



**Association for the
Conservation of
Energy**

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Fact-file: Families and fuel poverty

A report commissioned by the Energy Bill Revolution and written by Pedro Guertler and Sarah Royston

1 Introduction

It is now widely recognised that fuel poverty has severe effects on some of the most vulnerable people in society. However, while attention has focussed on older people in fuel poverty, families and children have been relatively neglected.

Until now, the scale of the problem for families has been poorly understood. Some evidence comes from a Barnardo's survey in which over 90 per cent of their staff said they worked with families in fuel debt. To pay their energy bills, many families were cutting back on essentials such as heating and food¹.

It is clear that fuel poverty can have severe and life-long effects on children. Studies show that long-term exposure to a cold home can affect weight gain in babies and young children, increase hospital admission rates for children and increase the severity and frequency of asthmatic symptoms. Children in cold homes are more than twice as likely to suffer from breathing problems, and those in damp and mouldy homes are up to three times more likely to suffer from coughing, wheezing and respiratory illness, compared to those with warm, dry homes².

What's more, struggling with high energy bills can impact adversely on the mental health of family members³. Fuel poverty may even affect children's education, if health problems keep them off school, or a cold home means there is no warm, separate room to do their homework⁴.

¹ In a survey of Barnardo's staff in England, over 90 per cent of respondents reported that families were cutting back on essentials to pay energy bills: 74 per cent said they were cutting back on food, and 84 per cent said they were cutting back on heating (Barnado's 2012)

² (Marmot Review Team 2011)

³ (Barnado's 2012) and (Marmot Review Team 2011)

⁴ (Liddell 2008)

There is now increasing recognition of these problems for families, and this focus may be sharpened by the proposed new Hills definition of fuel poverty (see Appendix I). It is vital that we understand the problem of fuel poverty for parents and children, and that future policies provide the support that these vulnerable families urgently need. This fact-file provides a snapshot of families and (dependent) children in fuel poverty at the start of this year. Below, it provides high-level estimates for the UK, England and the Devolved Nations. It then goes on to explore the nature and composition of fuel poverty amongst families and children, specifically in England, owing to the more detailed and up to date data than is currently available for the Devolved Nations.

1.1 Headline estimates

Across the **UK** at the start of 2013, approximately 1.6 million children, living in 930,000 families, are in fuel poverty. This is 130,000 children in 90,000 families more than in 2010, the year the latest official fuel poverty estimates are dated. In **England**, 696,000 families with dependent children are in fuel poverty (up by 60,000 families compared to 2010) – that’s more than one in ten families, and over 1.2 million children in all (up by 100,000 compared to 2010). Of these, nearly 1.1 million are children under the age of 16, of which nearly 390,000 are under the age of 5.

Table 1: Headline numbers of families and children in fuel poverty in UK and England in 2010 and 2013

| Number in fuel poverty | 2010 | 2013 | Increase, 2010-2013 |
|----------------------------|-----------|-----------|---------------------|
| Families in the UK | 840,000 | 930,000 | 90,000 |
| Children in the UK | 1,470,000 | 1,600,000 | 130,000 |
| Families in England | 636,000 | 696,000 | 60,000 |
| Children in England | 1,100,000 | 1,200,000 | 100,000 |

Unless otherwise stated, the remainder of this fact-file presents data for England at the start of this year only. Data for the devolved nations exists as follows:

- Northern Ireland: Northern Ireland House Condition Survey for 2011 (preliminary data)
- Scotland: Scottish House Condition Survey data for 2010
- Wales: Living in Wales Survey data for 2008

Table 2 compares our headline estimates across the UK. The data in italics are extrapolated as described below.

Table 2: Headline numbers of families and children in fuel poverty in UK, England and Devolved Nations

| Number in fuel poverty | UK 2013 | England 2013 | Northern Ireland 2013 | Scotland 2013 | Wales 2013 |
|---|------------------|--------------|-----------------------|----------------|----------------|
| All households | <i>5,300,000</i> | 3,900,000 | <i>340,000</i> | <i>760,000</i> | <i>300,000</i> |
| Families with dependent children | <i>930,000</i> | 696,000 | <i>85,000</i> | <i>89,000</i> | <i>60,000</i> |
| Dependent children | <i>1,600,000</i> | 1,200,000 | <i>146,000</i> | <i>153,000</i> | <i>101,000</i> |
| Under-16s | - | 1,100,000 | - | - | - |
| Under-5s | - | 390,000 | - | - | - |

It is only for England that we have to date been able to produce a very detailed update of its last survey (the English Housing Survey 2010) – by adjusting for changes to incomes, energy prices and home

energy efficiency improvements that have taken place since the survey up until the start of 2013⁵. As such, our UK-wide estimate in Table 2 of how many families and children are in fuel poverty today is simply extrapolated from the relationship between English and UK-wide fuel poverty in 2010 on the one hand (the latest year for which official UK-wide fuel poverty statistics are available⁶), and the relationship between this and Devolved Nation data at different points in time on the other. Only to a limited extent does our 2013 UK estimate take account of variations in the incidence of fuel poverty *between* Northern Ireland, Scotland and Wales, and of the variation in the number of children per family between all four nations.

2 The nature and composition of fuel poverty amongst children and in families

2.1 Severity of fuel poverty

Figure 1 and Table 3 show the severity of fuel poverty for families and children. Figure 1 illustrates (in shades of red) the number of children in families having to spend more than 10%, 15%, 20% or more of their income to cook, heat and light their homes adequately. Close to a third of fuel poor children live in households who have to spend more than 15% of their income on fuel, and nearly 170,000 children live in extreme fuel poverty – whose families have to spend more than 20% of their income to stay warm.

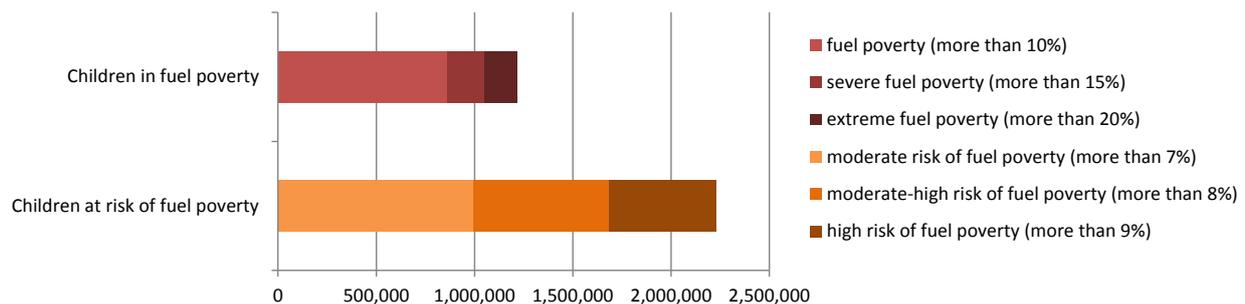


Figure 1: Severity of fuel poverty experienced by children, and children at varying degrees of risk of fuel poverty (England 2013)

In addition, Figure 1 highlights the number of children at risk of fuel poverty (in shades of orange) – those children living in families who, if faced with further price hikes this year, are moderately to highly likely to become fuel poor. More than half a million children live in households who – as they are already having to spend more than 9% on their energy – are highly likely to become fuel poor with just a small increase in energy prices. 685,000 children live in homes at moderate to high risk of fuel poverty because their families need to spend between 8 and 9% of their income on energy. This means a 25% increase in the annual fuel bill is enough to force them into having to spend more than 10%. This sort of increase is anticipated in the near term⁷, as a number of coal and oil-fired power plants are set to close from March, reducing electricity capacity margins at the same as necessitating larger imports of liquefied natural gas – at a high cost as global demand for LNG is currently very high⁸. This would

⁵ This so-called ‘now-cast’ of fuel poverty and the housing stock is the same we employed in our earlier briefing on ‘The impact on the fuel poor of the reduction in fuel poverty budgets in England’ (Guertler and Jansz 2012). See this earlier briefing for more detail on the ‘now-cast’ methodology.

⁶ See (DECC 2012).

⁷ (Channel 4 2012)

⁸ (Buchanan 2013)

severely worsen the situation for those children already in fuel poverty, and could easily result in an additional 1.2 million children in England falling into fuel poverty, doubling today's number. Across the UK, this is likely to mean 3.2 million children in fuel poverty.

Table 3: Number of families and children by severity of fuel poverty (England 2013)

| Severity of fuel poverty | Number of households with children | Number of children |
|---|------------------------------------|--------------------|
| Fuel poverty (more than 10%) | 488,000 | 860,000 |
| Severe fuel poverty (more than 15%) | 117,000 | 189,000 |
| Extreme fuel poverty (more than 20%) | 91,000 | 168,000 |

2.2 Tenure

As with overall fuel poverty, children who live in privately rented accommodation are worst hit. By tenure, the proportion of children in fuel poverty is presented in Table 4.

Table 4: Dependent children in fuel poverty by tenure (England 2013)

| | Number of children in fuel poverty | % of children in fuel poverty |
|-------------------------------------|------------------------------------|-------------------------------|
| Housing associations | 118,000 | 9.0% |
| Owner occupied homes | 677,000 | 9.2% |
| Local authority housing | 121,000 | 9.7% |
| Private rented accommodation | 301,000 | 14.7% |

This problem is compounded by the fact that housing costs are typically much higher when renting privately (this is not taken into account when calculating income for estimating fuel poverty). In 2010, average annual housing costs for families with dependent children in England – whom we consider to be in fuel poverty today, were:

- Local authority housing: £3,800
- Housing associations: £4,200
- Owner occupiers: £4,500
- Private rental: £7,400

This only hints at the additional difficulties faced by fuel poor families who are renting their accommodation privately, and provides a clear impetus for where resources to tackle fuel poverty needs to be prioritised.

2.3 Regional and national breakdown

By English region, the following table presents the share of children in each region in fuel poverty in ascending order (in blue), and the number of households this represents.

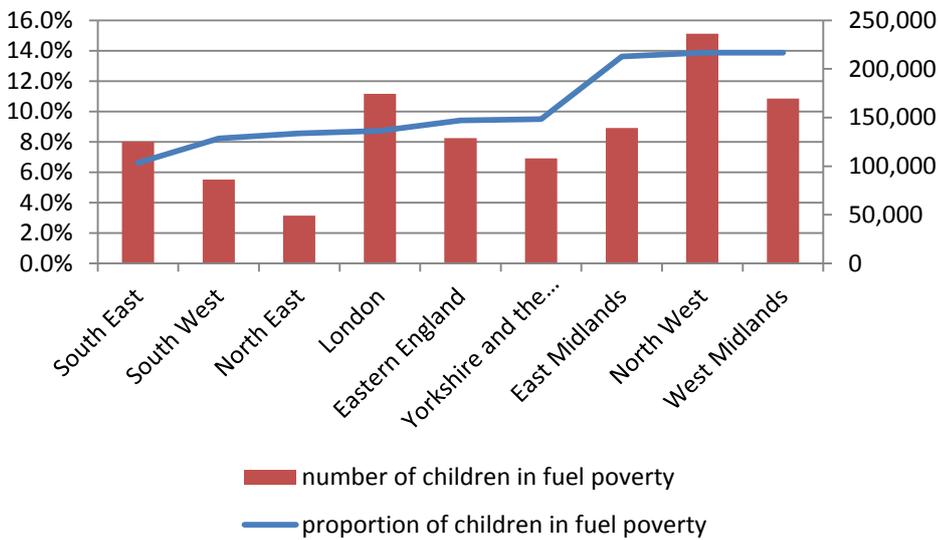


Figure 2: Proportion and number of children in fuel poverty in each English region (2013)

The largest numbers of children in fuel poverty live in the North West of England, London and the West Midlands. By far the highest incidence of children in fuel poverty is in the West Midlands, North West and East Midlands, as shown in Table 5.

Table 5: Proportion and number of children in fuel poverty in each English region (2013)

| Region | Number of children in fuel poverty | % of children in fuel poverty |
|--------------------------|------------------------------------|-------------------------------|
| South East | 125,000 | 6.6% |
| South West | 86,000 | 8.2% |
| North East | 49,000 | 8.6% |
| London | 174,000 | 8.7% |
| Eastern England | 129,000 | 9.4% |
| Yorkshire and the Humber | 108,000 | 9.5% |
| East Midlands | 139,000 | 13.6% |
| North West | 236,000 | 13.9% |
| West Midlands | 169,000 | 13.9% |

As explained in the introduction, we are not able to provide these figures for Northern Ireland, Scotland and Wales in 2013. However, the incidence of fuel poverty amongst children in each of the devolved nations is likely to be higher than in any English region, based on the fact that *overall* fuel poverty incidence in households in recent years have been considerably higher than England’s:

- **Today**, in England (2013, our ‘now-cast’ estimate): 17.9% of all households in fuel poverty, and:
 - 10.3% of households with dependent children in fuel poverty
- **Two years ago**, in Northern Ireland (2011, official provisional estimate): 42% of all households in fuel poverty, and:
 - 31.9% of households with dependent children in fuel poverty
- **One and a half years ago** in Scotland (2011, official estimate): 28.9% of all households in fuel poverty, and:

- 13.1% of households with dependent children in fuel poverty
- **Five years ago**, in Wales (2008, official estimate): 26.2% of all households in fuel poverty, and:
 - 20% of households with dependent children in fuel poverty

Figure 3 summarises the above figures graphically. Fuel poor families made up the largest proportion of overall fuel poverty in Wales, closely followed by Northern Ireland, and then England and Scotland.

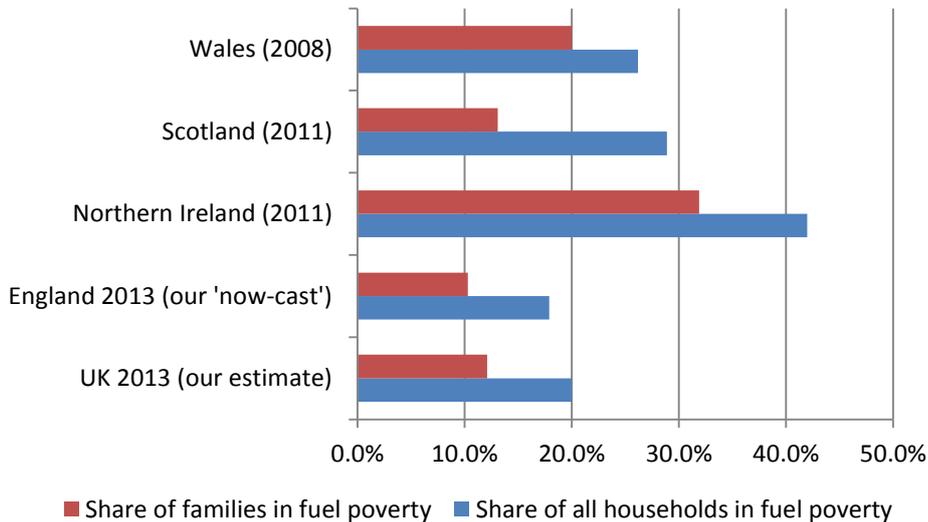


Figure 3: Overall fuel poverty incidence, and incidence amongst families with dependent children, at different points in time

2.4 Health

Amongst children under 16 who are in fuel poverty, there are, according to the English Housing Survey 2009:

- 3,600 who have heart problems
- 7,700 with mental health problems
- 11,000 experiencing learning difficulty
- 14,500 who have mobility problems
- 53,000 who have breathing problems

The English Housing Survey is known to underestimate the extent of health-related problems, not least because it is not a health survey in a clinical sense. Despite this, under-16s with breathing problems make up a statistically significant higher share of children who are fuel poor compared to those who aren't: 4.9% compared to 3.8%⁹. Although a fuel poor household might be warm – with the attendant consequences for having enough money to spend on (say) food and clothing – they are more likely to be living in a cold and possibly damp home, which in turn can of course both cause and exacerbate breathing-related illnesses.

In its review of the 'The Health Impacts of Cold Homes and Fuel Poverty' for Friends of the Earth in 2011, the Marmot Review Team found the following direct and indirect health impacts to result from cold homes and fuel poverty, which pose a risk to children's wellbeing¹⁰:

⁹ The result of a chi-square test, both with and without Yates' correction, finds the difference in the incidence of breathing problems between fuel poor and non-fuel poor children under 16 to be statistically 'very significant' ($p=0.035$ and 0.027 respectively).

¹⁰ (Marmot Review Team 2011). It is important to remember that fuel poverty does not necessarily equate to a cold home and vice versa.

Direct health impacts:

- Children in cold homes are more than twice as likely to suffer from respiratory problems than children in warm homes
- Mental health is negatively affected by fuel poverty and cold housing for any age group
- More than one in four adolescents living in cold housing are at risk of multiple mental health problems compared to one in 20 who have always lived in warm housing
- There are significant negative effects of cold housing in terms of infants’ weight gain, hospital admission rates, developmental status, and the severity and frequency of asthmatic symptoms

Indirect health impacts:

- Cold housing negatively affects children’s educational attainment, emotional well-being and resilience
- Fuel poverty negatively affects dietary opportunities and choices (the ‘heat or eat’ dilemma)

2.5 Rurality

The more rural areas have a higher incidence of fuel poverty among children than cities, towns and suburbs do, as Figure 4 and Table 6 show.

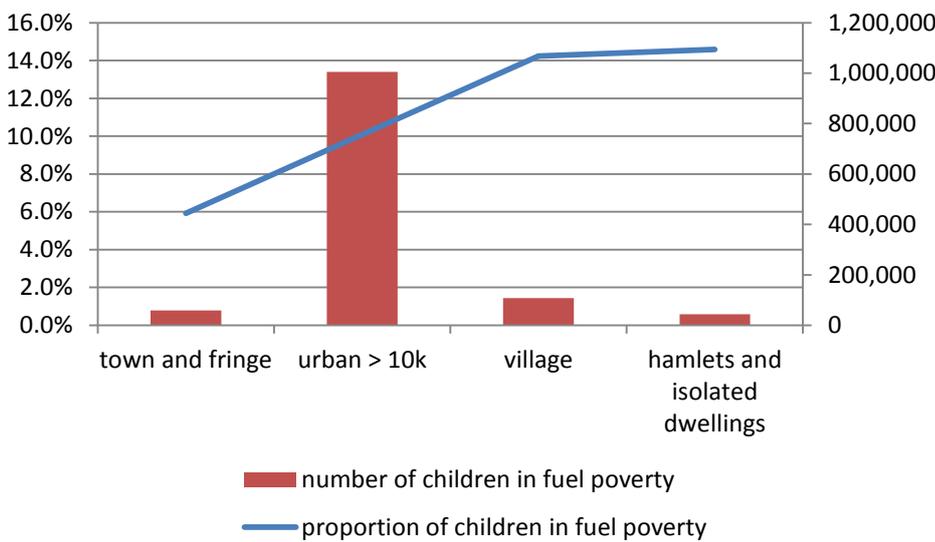


Figure 4: Number and proportion of children in fuel poverty, broken down by rural morphology (England 2013)

Table 6: Number and proportion of children in fuel poverty, broken down by rural morphology (England 2013)

| | Number of children in fuel poverty | % of children in fuel poverty |
|--------------------------------|------------------------------------|-------------------------------|
| town and fringe | 59,000 | 5.9% |
| urban > 10k | 1,005,000 | 10.1% |
| village | 108,000 | 14.2% |
| hamlets and isolated dwellings | 44,000 | 14.6% |

Closely related to this is the profile of fuels used for heating amongst families who are fuel poor. In more rural areas, families are more likely to be using more costly electricity or non-metered fuels to supply their heating. As Figure 5 shows, families in fuel poverty are more than twice as likely to be heating using fuels other than mains gas. More than one fifth of fuel poor families aren’t using mains gas to heat compared to less than one tenth of non-fuel poor families.

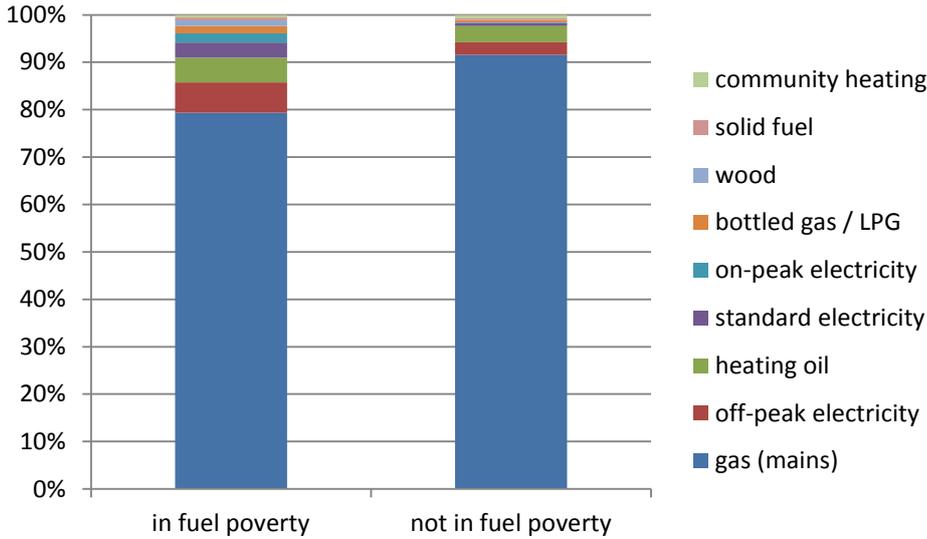


Figure 5: different main heating fuels used by families, broken down by fuel poverty status

2.6 Wall type

Wall types which leak more heat have always been linked to fuel poverty. Figure 6 below presents three groups of households – fuel poor families, fuel poor households with no (dependent) children, and non-fuel poor households – according to the major wall type¹¹ of the homes they live in.

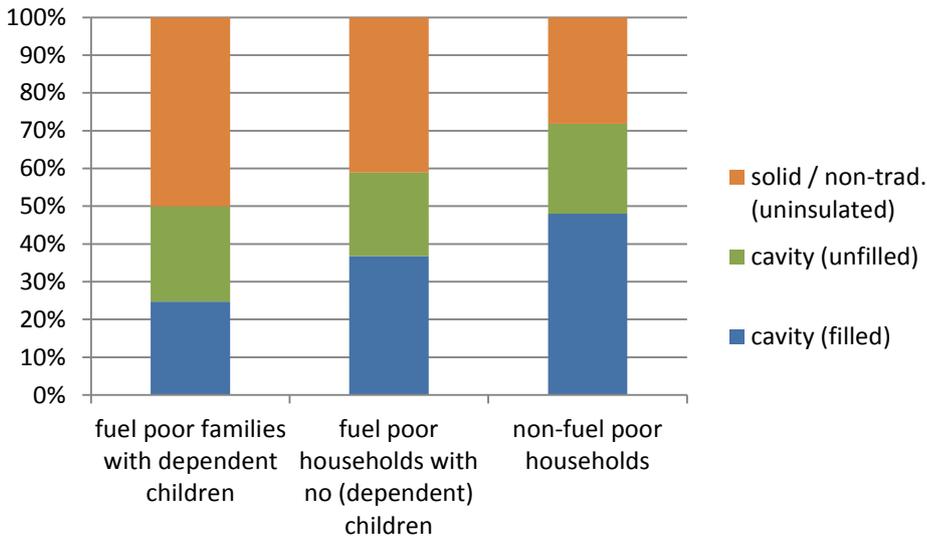


Figure 6: proportion of households living in properties with different major wall types (England 2013)

What is most striking about Figure 6 is not the expected finding that fuel poor households tend to live in more poorly insulated homes than non-fuel poor households do: it is that fuel poor families are significantly more likely to live in uninsulated solid-walled homes than other fuel poor households, as Table 7 reiterates.

¹¹ For this part of the analysis, we have ignored some far less common wall types: part-filled cavities and insulated solid walls. The households living in the homes with the three major wall types presented make up 95% of all households.

Table 7: proportion of households living in properties with different major wall types (England 2013)

| % | fuel poor families with dependent children | fuel poor households with no (dependent) children | non-fuel poor households |
|--|--|---|--------------------------|
| Solid / non-traditional walls (uninsulated) | 50.1% | 41.1% | 28.2% |
| Cavity walls (unfilled) | 25.2% | 22.1% | 23.8% |
| Cavity walls (filled) | 24.7% | 36.8% | 48.0% |

3 Tackling the problem – support available this year

In 2013, budgets in England for helping households to reduce their fuel bills are coming under an unprecedented squeeze. As we near the 2016 statutory deadline for eradicating fuel poverty¹², and as upward pressures on prices are poised to increase significantly, this could not come at a worse time. Building directly on our previous briefing on *The impact on the fuel poor of the reduction in fuel poverty budgets in England*¹³, we investigate the implications of this for fuel poor families with dependent children.

Figure 7 considers all policies that are nominally intended to bring down energy bills for low income and fuel poor households: Warm Front, CERT, CESP, ECO Affordable Warmth and ECO Carbon Saving Communities Obligation, Winter Fuel Payments, Cold Weather Payments, Warm Homes Discount and (in 2009/10 for comparison) Voluntary Price Support. The comparison of this year’s budget is with 2009/10, a year when fuel poverty levels were similarly high.

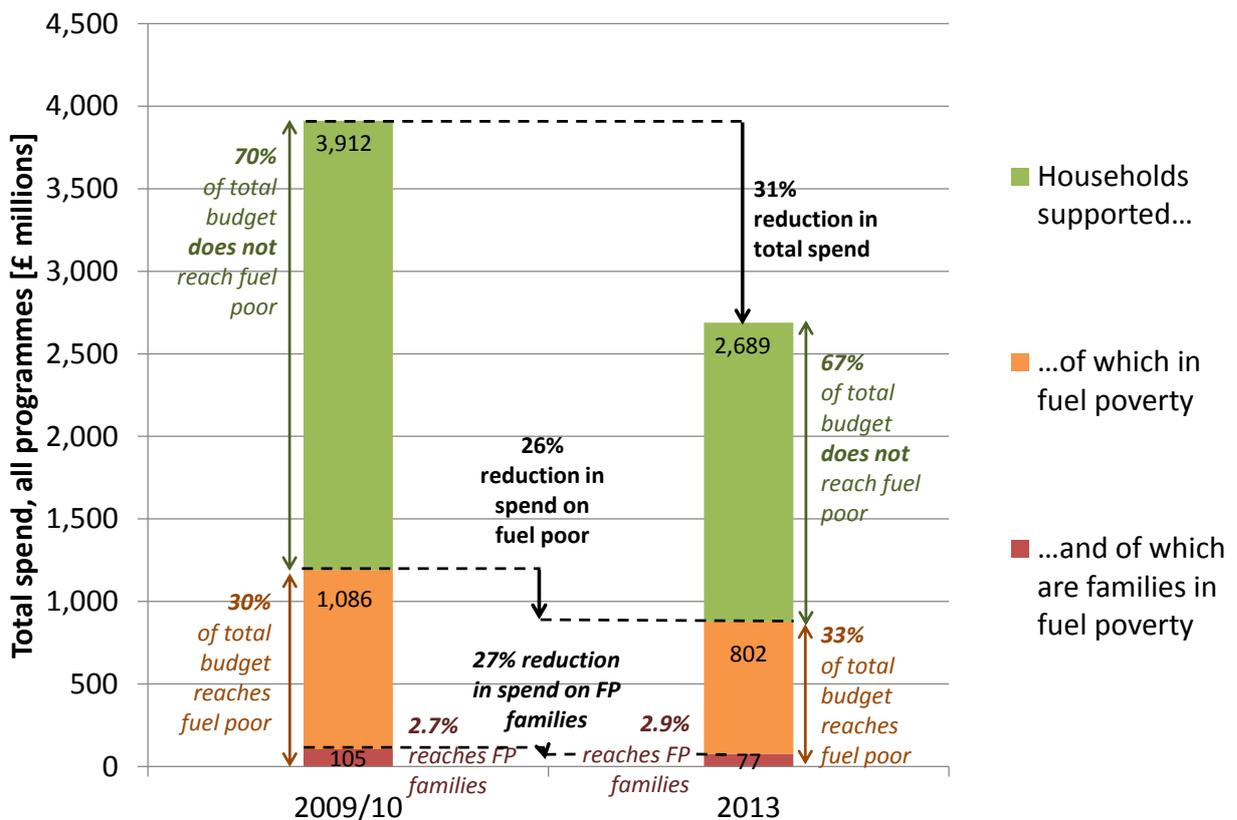


Figure 7: Total budgets to bring down energy bills and proportions reaching fuel poor households and families in 2009/10 and 2013 (England)

¹² (HM Government 2000)

¹³ (Guertler and Jansz 2012)

£105 million out of £3.9 billion reached fuel poor families in England in 2009/10, just 2.7% of the overall budget. With the 31% reduction to the overall budget in 2013, just £77 million is likely to reach fuel poor families with dependent children in England. Based on the probability of receiving support from any scheme in 2013, we estimate this to be spent on 29,000 families, just over 4% of those in fuel poverty receiving 2.9% of the budget.

Figure 8 is constructed in the same way, but only focuses on the budgets of programmes which deliver energy efficiency improvements, leaving out those which provide income or energy price support. Shedding light on budgets in this way is important because it reveals the extent to which programmes are delivering permanent bill reductions to low income and fuel poor households.

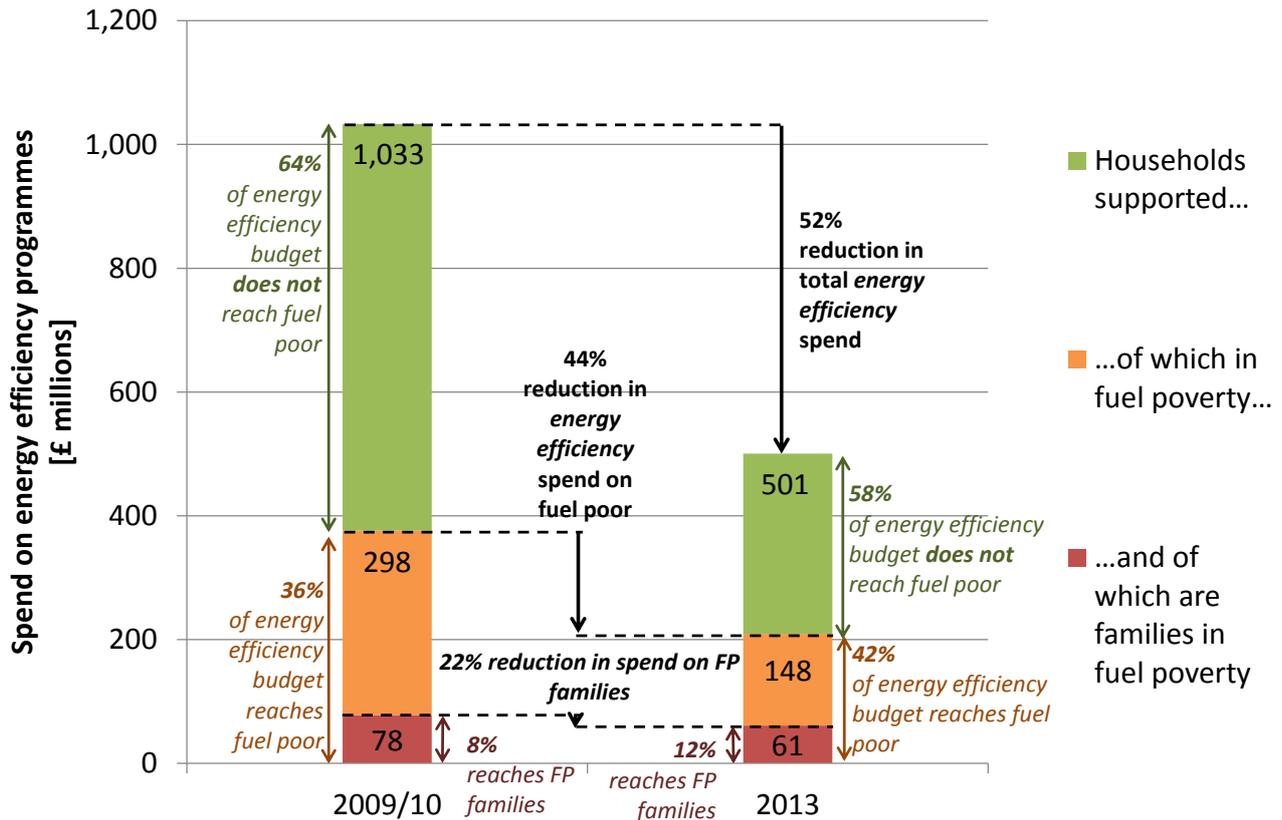


Figure 8: Households, fuel poor households and fuel poor families supported by energy efficiency programmes (England)

We find that overall, budgets for energy efficiency support have been more than halved compared to 2009/10, from over £1 billion to just over £0.5 billion, principally as a result of the loss of Warm Front. The expenditure on energy efficiency measures reaching fuel poor families has fallen from £78 million to £61 million, a reduction of 22%. Table 8 summarises the main results from Figure 7 and Figure 8.

Table 8: Results from Figure 7 and Figure 8 (continues on next page)

| | 2009/10 | | 2013 | |
|--|---------|-----|-------|-----|
| | £m | % | £m | % |
| Total budget to bring down energy bills (Figure 7), share of which... | 3,912 | 100 | 2,689 | 100 |
| ...reaches non-fuel poor households | 2,826 | 70 | 1,887 | 67 |
| ...reaches fuel poor households (including families) | 1,086 | 30 | 802 | 33 |
| ...reaches fuel poor families | 105 | 2.7 | 77 | 2.9 |

| | 2009/10 | | 2013 | |
|--|---------|-----|------|-----|
| | £m | % | £m | % |
| Energy efficiency budget to bring down energy bills (Figure 8), share of which... | 1,033 | 100 | 501 | 100 |
| ...reaches non-fuel poor households | 735 | 64 | 353 | 58 |
| ...reaches fuel poor households (including families) | 298 | 36 | 148 | 42 |
| ...reaches fuel poor families | 78 | 8 | 61 | 12 |

4 Conclusion

At a time of squeezed incomes and welfare, families and children are being hit particularly hard by rising energy costs. At the same time budgets to reduce energy bills have been very significantly reduced. As Ofgem's Chief Executive has warned this month, the UK's electricity market is also being squeezed as generating capacity is taken offline, forcing more gas imports at a time when imported gas is getting more costly. In England alone, this could have the effect of doubling the number of children in fuel poverty to 2.4 million if energy bills rise by 25%. In the UK as a whole, such a rise would double the number of children in fuel poverty from 1.6 million to 3.2 million. The only way to permanently reduce rising energy costs is by improving energy efficiency in children's homes. The benefits of doing so are clear, as are priority areas, such as the private-rented sector, homes off the gas network, and solid-walled homes.

These findings strongly support the argument of the Energy Bill Revolution campaign that the Government should recycle carbon taxes to make the homes of the fuel poor highly energy efficient. A centrally funded Government energy efficiency programme is the least regressive and 'most cost-effective means of making sustained reductions'² in the number of households in fuel poverty. The Energy Bill Revolution calculates there is enough carbon tax revenue to deliver energy efficiency measures to over half a million fuel poor homes every year, to bring nine out of ten homes out of fuel poverty and in time make every home in the UK highly energy efficient.

Appendix I – The proposed new definition of fuel poverty

In England, under the new definition of fuel poverty proposed to the Government by Professor John Hills, 1,160,000 families with dependent children (out of total of 2.5 million fuel poor households at the start of 2013¹⁴) are in fuel poverty. The number of dependent children in fuel poverty is just over 2.5 million – over one in five children and more than twice as many as under the current definition.

One of the main criticisms of the current definition has been that it does not ‘equivalise’ incomes for household size and composition. The proposed definition does so, which, in simple terms, means that a family of four with a household income of £30,000 is not, for fuel poverty measurement purposes, deemed to be equally well off as a retired couple with the same income. The proposed definition also measures income after housing costs, which are usually higher for families. These are the principal reasons why more families and children are considered to be fuel poor under the proposed definition than under the existing one. This is consistent with the method used to assess income poverty.

In November 2012, the Government consulted on a new definition based on Professor Hills’ proposals. DECC’s response to the consultation, and the extent to which these proposals are to be adopted, is due to be published later this year.

¹⁴ This is almost certain to be an underestimate because we have not modelled changes (almost certain to be increases) in housing costs since 2010.

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