of services, includes gas and electricity price comparisons.

Consumer groups such as the Consumer Action Group (2006) assist people making claims or establishing their rights. They provide specific advice on fuel poverty grants, with comments from others as part of an on-line forum. This gives comments on personal experiences, where things have worked well and where they have not. These sites highlight some of the issues that people face when trying to claim grants and the frustrations and knock-on effects when the system does not work as expected. An example of one of these postings is shown below:

When the warm front scheme first started my parents who are both disabled & my father registered blind applied for central heating. Because at the time they weren't on the pension tax credits they were only granted a heater for the hall. They had a gas fire in the living room but no other heating in the house. last year they were complaining of being cold all the time but daren't use the heater in the hall as it was unsafe for my father, it was on the bottom bend of the stairs with a cage over it which stuck out too far so we had to take the cage off making it unsafe then to use.

I phoned warm front & they sent a lovely girl out who agreed they needed more heating & also agreed that the heater on the stairs was indeed unsafe for either of my parents not just my father. She said as they were now on pension credits they could have the work done but there maybe a small charge as they had the heater put in & that would be taken in to account. My parents were happy with this & signed up.

We waited weeks to hear anything then received a letter asking that my parents phone as they needed more information, both my parents are deaf & dumb so I phoned, I was told they wouldn't not be getting the heating put in because they felt having the heater at the bottom of the stairs was all they needed.

I argued that the girl agreed it was unsafe & that she also said they needed central heating as the house was not warm enough. They said her report said differently & I could not appeal.

This caused great upset & distress to my parents & my daughter ended up paying out to British gas to have the heating put in for them which i have to say have done a great job.

These forums can provide detailed anecdotal information of people's experiences with the system. Whilst they may only offer the views of those with IT expertise and the time and enthusiasm to make postings, they provide an insight into people's lives not found easily outside detailed research.

5.1.12 Community support

Community support groups, friends, family and neighbours form an important stakeholder group. Although informal and difficult to influence, their power must not be underestimated. Religious groups, community centres and organisations can offer advice and practical help, for example free legal advice or working groups to help with home improvements. They often also refer individuals to other organisations, e.g. Citizen's Advice Bureau, where their knowledge is limited. Some groups provide food boxes or assistance with applications for loans and benefits where needed. It may also be common practice for families or close friends to offer financial support to householders in times of need, depending on individual circumstances. It is certainly likely to friends, neighbours and families to support householders through regular visits, provision of hot meals or clothing, transport to health appointments or support with completing paperwork. It is anticipated that it is more likely for parents to support their children than upward support, particularly if financial.

5.1.13 The media

The media also forms a stakeholder, with messages conveyed to consumers through news, articles, comment, magazine programmes, advertising, story lines etc. These groups have the potential to raise awareness and provide advice, reaching many people otherwise isolated. Television advertisements, home improvement programmes and real life stories, for example, can offer consumers information, support and advice that they would not otherwise receive.

5.2 Interaction of stakeholders with householders

The interrelation of the stakeholders with the householder is complex and unlikely to follow a consistent path. Previous work at Loughborough University (Geddes, 2009) into employment, disability and return to work, although in an entirely different area, has significant parallels to fuel poverty. Here, the research showed that each individual's situation was complex and unique, with people interacting with the different stakeholders (employers, benefit agencies, health professionals, friends and family etc) at different

stages and with varying success. Some individuals were able to establish their 'rights', claim appropriate benefits and find an employer easily as they had a good advisor. Others visited and revisited their GP on numerous occasions with little progress towards tangible support or employment. The pathway taken by someone in fuel poverty is similar, as they will rely on a number of different stakeholders individual to their circumstances and situation at that point in time. Influencing factors such as their health, employment status and income, and the weather can be transient and so their particular requirements at any stage will vary and also be influenced by their previous experiences. This makes the provision of a robust and usable system difficult, as it needs to provide generic and overview information to some individuals and detailed and specific information to others.

In order to understand the process further, a selection of stakeholders were contacted to establish the type of help offered:

- The Home Heat Helpline offers support to householders by contacting a supplier whilst the caller remains on the phone. The householder is included in the conversation which could include discussing changing the payment method or payment plan, reviewing what energy they are using and ways they could change this. They will look to see what other interventions are possible, such as home insulation.
- A local church said they would contact the Citizen's Advice Bureau on the householder's behalf, provide the family with a voucher for the food bank which will supply food for three days. They may support the family with applying for a loan or help them claim any benefits that are due. They also provide free independent financial advice and support with applying for jobs.
- Directgov offers advice to people, through their step by step guide on their website to:
 - List their creditors

- Decide which debts to pay off first
- Sort out their budget
- Get in touch with utility suppliers
- Claim benefits that may help (Fuel direct, Winter Fuel payments, other benefits)
- Contact Consumer Direct if they are having difficulties with their utility supplier
- They also suggest contacting CAB or the National Debtline for further advice on resolving debt problems.

Richness and diversity of the information gained from this small sample suggests that a more thorough qualitative survey of the information provided by key stakeholders and their interaction would be invaluable.

5.3 Reasons why the system may be failing

As a result of this review of stakeholders, it is apparent that there are a significant range and number of stakeholders and the system for support is complex. With such a complex situation, changing regularly as Government initiatives, energy supply and technology changes, there are a number of reasons why fuel poverty is a difficult issue to tackle. Without substantiation, these could include the following:

- Many people do not claim all the benefits to which they are due, for a variety of reasons, including lack of knowledge, complexity of the system, apathy, pride, being too busy, low literacy levels, not understanding the system or forms, not speaking English or being unable to access information in an appropriate language, as well as avoiding detection.
- Much of the information is available on the internet, and so excludes those who do not have access to the internet or those with limited IT skills.

- For much of the available help and assistance there is a limited amount of advertising therefore many people may remain unaware of campaigns and systems that are in place to help them.
- Older people in particular are reluctant to complete forms, perhaps simply due to inability to read small text, or being overwhelmed by the forms.
- Unexpected drops in income could arise as a result of newly separated partners, so a householder could need support at other times of stress. The partner could also leave with experience and information, leaving the householder in difficulty (Brazier et al, 2006).
- Energy efficiency measures have longer term benefits and often need an up-front payment so may be out of reach or are not an attractive financial priority to many in fuel poverty.
- Householders may be unaware of how to make the most of their current energy use, through simple behaviour changes or modifications to their homes and this information is not clearly presented to them.

5.4 Conclusions of stakeholder review and proposals for further work

This review has identified a wide range of stakeholder groups and their roles in the reduction of fuel poverty. Some of these stakeholders have direct and significant impact, others are less influential or may affect the householders only in the long term. Others may not realise they have a role in the reduction of fuel poverty. It is clear that some stakeholders could play a more important part in tackling the issues around fuel poverty, or provide a 'one stop shop' for people in difficulty.

The complexity of fuel poverty and the individual circumstances of each householder mean that it is not possible, without further research, to show a

clear pathway linking the different stakeholders. Whilst it has been possible to speculate on the factors that prevent householders from escaping from fuel poverty, a more detailed analysis of real situations is needed. This could be done through semi structured interviews with a range of householders, identifying their past experiences and needs, to determine their requirements for the future. By including a broad range of household types in this review, it should be possible to more clearly identify the barriers and enablers for the majority of people in fuel poverty.

6 WHAT CAN BE LEARNED FROM THE FINANCIAL SECTOR, AND THE IMPACT OF FINANCIAL AND DIGITAL EXCLUSION FOR PEOPLE WHO CANNOT ACCESS THE BEST DEALS?

6.1 What is financial exclusion?

Financial exclusion is defined as ‘the processes that prevent poor and disadvantaged groups from gaining access to the financial system’ (Johnston et al: 2001). Areas of the financial system that may be rendered inaccessible are:

- banking
- affordable credit
- insurance (such as home contents and life insurance)
- assets (such as savings and pensions); and
- money advice

The term ‘financial inclusion’ is applied to measures that redress financial exclusion. In the context of fuel poverty discussions, the most pertinent elements of financial inclusion are those that increase access to: a current account; affordable credit and; money (and money-saving) advice.

Discussions of financial exclusion emphasise its spatial dimension. Rural communities in particular, have limited physical access to financial institutions; across recent years this has been exacerbated by the closure of unprofitable bank, building society and Post Office branches. For many households, the rise of internet and telephone banking has compensated for the loss of physical facilities. However, effective access requires equipment and an adequate level of competence. Where this varies between households, communities may become polarised. One notable marker of the continued link between area and access to services is the distribution of free-to-use cashpoint machines. Affluent communities are generally served by no-fee cash point machines operated by mainstream financial institutions; in contrast,

cashpoints located in disadvantaged areas are often run by smaller operators and incur a fee.

The above example of the operation of market forces reflects a broader economic reality; costs associated with providing financial services to disadvantaged groups are likely to be greater than they are to affluent ones. A trend towards an increasing reliance on strategic targeting of customers across a wide range of financial products has contributed to the concentration of financial exclusion in deprived communities.

At an individual or household level, additional risk factors for financial exclusion include unemployment, disability, low educational attainment, living in rented accommodation; lone parenthood and Black or minority ethnicity (Kempson and Whyley, 1999); all of these characteristics are disproportionately represented in deprived neighbourhoods. A person's socio-economic and cultural characteristics are likely to be shared by their family, friends and neighbours. Consequently, people who struggle to manage their finances due to a poor education and low income may have no-one within their social network who has the resources to help them. In addition, women are more likely than men to experience financial exclusion, as are people aged 65 and above.

Supply side processes underpin many facets of financial exclusion. Following an unfavourable risk assessment, individuals may be refused products (access exclusion); alternatively, prohibitive charges may be attached to the offer which is consequently declined (price exclusion). Marketing exclusion occurs where products are advertised in a way that restricts uptake to certain social groups (for example, via financial advisors). In other cases, both supply and demand processes are evident. Condition exclusion describes scenarios where inappropriate conditions apply to the product (for example, a bank may offer a £2,000 loan repayable over two years when the applicant wants to borrow £300 repayable weekly over six months). Finally, self exclusion reflects where individuals do not attempt to access financial services because they think they would be refused, feel they do not need

them or find the prospect too daunting (ibid). Most people without a current account have never applied for one. Many others are underbanked; that is, they have a bank account but they do not use to it its full effect (HM Treasury, 2007a).

While disadvantaged social groups are at increased risk of financial exclusion, financial exclusion is, in turn, likely to amplify poverty and social exclusion. Individuals without access to a current bank account are denied opportunities that are a normal part of most people's lives, such as paying bills by direct debit or signing up for a mobile phone contract. They may also exclude themselves from the labour market as most employers expect to pay wages directly into a bank account.

Mainstream financial institutions offer a degree of security. In addition to avoiding the security risks of using cash for everything, payment by credit card offers some protection if the supplier fails to deliver or the goods are substandard. Furthermore, most savings are protected in British banks and building societies, as evidenced in the recent banking crisis; this contrasts starkly with the losses incurred by (mainly low income) households who deposited money with the Christmas savings club Farepak. Overdraft facilities attached to a current account also allow customers to smooth their income and thereby accommodate short periods of income insufficiency.

Disadvantages to holding a bank account include the risk that a bank card is stolen or an internet account is misused, in which case the consequences may be much greater than the theft of cash. In addition, where financial management skills are inadequate, access to an agreed overdraft may result in the account being permanently overdrawn, so the overdraft cannot be used for income smoothing.

Having no bank account is likely to increase a household's cost of living. The unbanked may need to pay a fee to undertake basic transactions such as cashing a cheque or transferring money. In addition, many utility and telecommunications providers offer substantial discounts where services are paid for by direct debits; this reflects the real savings to the provider where

payment is automated. As a consequence, unbanked customers risk paying more for their utilities (although some vulnerable customers are able to access non-punitive social tariffs from energy suppliers). A current bank account can act as a gateway to other financial services, such as personal loans and consumer credit, savings products, insurance and financial advice.

Where mainstream institutions are willing to provide credit, the interest rate is generally lower than from other lenders. People without access to mainstream credit may be driven to approach informal and perhaps illegal moneylenders. It should be noted, however, that high street banks may offer loans on terms that do not suit low income families. The scenario presented above (the need for a £300 loan repayable weekly over six months) would be expensive to administer and therefore not commercially viable at standard interest rates. In addition, home lenders arrive at the door to collect payment which may suit the lifestyles of marginalised groups.

If day to day costs are met through high interest loans, unmanageable debt may become entrenched. Where the problems associated with low income are exacerbated by poor financial management and over-indebtedness, household income becomes a poor indicator of the level of disadvantage experienced and the negative consequences for family life and health. This association was noted in the Child Poverty Review, (HM Treasury, 2004a).

A report by Save the Children and the Family Welfare Association (2007) constructed a hypothetical poverty premium levied on an unbanked household, with no access to mainstream credit and living in a deprived neighbourhood. This totalled £1,000 per year and reflected the higher costs of: buying an item of furniture from a sub-prime credit shop; borrowing £500 from a doorstep lender; cashing three £200 cheques at Cash Convertors; having pre-payment meters for gas and electricity; relying on a pre-payment mobile phone rather than a contract; and taking out home contents and car insurance in a deprived London borough (in contrast to a more affluent London borough).

6.2 What is digital exclusion?

An element of disadvantage that is closely allied to financial exclusion is digital exclusion or 'the digital divide'. This latter term refers to the gulf between people who have the resources to utilise the internet and other information technologies, and those who do not. The internet often dramatically reduces the costs of providing products and services. In the case of services, internet accounts allow companies to offer discounts to customers who are willing to forgo face-to-face, or telephone, interaction. Retailers are also able to provide products via the internet more cheaply than through high street shops. Access to the internet, and having the competence to use it, gives consumers the option of reducing their living costs; however, a prerequisite for this is access to standard banking facilities.

Internet access does not necessarily involve a computer as some elements of it are available through some televisions. In addition to the opportunity to save money by buying cheaper goods and services, numerous internet sites offer price comparisons for a range of goods and services (including utilities), allowing consumers to shop around. The internet may also be a source of information about benefit entitlement and other services for vulnerable groups, such as home insulation grants and debt advice.

There is a very strong association between age and internet use (Office for National Statistics First Release; Internet Access 2008). In a 2008 survey, 93 per cent of young adults (aged 16 to 24) reported having accessed the internet in the previous three months. Among people aged 65 and over, 26 per cent had used the internet in the previous three months while 70 per cent had never used it. The markers of disadvantage that identify people at heightened risk of financial exclusion (such as low income, low educational attainment and unemployment) similarly apply to the digital divide (Gardner and Oswald 2002). In addition, as with financial exclusion, women are less likely to access the internet than men.

The changing role of geography in digital exclusion has close parallels with financial exclusion. In the early years of the expansion of internet usage, remote rural communities were disadvantaged by their lack of access to broadband (as well as by the scarcity of public access to computers such as public libraries and internet cafes). As high speed broadband coverage spreads rural communities are becoming increasingly 'enfranchised'; however, communities that are characterised by socio-economic deprivation are at increased risk of digital marginalisation. The ubiquity of mobile phones among younger people in particular has resulted in many households giving up their telephone landline, thereby removing an important mode of accessing the internet. While the internet can be accessed from the latest generation of mobile phones, this is particularly expensive.

In January 2008 the Government appointed its first minister for digital inclusion and announced a consultation plan which resulted in the Digital Britain Report (DCMS/DBIS 2009). The report focuses on the need to achieve universal availability of high speed broadband and announces a £300 million scheme to provide computers for children in low income homes. The associated Report The Independent Review of ICT Users' Skills (Morris: 2009) identifies that 11.6 million adults lack basic ICT skills. It suggests that access to digital technology be viewed as an entitlement and recommends:

- a social marketing campaign to promote the value of using the internet
- a helpline and website for online skills acquisition and
- the provision of computing skills trainers.

6.3 Tackling financial exclusion

New Labour has adopted the 'community' approach to promoting financial inclusion; that is to say, financial exclusion is not conceptualised first and foremost as something that affects individuals or households, rather it is a blight on deprived neighbourhoods that contributes towards their social exclusion. This interpretation is supported by research that indicates that households with low levels of financial activity (i.e. low income families with no bank account, savings or mortgage) are geographically concentrated, with two-thirds of this group living in the ten per cent of post codes that are most

financially excluded (HM Treasury 2004b). Financially excluded areas are not characterised by a lack of bank, building society or Post Office branches. One consequence of this is that financially excluded households living in more affluent areas are overlooked by Government policies.

Initiatives that promote financial inclusion are integral to the Government's National Strategy for Neighbourhood Renewal. The Report 'Access to Financial Services' (HM Treasury 1999) makes a number of recommendations to provide some remedy for financial exclusion. These relate to:

- enhancing the work of credit unions;
- increasing the availability of insurance-with-rent schemes, and
- improving access to financial services in disadvantaged neighbourhoods.

The 1999 Report notes '(t)he banks in particular have a major task ahead of them, extending services to low-income households and developing delivery channels accessible to people in deprived neighbourhoods' (ibid: Foreward).

Credit unions are not-for-profit cooperatives that provide financial services for their members. The opportunity for membership is restricted to those who have a 'common bond' which may be based on residence, occupation or employer. In 1998, there were over 800 credit unions in the UK with a combined membership of about half a million. The Report identified that deprived communities could benefit from credit unions' savings and loans services which were constructed to be simple, flexible and low cost. Issues to be addressed included the fact that there were not enough credit unions in existence and those that operated in deprived areas were often under-utilised. In addition, not all credit unions were being run efficiently. Following the recommendations of the 1999 Report, credit unions were deregulated to enhance their competitiveness and flexibility; at the same time, they were brought within the remit of the Financial Services Authority to protect their members' interests.

Feedback on the recommendations of the 1999 Report was included in 'Promoting Financial Inclusion' (HM Treasury 2004b). By this time, all the major high street banks operated basic bank accounts. These accept deposits made by cash and cheque as well as benefit and salary payments; they also have direct debit facilities and allow round the clock cash withdrawals through ATMs and cashback from retail outlets. As they do not offer credit, they can be opened without detailed credit checks. Many basic bank accounts may be accessed across post office counters.

There have been some negative reports on the functioning of these accounts. 'Mystery shoppers' were sent to branches to see how easy it was to open a basic bank account and only around half were able to do so without problems. In a third of cases, bank staff directed applicants towards less suitable accounts while others were declined on the grounds of inadequate identification. In light of this, the Banking Code of Conduct was amended to direct that staff always consider the suitability of a basic bank account for applicants and offer it where appropriate. In addition, changes were made to the money-laundering regulations which had previously had the effect of blocking access to the banking system where applicants did not have identification such as a passport or driving license. A further criticism that some transactions (such as clearing a cheque) took longer with basic accounts than with standard accounts was also addressed by changes to the Banking Code.

The banks played a part in financing the introduction of the Post Office Card Account (POCA) which accompanied the Government's drive towards the direct electronic payment of all benefits. A POCA will receive benefits, tax credits and state pensions (but not housing benefits or wages) and the funds can be withdrawn across the Post Office counter; no other facilities are available. The Government viewed POCA as a stepping stone to a basic bank account; however, there is evidence that many customers are happy to settle for a POCA indefinitely. In effect, customers withdraw their benefit from the Post Office and then operate solely in cash. This preference endures

despite the fact that many basic bank accounts can be accessed across a Post Office counter.

The 2004 Report acknowledges, “(t)he dramatic reduction in financial exclusion which the Government seeks has so far not been achieved” (ibid: 8). Policy interventions arising from this Report target financially excluded individuals most likely to suffer negative consequences by approaching these people via trusted intermediaries (such as housing associations and local charities) and public bodies with whom they were already in contact. The Government established a Financial Inclusion Taskforce (FIT) to monitor progress, alongside a Financial Inclusion Fund of £120 million across three years to promote the initiatives; the bulk of this money serviced a Growth Fund designed to aid credit unions and other not-for-profit financial organisations. Allied to the setting up of this funding source, the Taskforce identified 25 ‘red alert’ and 56 ‘amber alert’ areas that could most benefit from an expansion of third sector lending.

Social Fund budgeting loans are a potential source of cheap credit for people who have been on certain types of means-tested benefits for at least 26 weeks. Loans for sums between £100 and £1,500 are restricted to certain types of essential items or services (such as furniture, clothing and paying rent in advance). They may also be available to service some types of debt, such as hire purchase agreements, if the agreement relates to items in the appropriate category. The decision to award or reject the claim – or make a partial award – depends on the claimant’s personal circumstances, including their perceived opportunity to repay from their benefit. An award may also be dependent on the amount of money in the Social Fund budget. Crisis loans are available to people on a low income, not just those on means-tested benefits; both types of loan are discretionary and interest-free. In November 2008, the Department for Work and Pensions produced a consultation document ‘The Social Fund: A new approach’ outlining the Government’s interest in passing the running of the Fund over to a third party (such as credit unions) who would also be able to offer money advice and other financial services. This transition would mean that loans incurred interest charges.

The 2004 Report outlines out-reach initiatives involving banks and building societies which promote financial inclusion among marginalised groups. These include staff-volunteering programmes and partnerships with credit unions, Citizens Advice Bureaux, housing associations and homeless and prisoners' charities. In addition, New Deal participants in Employment Zones can open a basic bank account by telephone with the New Deal advisor verifying the applicant's identity.

A recent Treasury briefing 'Progress towards the shared goal on access to bank accounts' (2009) reveals a drop in the proportion of adults who live in households where no-one has a bank account, from four per cent in 2002/3 to two per cent in 2007/8. Also this year, the FIT Report 'Financial Inclusion; More important than ever' (2009) provides an update on the expansion of affordable credit through third sector lending since the summer of 2006 (when the Growth Fund became operational). Across this period, almost 160,000 loans had been made totalling £70 million. Of the 81 red and amber alert areas, 56 currently have some Growth fund coverage while an additional 12 should have the facility by March 2010. The same Report highlights the £45 million spent across the same period to recruit and train over 500 money advisors and increase the capacity of money advice projects based in deprived communities. This source of funding has been increased for the next three years.

Given the continued self-exclusion of vulnerable groups, the perceptions and attitudes of people who remain unbanked is highly pertinent. Reasons given for not using a bank account include;

- a fear of incurring charges due to lack of funds; allied to this is a fear of becoming overdrawn, although this is not an option with a basic bank account (also, some basic bank accounts do not levy penalties where direct debits fail)
- a lack of understanding of the options and the benefits
- the availability of POCA for accessing benefits

- a distrust of banks and
- a belief that bank accounts are not for people like them (HM Treasury 2004).

The 2004 Report references a study that reveals that non-users of financial services are very similar to users who share their socio-economic characteristics; the primary distinction is that non-users are far more likely than users to have a social network that includes numerous other non-users (Meadows et al 2004). In effect, the non-use of financial services reflects a cash-only culture.

An additional highly important factor in the non-use or under-use of financial services is the lack of financial capability. Policies that attempt to enhance financial capability primarily target children via schools as well as adults accessed through the criminal justice system, young people in local authority care and parents engaged with Sure Start (HM Treasury 2007b). For other vulnerable social groups, financial advice is prioritised over capability building.

In areas earmarked for early third sector coverage, surveys were undertaken in August and September 2006 (prior to most schemes commencing) and at the same time twelve months later (GfK 2008). Each survey collected perceptions of the relative costs of different sources of credit. Across the year, there was a slight rise in the numbers believing that home loans were a high cost source of credit (from 50 per cent to 53 per cent) while perceptions of unlicensed lenders remained unchanged, with 65 per cent viewing these as high cost at both time points. More pertinently, there was no change in the perceptions of the value of credit unions. In 2007 (after the credit unions had begun operating in the area) just 21 per cent viewed them as low cost (the same figure as the previous year) while 61 per cent had no idea of the level of charges (compared with 60 per cent the previous year). This indicates that awareness of the benefits of credit unions remains low.

The FIT Report 'Financial Inclusion; More important than ever' (2009) considers ways in which the current recession might increase levels of

financial exclusion. They warn that rising unemployment may lead to an increase in the numbers of current accounts that become dormant as holders revert to POCA and cash transactions. In addition, the banking crisis may increase distrust of banks among marginalised groups leading to an rise in self-exclusion. The Taskforce found that more people are approaching credit unions for loans (including more from middle income groups) and an increasing proportion are being turned down for loans because of their inability to repay. In addition, money advice agencies are experiencing a rise in demand, including from non-excluded groups who have previously accessed loans from mainstream lenders.

In the context of the scheduled 100 day initiative, there may be lessons to be learned from initiatives that have tackled financial exclusion. Policies that promote financial inclusion have been at the forefront of Government efforts to combat social exclusion for over a decade. Initiatives have been exceptionally well-funded and have involved co-operation between a wide range of stakeholders; as with fuel poverty projects they have focused on deprived areas. Resources have been directed to projects that aim to enhance financial knowledge and capability as well as modify behaviours which are seen to undermine financial well-being.

It is likely that the 81 'red' and 'amber' areas identified as financial exclusion hotspots would also feature on a list of communities (or super output areas) that have the greatest density of households in fuel poverty. If so, they may have already received personalised financial advice relating to benefit entitlement checks, opening a basic bank account, finding the best value utility suppliers and applying for home improvement grants. If this were the case there would be limited scope for including them in the 100 day initiative.

7 CONCLUSIONS

This literature review makes a number of observations regarding the current methods involved with treating fuel poverty. The first issue to note is that the definition of fuel poverty used in Government reporting is oversimplified: the measure used is insensitive to local housing costs and costs of living, and is inconsistent with established income poverty measures. Furthermore, the subpopulation identified as fuel poor according to the Government definition is actually quite different to the subpopulation who class themselves as unable to achieve satisfactory thermal comfort.

Although the Government definition primarily addresses the tranche of the population who are at most risk of morbidity due to lack of sufficient heating (the elderly), it will inevitably involve a number of households who are not truly fuel poor. Although there are no plans for the Government to move to using a more appropriate definition, it is important for the current project to track all of the different measures, and should include a subjective definition.

The three aspects that control whether or not a household is fuel poor are the household income, fuel usage and (unit) energy costs. The majority of the fuel poor are in the lowest income decile and may be eligible for benefits – it is important that all available benefits are claimed. The fuel usage is heavily influenced by the home efficiency, and optimising this aspect is one important way of escaping fuel poverty. The investment involved in installing any efficiency measures may be reduced or even eliminated for the most vulnerable households: energy suppliers and the Government provide funding for these measures as part of low carbon or social initiatives. Energy unit costs may be reduced by switching to the cheapest product available, which may, if eligible, be a supplier's social tariff, although public awareness of these tariffs is limited.

The measures available to treat the fuel poor have had mixed success. Increasing the household income leaves the occupants free to spend the income as they see fit, and is not necessarily used to affect their thermal comfort. Efficiency measures are usually a positive influence on the household, but there are two main reasons why the effect is not always as much as predictions indicate. Firstly, heat leakage because of imperfect installation is commonplace, notably for cavity wall insulation. Secondly, householders tend to adjust their levels of thermal comfort ('take-back') after improvements have been carried out and elect to keep the house warmer than before. It is important that householders in receipt of efficiency measures are educated and provided with sufficient information to judge that they are heating their home appropriately. It should also be acknowledged that the standard cost-effective measures such as loft insulation are not applicable for nearly two million hard to treat homes, and the alternatives tend to be comparatively cost-prohibitive.

It is estimated that over one million households in Great Britain do not have access to a bank account of any kind. Such households are disallowed from accessing many of the cheapest energy products, as these may require that energy costs are paid through Direct Debit. Furthermore, unbanked households miss out on an important money advice service provided by financial institutions. These households are often also subject to digital exclusion, which also eliminates another crucial source of information.

The interaction of the different stakeholders associated with the issue of fuel poverty is complex and warrants further study. Although there are options available to many of those at risk of fuel poverty, they may not be aware of these options. Furthermore, action often must be initiated by the household itself, which may be difficult for the vulnerable or isolated. Guidance services are available, but there is certainly scope for an increased level of guidance within this sector.

8 BIBLIOGRAPHY

All URLs cited in this section were accessed in August 2009.

Chapter 1

Atkinson, A.B., Cantillon, B., Marlier, E. and Nolan, B. (2001), *Indicators for social inclusion in the European Union*, Oxford, OUP.

Baker, W and Starling, G (2003), *Predicting fuel poverty at the local level – Final report on the development of the Fuel Poverty Indicator*, Centre for Sustainable Technology UWE and Townsend Institute for International Poverty Research

BBC (2009) *Thousands 'facing fuel poverty'*, BBC News
<http://newsvote.bbc.co.uk/mpapps/pagetools/print/news.bbc.co.uk/1/hi/business/8146954.stm> Published: 12th July 2009.

Brazier, K., Waddams Price, C., Mathieu, L., and Wang, W. (2006), *Identifying Fuel Poverty Using Objective and Subjective Measures*, Centre for Competition Policy CCP Working Paper 06-1

BRE (2001), *The Government's Standard Assessment Procedure for energy rating of dwellings: 2001 edition*, BRECSU report BRE, Garston, 2001

BRE DTI DEFRA (2006), *Fuel Poverty Methodology Documentation*, July 2006 Minor revision September 2006

Cole, R.J. (2000), *Fuel Poverty: A Costly Lesson, A review of Cutting the Cost of Cold*. Ed: J. Rudge and F. Nicol IN Building Research and Information, Vol.28 (5), 2000

Collins, K. (2000), *Cold, cold housing and respiratory illnesses*, IN: *Cutting the Cost of Cold*, Ed: J. Rudge and F. Nicol, E & FN Spon pp36-47, p46

CSE (2001), *Competitive energy markets and low income consumers*

DEFRA/BERR (2008), *The UK Fuel Poverty Strategy 6th Annual Progress Report*

Darby (2000), *Making it obvious: designing feedback into energy consumption*. Proceedings, 2nd International Conference on Energy Efficiency in Household Appliances and Lighting. Italian Association of Energy Economists/ EC-SAVE programme.

DTI/DEFRA (2001), *The UK Fuel Poverty Strategy*, DTI/DEFRA

E.on (2003), *Power in good hands: corporate social responsibility report 2003*
<http://www.eon-uk.com/about/860.aspx>

Fahmy, E and Gordon, D (2007), *Updating the Fuel Poverty Indicator for England*. Centre for Sustainable Technology UWE and Townsend Institute for International Poverty Research

Gordon D (2004), *Response to the Fuel Poverty Consultation by Dave Gordon*, July 2004

<http://www.bris.ac.uk/poverty/press%20and%20consultations.html>

Townsend Centre for International Poverty Research

Healy, J. D (2004), *Housing, fuel poverty and health – a Pan-European analysis*, Ashgate, ISBN-10: 0754642186

Healy, J.D and Clinch, J.P (2004), *Quantifying the severity of fuel poverty, its relationship with poor housing and reasons for non-investment in energy saving measures in Ireland*, *Energy Policy* 32 (2004) 207-220

HMSO (1968), Ministry of Housing and Local Government (1968) *Design Bulletin 6: Space in the Home*, HMSO, London.

Milne, G. and Boardman, B. (2000), *Making cold homes warmer: the effect of energy efficiency improvements in low-income homes*. A report to the Energy Action Grants Agency Charitable Trust. Energy Policy Volume 28, Issues 6-7, June 2000, Pages 411-424

Morrison, C and Shortt, N. (2007), *Fuel poverty in Scotland: Refining spatial resolution in the Scottish Fuel Poverty Indicator using a GIS-based multiple risk index*, Health & Place, Volume 14, Issue 4, December 2008, Pages 702-717

National Energy Action (2004), *Fuel poverty in the United Kingdom: a review of statutory energy efficiency programmes for low-income households*

NEA (2005), National Energy Action, *Campaigners Claim Energy Prices are Biggest Threat to Fuel Poverty Targets* <http://www.nea.org.uk/campaigners-claim-energy-prices-are-biggest-threat-to-fuel-poverty-targets>

NRFC – National Right to Fuel Campaign (2002), *Fuel Poverty Definition – using disposable income* NRFC

Oreszczyn, T., Hong, S.H., Ridley, I. and Wilkinson, P (2006), *Determinants of winter indoor temperatures in low income households in England*. Energy and Buildings **38** (2006) 245 - 252

Palmer, G. MacInnes, T. and Kenway, P. (2008), *Cold and Poor: an analysis of the link between fuel poverty and low income*, New Policy Institute, London

Pither, A., Moore, R. (2006), *Investigation to assess the merits of different fuel poverty indicator tools*, Energy Efficiency Partnership for Homes

Salvage, A. (1993), *Cold Comfort*, London: Age Concern Institute of Gerontology.

The Poverty Site (n.d.) - The UK site for statistics on poverty and social exclusion

<http://www.poverty.org.uk/index.htm> accessed August 2009

Wilkinson, P., Landon, M., and Stevenson, S. (2000), *Housing and winter death: epidemiological evidence*. IN: *Cutting the Cost of Cold*, Ed: J. Rudge and F. Nicol, E & FN Spon, pp25-35 (p30)

Wright, F (2004), *Old and Cold: Older People and Policies Failing to Address Fuel Poverty*, *Social Policy and Administration* Vol **38**, No.5, October 2004

Chapter 2

Age Concern/Help the Aged (2009), *Response to European Commission consultation on financial exclusion*, available at

<http://www.ageconcern.org.uk/AgeConcern/Documents/Ref1609EUFinancialInclusion.pdf>

Baker, W. (2006), *Social Tariffs – a solution to fuel poverty? A report to UNISON*, Centre for Sustainable Energy/National Right to Fuel Campaign

British Fenestration Rating Council, n.d. Details of the BFRC calculation may be found at <http://www.bfrc.org/pdf/GGF%20calculations%20leaflet.pdf>

Buildings Research Establishment (2008), *SAP 2005: The Government's Standard Assessment Procedure for Energy Rating of Dwellings (9.82 specification)*, published on behalf of Defra. Available at http://projects.bre.co.uk/sap2005/pdf/SAP2005_9-82.pdf

Defra (2007), *UK Insulation Sector Supply Chain Review: Final Report*, London: The Stationery Office

Defra press release, 11 September 2008:

<http://www.defra.gov.uk/news/2008/080911a.htm>

Defra/BERR (2008), *Sixth Fuel Poverty Annual Progress Report*, joint publication by the Department for the Environment, Food and Rural Affairs and the Department for Business, Enterprise and Regulatory Reform

Defra/eaga (2008), *You're in safe hands: The Warm Front Scheme Annual Report 2007/08*, joint publication by the Department for the Environment, Food and Rural Affairs and eaga plc, available at

<http://www.warmfront.co.uk/files/warm-front-report-08.PDF>

Department of Trade and Industry (2001), *The UK Fuel Poverty Strategy*, London: The Stationery Office

Department of Work and Pensions (2008), *Income Related Benefit Estimates of Take-Up in 2007-08*, available at

http://research.dwp.gov.uk/asd/income_analysis/jun_2009/0708_Publication.pdf

Energy Saving Trust (2009), *Ban energy inefficient property*,

[http://www.energysavingtrust.org.uk/Resources/Daily-news/Moving-home-and-energy-efficiency/EST-Ban-energy-inefficient-property/\(energysavingtrust\)/274178](http://www.energysavingtrust.org.uk/Resources/Daily-news/Moving-home-and-energy-efficiency/EST-Ban-energy-inefficient-property/(energysavingtrust)/274178)

European Union (2005), *Directive 2005/32/EC of the European Parliament and of the Council*, Official Journal of the European Union, L 191/29

European Union (2009a), *Commission Regulation (EC) 244/2009*, Official Journal of the European Union, L 76/3

European Union (2009b), *Working documents on possible energy labelling (pursuant to Directive 92/75/EEC) for boilers*. Available at

http://ec.europa.eu/energy/efficiency/ecodesign/doc/forum/2009_06_24/2009_06_24_boilers2.pdf

Fuel Poverty Advisory Group (2009), *Seventh annual report*, DECC

HM Government press release (2008):

<http://www.number10.gov.uk/Page16807>

HM Treasury 388 (2008), *Budget 2008: Stability and opportunity: building a strong, sustainable future*, London: The Stationery Office

HM Government (2009), *The UK Low Carbon Transition Plan: National Strategy for Climate and Energy*, London: The Stationery Office

House of Commons Environment, Food and Rural Affairs Committee 37 (2009), *Energy Efficiency and Fuel Poverty, Third Report of Session 2008-09*, London: The Stationery Office

Jobcentre Plus (2009), *Jobcentre Plus Annual Report 2008-2009*, London: The Stationery Office

Market Transformation Programme (2007), *Briefing Note BNDG02: BFRC Ratings of known window types*. Available at <http://www.mtprog.com/spm/download/document/id/618>

O'Dea, C., Phillips, D., and Vink, A. (2007), *A Survey of the UK Benefit System*, Institute of Fiscal Studies Briefing Note. Available at <http://www.ifs.org.uk/bns/bn13.pdf>

The Office of the Deputy Prime Minister (2006), *Domestic Heating Compliance Guide*, Communities and Local Government Publications

Ofgem (2008), *Monitoring suppliers social programmes 2007-08*, The Office of the Gas and Electricity Markets

Ofgem (2009), *Ofgem Social Action Strategy 2009*, The Office of the Gas and Electricity Markets

Seasonal Efficiency of Domestic Boilers in the United Kingdom, n.d.

<http://www.sedbuk.com>

United Kingdom (2000), *Warm Homes and Energy Conservation Act 2000*, London: The Stationery Office

United Kingdom Statutory Instrument No. 2531 (2000), *The Building Regulations 2000*, London: The Stationary Office

United Kingdom, Statutory Instrument No. 188 (2008), *The Electricity and Gas (Carbon Emissions Reduction) Order 2008*, London: The Stationery Office

United Kingdom, Statutory Instrument No, 1905 (2009), *The Electricity and Gas (Community Energy Saving Programme) Order 2009*, London: The Stationery Office

Chapter 3

Baldock, M. (2006), *Domestic Metering Innovation*, Report for Ofgem, February 2006. [_Accessed 24 August 2009](#)

http://www.ofgem.gov.uk/Markets/RetMkts/Metrng/Smart/Documents1/14527-Metering%20Innovation_Decision%20document_final.pdf

BERR (2001), *UK Fuel Policy Strategy*.

<http://www.berr.gov.uk/files/file16495.pdf> accessed August 09

Boardman, B., Darby, S., Killip, G., Hinnells, M., Jardine, C.N., Palmer, J., Sinden, G. (2005), *40% House*, Environmental Change Institute, Oxford.

BRE Report (2008), Energy Analysis Focus Report, *A study of hard to treat homes using the English House Condition Survey*, BRE, Garston

Burgess, J. and Nye, M. (2008). *Re-materialising energy use through transparent monitoring systems*. Energy Policy, **36** (12), 4454-4459.

DEFRA (2008a), *The UK Fuel Poverty Strategy 6th Annual Progress Report*. Department for Environment, Food and Rural Affairs Publications, London.

DTI (2001), *Smart Metering Working Group Report*. Department of Trade and Industry, London.

DTI (2006),. *The Energy Challenge: Energy Review*. Department of Trade and Industry, London.

DTI (2007), *Meeting the Energy Challenge (Energy White Paper)*. Department of Trade and Industry, London.

Henderson, J. (2004), *Comparison of running costs for different heating options in hard to treat flats*. Report for the EST. BRE, Garston.

Hong, S.H., Oreszczyn, T. and Ridley, I. (2006), *The impact of energy efficient refurbishment on the space heating fuel consumption in English dwellings*. Energy and Buildings, 38(10), 1171-1181.

Hong, S.H., Gilbertson, J., Oreszczyn, T., Green, G. and Ridley, I. (2009), *A field study of thermal comfort in low-income dwellings in England before and after energy efficient refurbishment*. Building and Environment, 44(6), 1228-1236.

Milne, G. and Boardman, B. (2000), *Making cold homes warmer: the effect of energy efficiency improvements in low-income homes: A report to the Energy Action Grants Agency Charitable Trust*. Energy Policy, **28** (6-7), 411-424.

Palmer, G., MacInnes, T. and Kenway, P. (2008), *Cold and Poor: An Analysis of The Link between Fuel Poverty and Low Income*. New policy Institute, London.

Pitcher, I. (2005), UK hard to treat group. *UK heat pump study*. Report for Energy Efficiency Partnership for Homes

Preston, I., Baker, W. (2006), *Quantifying rural fuel poverty-interim report*. Report to EAGA Partnership Charitable Trust. CSE, Bristol.

Preston, I., Moore, R., Guertler, P. (2008), *How Much? The Cost of Alleviating Fuel Poverty*, Report to the EAGA Partnership Charitable Trust. CSE, Bristol.

Roberts, S. (2008), *Energy, equity and the future of the fuel poor*. Energy Policy, **36** (12), 4471-4474.

Walker, G. (2008), *Decentralised systems and fuel poverty: Are there any links or risks?* Energy Policy, **36** (12), 4514-4517.

Warm Front (n.d.) <http://www.warmfront.co.uk/> accessed 09 August 2009.

Warm Homes and Energy Conservation Act 2000. The Stationary Office 2000. <http://www.hmsso.gov.uk/acts/acts2000/20000031.htm> accessed 09 August 2009

Chapter 4

A Decent Home (2006), *Definition and Guidance for Implementation*, June 2006. Department for Communities and Local Government.

Age Concern (n.d.) <http://www.ageconcern.org.uk/AgeConcern/help-with-heating.asp> accessed August 09.

Baker, W and Starling, G (2003), *Predicting fuel poverty at the local level – Final report on the development of the Fuel Poverty Indicator*. Centre for

Sustainable Technology UWE and Townsend Institute for International Poverty Research.

BERR (n.d.), Fuel Poverty Advisory Group <http://www.berr.gov.uk/energy/fuel-poverty/fpag/index.html> accessed August 09.

BERR (2001), *UK Fuel Policy Strategy*.
<http://www.berr.gov.uk/files/file16495.pdf> accessed August 09.

Boardman, B. (2000), *Introduction*, IN: *Cutting the Cost of Cold*, Ed: J. Rudge and F. Nicol, E & FN Spon, 209-221.

Brazier, K., Waddams Price, C., Mathieu, L., and Wang, W. (2006), *Identifying Fuel Poverty Using Objective and Subjective Measures*, Centre for Competition Policy CCP Working Paper 06-1.

Breast Cancer Care (2009), *Heating bill help*.
www.breastcancercare.org.uk/forum/heating-bill-help-t22199.html accessed August 09.

British Gas (n.d.), *Here to Help*. <http://www.britishgas.co.uk/energy-efficiency/products/home-insulation/help-on-benefits.html> accessed August 09.

Care and Repair (n.d.) <http://www.careandrepair-england.org.uk/> accessed August 09.

Cavity Insulation Guarantee Agency (n.d.) <http://www.ciga.co.uk/> accessed August 09.

Charities Aid Foundation (2009), *A million children suffered fuel poverty last winter*, charity states. 14 July 2009.
<http://www.cafonline.org/default.aspx?page=17792> accessed August 09.

Climate Change Challenge website

<http://www.climatechangechallenge.org/Index.htm> accessed August 09.

Communities and Local Government (2009), *The Government's consultation on Community Energy Saving Programme*

<http://www.communities.gov.uk/publications/planningandbuilding/communityenergysaving> accessed August 09.

Consumer Action Group (2006), *Consumer Forums - Fuel poverty issues*

<http://www.consumeractiongroup.co.uk/forum/general-consumer-issues/40014-fuel-poverty-issues-grants.html> accessed August 09.

DEFRA (2008a), *The UK Fuel Poverty Strategy 6th Annual Progress Report*.

Department for Environment, Food and Rural Affairs Publications, London.

PB13176. <http://www.berr.gov.uk/files/file48036.pdf>

DEFRA (2008b), *Save Money, Save Energy: Government takes action on family fuel bills* (2008) News Release 11 September 2008. Ref: 300/08

<http://www.defra.gov.uk/news/2008/080911a.htm> accessed August 09.

DEFRA (2009), *NI 187 Tackling fuel poverty - % of people receiving income based benefits living in homes with a low and high energy efficiency rating*.

<http://www.defra.gov.uk/environment/localgovindicators/ni187.htm> accessed August 09.

Directgov (n.d.a), *Winter Fuel payments*.

http://www.direct.gov.uk/en/MoneyTaxAndBenefits/BenefitsTaxCreditsAndOtherSupport/Inretirement/DG_10018657 accessed August 09

Directgov (n.d.b), *Cold weather payments*.

http://www.direct.gov.uk/en/MoneyTaxAndBenefits/BenefitsTaxCreditsAndOtherSupport/Inretirement/DG_10018668 accessed August 09.

Directgov (n.d.c), *Crisis Loans*..

http://www.direct.gov.uk/en/MoneyTaxAndBenefits/BenefitsTaxCreditsAndOtherSupport/On_a_low_income/DG_10018856 accessed August 09.

Directgov (n.d.d), *Keeping your home*.

<http://mortgagehelp.direct.gov.uk/index.html> accessed August 09.

E.On (n.d.a), *Energy Efficient Products*. http://www.eonenergy.com/At-Home/Going-Green/Energy-Efficiency-Products/?WT.mc_id=Energy_Efficiency_Products&WT.svl=8

accessed August 09.

E.On (n.d.b), *Guidance and CaringEnergy*. <http://www.eonenergy.com/At-Home/Going-Green/Energy-Saving-Advice/Guidance-And-Caring-Energy.htm>

accessed August 09.

Easier.com (2008), *Fuel poor not benefiting from social tariffs*, 7 March 2008.

www.easier.com/view/finance/household_bills/gas_and_electricity/article-166520.html accessed August 09.

Energy Action Scotland (n.d.) <http://www.eas.org.uk/> accessed August 09.

Energy Efficiency Partnership for Homes (n.d.) <http://www.eeph.org.uk/>

accessed August 09.

Energy Retail Association (n.d.) <http://www.energy-retail.org.uk/aboutus.html>

accessed August 09.

Energy Saving Trust (n.d.) www.energysavingtrust.org.uk accessed August 09.

Financial Services Authority (2009), *Money Made Clear*. April 2009.

http://www.moneymadeclear.fsa.gov.uk/pdfs/bank_accounts.pdf accessed August 09.

Fletcher, R. (2009), *New payment method 'could reduce fuel poverty'* .
<http://www.experianpayments.com/news-and-events/new-payment-method-could-reduce-fuel-poverty.html> accessed August 09.

Geddes, N. (2009), *Approaches to Providing Disability and Employment Information*. PhD thesis, Loughborough University.

Hampton Fuel Allotment Charity (2009), *Local charity has another successful year*, January 2009. <http://www.hfac.co.uk/news.asp> accessed August 09.

Heatseekers (n.d.) <http://www.homeheatseekers.co.uk/about/> accessed August 09.

Help the Aged (2008), *Fuel Poverty. Help the Aged Policy Statement*. Help the Aged, London http://policy.helptheaged.org.uk/NR/rdonlyres/264B0773-9DCF-48A1-8E37-654DEF02643/0/fuel_poverty_statement_2008.pdf accessed August 09.

Help the Aged (2009), *Pensions and Benefits. Fuel Poverty*
http://www.helptheaged.org.uk/en-gb/Campaigns/PensionsBenefits/FuelPoverty/fuel_pov_whatwearedoing.htm
accessed August 09.

Home Advisory Service (2009), *Warm Front Scheme Failing Fuel Poor* - 29/07/2009 <http://www.homeadvisoryservice.co.uk/warm-front-scheme-failing-fuel-poor.html> accessed August 09.

Isleworth & Hounslow Charity Limited (n.d.)
<http://www.iahcharity.org.uk/grants.htm> accessed August 09.

Keep Warm Keep Well (n.d.)
<http://keepwarmkeepwell.direct.gov.uk/index.html> accessed August 09.

Low Carbon Buildings Programme (n.d.)

<http://www.lowcarbonbuildings.org.uk/home/> accessed August 09.

Macmillan (2008), *What do you think about fuel poverty?*

<http://share.macmillan.org.uk/share/forums?topic=1007464> accessed August 09.

Monroe F. and Marks S. (2002), *The Fuel Picture. CAB clients' experience of dealing with fuel suppliers*. National Association of Citizens Advice Bureaux June 2002.

National Energy Action (2008), *Ending Fuel Poverty: a Factor Four Approach* (2008) news release 16/07/08 <http://www.nea.org.uk/financial-inclusion-is-key-to-tackling-fuel-poverty-factor-four-report> accessed August 09.

National Energy Action (n.d.), *Warm Homes Campaign*

<http://www.nea.org.uk/warm-homes-campaign-2009/> accessed August 09.

Olsen, N. (2002), *Why fuel poor means health poor*. Green futures, 23 September 2002.

<http://www.forumforthefuture.org/greenfutures/articles/601244> accessed August 09.

Plumbing Park (2009), *Baxi, Warm Zone, BGC and Veolia Water Outsourcing address fuel poverty in off-mains gas areas*. 23 June 09.

http://www.plumbingpark.co.uk/plumbing_hvac_article13152.html accessed August 09.

Public Accounts Committee (2009), *The Warm Front Scheme, Thirty-ninth report of session 2008-09*. 24 July 2009. House of Commons Public Accounts Committee.

Shelter (2009), *Paying for heating*,
http://england.shelter.org.uk/get_advice/paying_for_a_home/paying_for_heating accessed August 09.

Ofgem Social Action Strategy (2005),
<http://www.ofgem.gov.uk/Sustainability/SocAction/Pages/SocAction.aspx>
accessed August 09

Third Party Payments Creditor Handbook (2006), *Shared Services – Customer Payments of the Department for Work and Pensions*, Norcross, Blackpool. Sept 2006. <http://www.dwp.gov.uk/publications/specialist-guides/> accessed August 09.

uSwitch (n.d.) <http://www.uswitch.com/gas-electricity/?AID=10280264>
accessed August 09.

Utilities Act 2000. The Stationary Office 2000.
<http://www.hmsso.gov.uk/acts/acts2000/20000027.htm>

Warm Front (n.d.) <http://www.warmfront.co.uk/> accessed August 2009.

Warm Homes and Energy Conservation Act 2000. The Stationary Office 2000. <http://www.hmsso.gov.uk/acts/acts2000/20000031.htm>

Warm Zones (n.d.) <http://www.warmzones.co.uk/> accessed August 09.

White Paper on Energy (2007), *Meeting the Energy Challenge*. Department of Trade and Industry, May 2007. CM 7124.

Wright, F. (2004), *Old and Cold: Older People and Policies Failing to Address Fuel Poverty*. *Social Policy & Administration*, Vol. **38**, No.5, October 2004, pp.488-503.

Chapter 5

Cheng, W. and Wellman, B (2005), *Minding the Cyber-gap: the internet and social inequality* in *The Blackwell Companion to Social Inequalities* by Romero, M. and Margolis, E. WileyBlackwell. London

Collard, S. and Kempson, E. (2005), *Affordable Credit: The way forward*. Joseph Rowntree Foundation, York.

Department for Culture, Media and Sport/Department for Business, Innovation and Skills (2009) *Digital Britain*. TSO, Norwich.

Department for Work and Pensions (2008), *The Social Fund: A new approach*. <http://www.dwp.gov.uk/docs/social-fund-new-approach.pdf>

GfK (2008), *Affordable Credit Research*
www.financialinclusion-taskforce.org.uk/documents/research/gfk_affordable_credit_report_2007_Aug%2008.pdf

Financial Inclusion Taskforce (2008), *Access to affordable credit: second wave survey of Growth Fund catchment areas*
http://www.financialinclusion-taskforce.org.uk/documents/research/gfk_2nd_wave_policy_implications_paper.pdf

Financial Inclusion Taskforce (2009), *Financial Inclusion: More important than ever*. www.financialinclusion-taskforce.org.uk/documents/papers/taskforce_report_for_budget09.pdf

Gardner, J. and Oswald, A. (2002), *Internet Use: the digital divide*. University of Warwick Working Paper.

HM Treasury (1999), *Access to Financial Services*. HMSO: Norwich.

HM Treasury (2004a), *Child Poverty Review*. HMSO: Norwich.

HM Treasury (2004b), *Promoting Financial Inclusion*. HMSO:Norwich.

HM Treasury (2007a), *Financial Inclusion: the way forward*. HMSO: Norwich.

HM Treasury (2007b), *Financial Capability: the Government's long-term approach*. HMSO:Norwich.

HM Treasury (2009), *Progress towards the shared goal on access to bank accounts*

www.hm-treasury.gov.uk/financial_inclusion_bankaccounts.htm

Johnston, R.J., Gregory, D., Pratt, G. and Watts, M. (2001), *The Dictionary of Human Geography*, Blackwell, Oxford.

Joseph Rowntree Foundation (2008), *DWP Social Fund Consultation*

Kempson, E. and Whyley, C. (1999), *Kept Out or Opted Out? Understanding and combating financial exclusion*. Bristol, Policy Press.

Kenway, P. (2007), *A Snapshot of Financial Inclusion: Policy and Practice in the UK 2007*. Dorking: Friends Provident Foundation.

Meadows, P., Ormerod, P. and Cook, W. (2004), *Social Networks: Their role in access to financial services in Britain*. National Institute Economic Review, no. 189. July.

McKay, S. and Collard, S. (1999), *Debt and financial Exclusion*, in Pantazis, C., Gordon, D and Levitas, R. *Poverty and Social Exclusion in Britain*. Policy Press.

Morris, E. (2009), *Independent Review of ICT User Skills*. HMSO: Norwich.

Office for National Statistics (2008), *First Release Internet Access 2008*.

www.statistics.gov.uk/pdfdir/iahi0808.pdf

Save the Children and the Family Welfare Association (2007), *The Poverty Premium*.

www.savethechildrenwatermar.org.uk/en/docs/poverty_briefing.pdf

Annex A THE UK BENEFITS SYSTEM

As described in the main body of this report, the UK's benefits system is highly complex, and the names and types of benefits have changed markedly over the past decade. This annex provides a tabular overview of benefits currently available, following a report by the Institute of Fiscal Studies.

Benefit	Guideline value	Expenditure (£m)	Number of Claimants (2006-07)
Benefits for families with children			
Child benefit	Up to £20 per child per week	10,146	7,378,400
Child Trust Fund	Minimum of £250 voucher	176	Unknown
Child tax credit	£545 per annum (family element)	11,700	5,577,000
Statutory Maternity Pay	90% of average gross weekly earnings	1,296	Unknown
Maternity allowance	£123.06 or 90% of average gross weekly earnings	175	28,700
Guardian's allowance	£14.10 per week	2	3,100
Education maintenance allowance	£30 per week	553	545,370
Benefits for unemployed people			
Income-based Jobseeker's allowance	Up to £64.30 for single people aged 25 or over	1,962	716,900
Contribution-based Jobseeker's allowance	Up to £64.30 for people aged 25 or over	478	161,100
New Deal	Details are on the Directgov website	82	151,310
Job grant	Up to £100 one-off payment for people without children	40	Unknown
Benefits for people on low incomes			
Income support	Variable	6,823	2,134,710
Working tax credit	£1890 per annum (basic element)	6,200	1,988,000
Housing benefit	Up to 100% contribution towards rental costs	14,858	4,039,700
Discretionary housing payments	Variable	18	122,330
Council tax benefit	Up to 100% reduction on council tax bill	4,072	5,096,600
Social Fund payments	Variable	444	3,321,000
Benefits for elderly people			
Basic retirement pension	£95.25 per week for a single person	43,127	11,785,670

(contributory)			
Basic retirement pension (non-contributory)	£57.05 per week	34	22,460
Earnings-related retirement pension (State Second Pension)	Variable	10,502	Unknown
Pension credit	Tops income up to £130 per week for a single person (Guarantee Credit)	6,869	2,730,940
Winter fuel payments	£250 one-off, £400 for over 80s	2,015	11,719,000
Concessionary television licences	Equivalent of £142.50 per annum	488	4,012,000
Benefits for sick and disabled people			
Statutory sick pay	£79.15 per week	85	Unknown
Incapacity benefit (now known as Employment and Support allowance)	Up to £64.30 during assessment phase, up to £95.15 during main phase	6,545	1,440,930
Severe disablement allowance (no longer available)	£57.45 per week plus age-related addition	904	270,700
Disability living allowance	Maximum amount of £119.45	9,156	2,860,790
Attendance allowance	Maximum of £70.35 per week	4,149	1,503,850
Carer's allowance	Maximum of £50.35 per week	1,191	463,500
Independent Living Funds	Maximum of £455 per week	256	20,003
Motability	Variable	10	460,000
Industrial injuries benefits	Maximum amount of £143.60 per week	752	335,420
War pensions	Variable	1,030	212,535
Benefits for bereaved people			
Widows' and bereavement benefits	£2000 lump sum	797	58,190
Industrial death benefit (for deaths before April 1988)	Maximum of £95.25	39	9,000
Other benefits			
Christmas bonus	£10 one-off payment	145	Unknown
Other small benefits	Variable	1	Unknown

Table A-1: Overview of benefits available in the UK. Adapted from O'Dea et al (2007)

Annex B VULNERABLE HOUSEHOLDS

The Government pays particular reference to vulnerable households: those households wherein under-heating the home may have a serious and possibly life-threatening impact upon an individual's health. There are several variations of vulnerability used in the literature:

1. The Government, in the fuel poverty annual reporting documents, defines a vulnerable household simply as one containing children or containing the elderly, sick or disabled.
2. The Warm Front target group, although designed to help these vulnerable households, is more specific than this. Households eligible for Warm Front measures split into three different types:
 - Householders aged 60 and over who receive low-income benefits
 - Householders who receive low-income benefits and are either pregnant or have a child aged under 16 years
 - Households with a relatively low income who claim a variety of benefits with a disability or mobility premium.
3. A third 'definition' of a vulnerable household is provided by the eligibility for the Cold Weather Payment (CWP). Unlike the Winter Fuel Payment, the CWP is means-tested. Eligibility criteria are:
 - Householders who receive Pension Credit or income-related Employment and Support Allowance with a support or work component in the main phase
 - Householders who receive Income Support, income-based Jobseeker's Allowance or income-related Employment and Support Allowance in the assessment phase, with one or more of the following:
 - A pensioner premium

- A disability premium
 - A disabled child premium
 - Child Tax Credit which includes a disability element
 - A child in the household who is under the age of five
4. Under CERT legislation, 40% of the carbon reductions must be achieved via measures applied to so-called 'Priority Group' households. Within the CERT statutory instrument (UK S.I. 188, 2008), this Priority Group is described in some detail. The group is split into three types:
- Recipients of low-income benefits, disablement benefits or pension credits
 - Households claiming Working Tax Credit or Child Tax Credit, while having an income of less than £15,592
 - Householders of age 70 and over.

This third group here is notable, as these consumers are not necessarily predominantly fuel-poor. This means that there is no guarantee that even the Priority Group measures delivered under the CERT legislation are focused upon people suffering from fuel poverty.

Clearly there is some overlap between these four types of vulnerable consumer, but they are not equivalent.

Annex C GLOSSARY AND ACRONYMS

BBA	Basic Banking Account
BERR	Department for Business, Enterprise and Regulatory Reform (superseded by BIS)
BFRC	British Fenestration Rating Council
BIS	Department for Business, Innovation and Skills
BRE	Building Research Establishment
BREDEM	Building Research Establishment Domestic Energy Model
CAB	Citizen's Advice Bureau
CERT	Carbon Emission Reduction Target
CESP	Community Energy Savings Programme
CFL	Compact Fluorescent Light-bulb
CHP	Combined Heat and Power
CIGA	Cavity Insulation Guarantee Agency
CSE	Centre for Sustainable Energy
CWI	Cavity Wall Insulation
CWP	Cold Weather Payment
DCLG	Department of Communities and Local Government
DECC	Department for Energy and Climate Change
Defra	Department for the Environment, Food and Rural Affairs
DTI	Department of Trade and Industry (superseded by BERR)
DH	Department of Health
DWP	Department of Work and Pensions
EC	European Commission
EE	Energy Efficiency
EEPH	Energy Efficiency Partnership for Homes
EHCS	English House Condition Survey
EPC	Energy Performance Certificate
ERA	Energy Retail Association
EU	European Union
FSA	Financial Services Authority

HIP	Home Information Pack
HTT	Hard-to-treat <i>Properties which cannot be brought up to an appropriate standard of energy efficiency with the readily available and cost-effective efficiency measures. HTT properties may include off-gas dwellings, homes with solid walls and some high-rise flats</i>
LSOA	Lower Super Output Area <i>The basic geographical unit used in the Census, each of which contains approximately 400 households. See www.statistics.gov.uk/geography/soa.asp</i>
MTP	Market Transformation Programme
NEA	National Energy Action
ODPM (DCLG)	Office of the Deputy Prime Minister (superseded by DCLG)
OECD	Organisation for Economic Co-operation and Development
Ofgem	Office of the Gas and Electricity Markets
POCA	Post Office Card Account
PPM	Prepayment meter
PV	Photovoltaic
SAP	Standard Assessment Procedure
SEDBUK	Seasonal Efficiency of Domestic Boilers in the UK
SWI	Solid Wall Insulation