Getting the measure of fuel poverty

Executive summary

Hills Fuel Poverty Review

CASE
CENTRE FOR ANALYSIS OF SOCIAL EXCLUSION

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Professor John Hills was commissioned in March 2011 by Chris Huhne MP, then Secretary of State for Energy and Climate Change, to conduct an independent review of the fuel poverty definition and target. The terms of reference included examining fuel poverty from first principles, including its causes and impacts, considering the best way of measuring the problem and assessing the cost-effectiveness of policies in relation to the measurement approach taken. The review related only to fuel poverty in England. A consultative interim report was published in October 2011 and the final report in March 2012. Key points from both are summarised here.

Key findings

Fuel poverty is a serious problem from three main perspectives (poverty, health and well-being and carbon). The evidence confirms that, as set out by the Warm Homes and Energy Conservation Act 2000, the heart of the problem is the overlap of facing unreasonable energy costs and having a low income.

This overlap is not what the current official indicator of fuel poverty captures. While it has some strengths, this indicator also has serious weaknesses. It can misrepresent trends and encompass households that clearly are not poor. Although a single indicator, it attempts to reflect both the extent and the depth of the problem.

We have therefore proposed an alternative measurement framework focused directly on the overlap of high costs and low income. This contains twin indicators: a Low Income High Costs indicator (which measures the extent of the problem) and the fuel poverty gap (which measures its depth).

This framework is designed to help identify the people at risk of fuel poverty and those with the greatest difficulties, and to compare the effectiveness of different policies.

Using this framework, projected future trends in fuel poverty are profoundly disappointing. In our central projections, the key fuel poverty gap indicator will rise by more than 50 per cent between 2009 and 2016. There is no sensible way of measuring fuel poverty which shows the problem will be eliminated on current trends by 2016.

However, the framework shows that interventions targeted at the core of the problem – especially energy efficiency policies focused on low income households – can make a substantial difference.

The Government should set out a renewed and ambitious strategy for tackling fuel poverty reflecting the challenges we lay out and the framework we propose for understanding them.

Introduction

Fuel poverty has been a social policy concern for a number of decades. The adoption of the Warm Homes and Energy Conservation Act 2000 (WHECA) marked a milestone in recognising the issue and defined the core problem as affecting those "living on a lower income in a home that cannot be kept warm at reasonable cost."

The adoption of the Act was followed by publication of the 2001 UK Fuel Poverty Strategy, which set out the Government's policy framework for ensuring that no-one lived in fuel poverty by 2016.

Importantly, the strategy also set out the current official indicator of fuel poverty. This is based on a household's energy requirements as a proportion of income. If these energy costs are more than 10 per cent of income, the household is said to be in fuel poverty. Under this indicator the number of English households in fuel poverty fell by three-quarters from 5.1 million households in 1996 to 1.2 million in 2004. This figure then rose again more than threefold – to 4.0 million households in 2009.

What causes fuel poverty?

The review has concluded that fuel poverty is a serious and widespread problem whose primary drivers are those set out in WHECA – low incomes and high costs. In the domestic sector, energy needs and costs reflect both household characteristics and dwelling characteristics which vary widely. This means that households with similar levels of income have an unequal ability to convert cash into warmth and other energy needs (such as lighting and cooking). This inequality is at the heart of fuel poverty. It results from:

- *Different dwelling characteristics* – especially different levels of thermal efficiency, reflecting the poor quality housing that persists in England;
- *Different household characteristics* – for example, pensioners and disabled people may spend more time at home and therefore require more energy;
- *The prices paid for energy* – households pay different prices for home energy, with the best tariffs for gas and electricity available for customers who shop around for on-line tariffs and pay by direct debit. But such tariffs are out of reach for some households, particularly low-income ones. Households off the gas grid also face difficulties.

At the same time, Government policies both affect the price of energy and support improvements in energy efficiency. The effect on the bills faced by households on different incomes depends on how these policies are delivered in practice.

What are the impacts of fuel poverty?

For many, health and well-being impacts are at the heart of concerns about fuel poverty. While the rate of excess winter deaths (EWDs) caused directly by fuel poverty is uncertain, even if only 10 per cent were due to fuel poverty this would imply thousands of deaths a year and more than the number of fatalities on our roads. This is only part of wider concerns about the health effects of living at low temperatures, ranging from depression to cardio-vascular disease.

Aside from the personal cost of illness and fatalities caused by living at low temperatures, the associated medical treatment comes at a cost to the NHS. There is also evidence of wider social impacts such as social isolation and poor educational attainment in young people.

The evidence on the precise temperatures needed to avoid problems is, however, less clear than some suppose and we need more detailed evidence for two reasons. First, so that the general temperature standards used to measure fuel poverty reflect the temperatures at which people who do not face financial constraints live. Second, to see whether the evidence implies the need for separate temperature standards that allow for the particular vulnerability of the elderly, infants, and of some groups affected by disability and long-term illness.

Measuring fuel poverty

Given that fuel poverty is a serious and distinct problem, measuring it accurately is vital. Good measurement can tell us how widespread and deep the problem is, who is affected and how well policies are tackling it.

While WHECA correctly identifies the nub of the issue – the overlap of low incomes and high costs – this is not what is measured by the current official indicator.

The current indicator

The UK Fuel Poverty Strategy 2001 defines a household as fuel poor if it would need to spend more than 10 per cent of its income to achieve adequate energy services in the home, including reaching particular temperature standards.

The main advantage of this indicator is that it is based on *required* rather than *actual* consumption. This means that those under-heating relative to need are not wrongly considered to not be fuel poor. This needs-based approach sets fuel poverty measurement in the UK apart from international standards and is a feature that should be retained.

However, this indicator also has serious weaknesses, including its undue sensitivity to energy prices and to technical considerations within the calculation, such as precise temperature standards and accuracy of income reporting. The trends it reports do not reflect changes in the underlying problems well and its definition can encompass households that clearly are not poor. Part of the difficulty is that, although a single indicator, it attempts to reflect both the extent and the depth of the problem.

We therefore recommend that the Government should change its approach to fuel poverty measurement away from the current '10 per cent' ratio indicator.

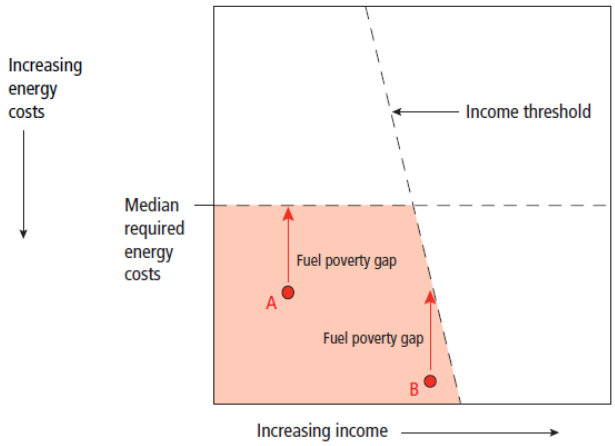
The Low Income High Costs indicator and the fuel poverty gap

Given the flaws with the current indicator, the review explored a variety of measurement options. While each of these had drawbacks, they also suggested valuable features of a measurement framework.

From this analysis we developed a new framework consisting of twin indicators: a Low Income High Costs (LIHC) indicator to measure the extent of fuel poverty and a fuel poverty gap to measure its depth.

As its name suggests, the LIHC indicator defines fuel poverty as the combination of facing high costs and having a low income. This approach means setting two thresholds – one for income and one for costs. A fuel poor household fails both (Figure 1). The fuel poverty gap is the reduction in required spending which would take a household out of fuel poverty.

Figure 1: Representation of the Low Income High Costs indicator and fuel poverty gap



Our threshold for low income is set at 60 per cent of median income (in line with standard poverty measurement conducted by the Department for Work and Pensions) *plus* the individual household's modelled energy needs. By adding bills in this way, we capture those households that are pushed into poverty by their energy costs. We measure incomes after housing costs and adjusted for household type and size, because some households need more and some less to achieve the same standard of living.

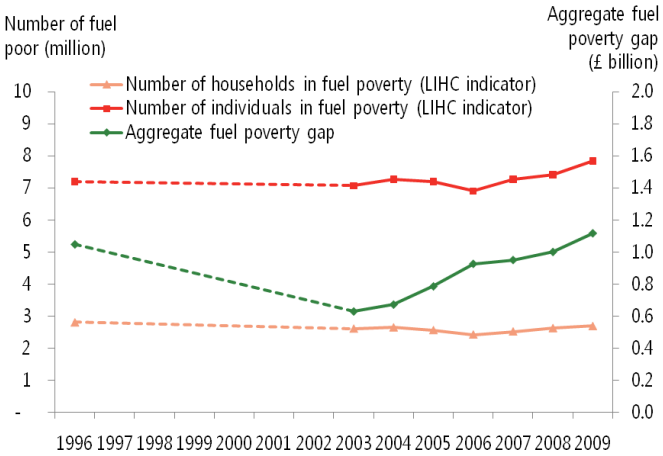
Our high costs threshold is the contemporary median modelled bill, representing 'typical' energy requirements for households in England. Any bills higher than this represent 'high costs' under our indicator. As with income, we adjust the modelled bills for household composition and size, because a 'reasonable' bill for a large household could be an 'unreasonable' bill for a single person. In the light of consultation responses we agree that the way of doing this proposed in our interim report made too great an adjustment between different kinds of household. Our final recommendations are designed to reflect the economies of scale within energy bills in a better way.

One important advantage of setting the costs threshold in this way is that the indicator becomes relative, tracking the yearly changes in costs for *all* households, not just for the fuel poor. This means that the indicator measures whether low-income households are falling behind general trends in the improvement of England's housing stock. In this way, the

indicator reflects the key concern that different households have an unequal ability to convert cash into warmth and other energy needs.

Under this indicator in 2009 2.7 million households, containing 7.8 million individuals, were fuel poor and the total fuel poverty gap – representing the excess costs faced by the fuel poor compared to typical costs – stood at £1.1 billion (Figure 2).

Figure 2: Twin indicators of fuel poverty, 1996-2009



The Government should adopt a new indicator of the extent of fuel poverty under which households are considered fuel poor if:

- **they have required fuel costs that are above the median level; and**
- **were they to spend that amount they would be left with a residual income below the official poverty line.**

The Government should count the number of individuals in this position as well as the number of households they live in.

The Government should adopt a new indicator of the depth of fuel poverty as represented by the average and aggregate fuel poverty gap, defined as the amounts by which the assessed energy needs of fuel poor households exceed the threshold for reasonable costs.

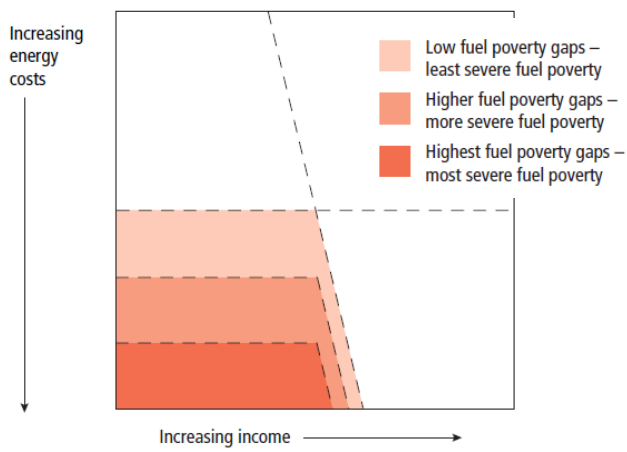
We recognise that if targets are set on the basis of literal eradication of the problem, this is very hard (although not impossible) to achieve using a relative measure such as the one we propose. We therefore provide analysis of measurement approaches based on fixed energy standards. These approaches suffer from drawbacks, notably the fact that any absolute standard runs the risk of becoming out of date. In addition, standards based simply on energy efficiency of homes omit the effects of other cost factors such as occupancy patterns and the tariffs people pay. We also considered whether a satisfactory 'absolute' version of the LIHC could be constructed, but found it hard to produce a consistent time series.

We conclude that using the relative LIHC indicator and fuel poverty gap for both measurement and objective-setting purposes is the approach most consistent with our overall analysis. While the relative approach could mean that there may always be some low-income households with costs above the median threshold, the key indicator for showing progress should be the aggregate fuel poverty gap. If this is reduced to a low level, then no low-income household can be left very far above the costs threshold.

Who is fuel poor?

The LIHC indicator helps us to develop a framework for identifying and targeting assistance at the households that need it most, starting with those most deeply affected (Figure 3) alongside the vulnerable. When developing policy, it must be recognised that it is difficult to target the fuel poor with very great precision. In practice a wider group will inevitably be targeted. However this is not necessarily a problem: low-income households just below the costs threshold would still benefit from bill reductions while high-costs households just above the income threshold would benefit from saving energy and reducing carbon.

Figure 3: Measuring the depth of fuel poverty



Our analysis shows a number of dwelling characteristics that are strongly associated with fuel poverty. For example, any low-income household in a home with an E, F or G energy efficiency rating is highly likely to be fuel poor.

Such households account for 90 per cent of the fuel poverty gap and 75 per cent of fuel poor households under the LIHC indicator.

The fuel poverty gap also provides a bridge between measurement and targeting. For example, just over half of the fuel poverty gap is accounted for by households receiving means-tested benefits and living in a home showing readily-checked features (such as being off the gas grid, or having solid walls or having been built pre-1945). However, a limitation is that receipt of means-tested benefits accounts for only 62 per cent of fuel poor households and the fuel poverty gap.

How to help increase incomes and lower costs

Current policy package

There is a broad range of policies in place to help tackle fuel poverty. Using funding either from consumers – since suppliers are expected to pass on the costs of obligations placed on them – or the Exchequer, these policies span the three drivers of fuel poverty: thermal efficiency, energy prices and incomes.

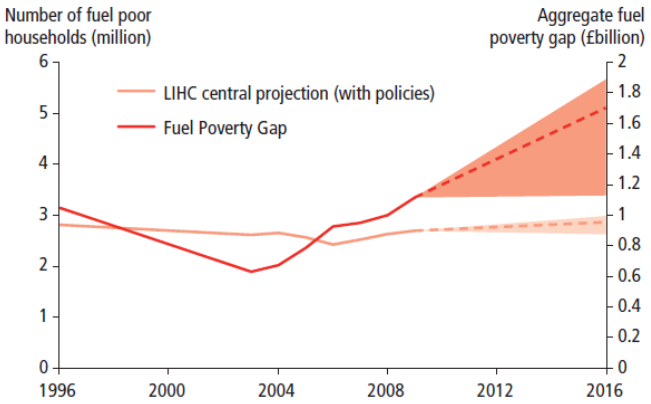
Policies have both positive and negative impacts on fuel poverty, with the net effect reflecting the balance between who pays, who benefits and the type of policy concerned. Some policies add costs for all consumers, while reducing them only for some. Where the beneficiaries are on low incomes, the net effect on fuel poverty is likely to be positive. On the other hand, where they are mainly better-off households, the impact will be less positive and could even be negative. One particular current issue is the potential distributional effect of the Energy Company Obligation (ECO) as currently proposed. With only one quarter of the policy going to 'Affordable Warmth', the package would be regressive overall. We cannot calculate precisely what the balance would need to be to avoid this, but it appears that over half of ECO would need to go towards this element.

Projections

We also examined what may happen to fuel poverty levels by 2016 (Figure 4) taking account of possible developments in energy prices and the wider economy, subject to large uncertainties (and some methodological limitations). It is clear that even allowing for these uncertainties, fuel poverty will not have been eradicated by 2016, however it is defined. Under our preferred indicator, our projections of fuel poverty in 2016 suggest that between 2.6 million and 3.0 million households will be fuel poor and the fuel poverty gap will rise on our central projection from £1.1 billion in 2009 to £1.7 billion in 2016. This depth of fuel poverty is, as one would expect, greatly affected by the level of fuel prices. Only at the most optimistic end of the range would the fuel poverty gap remain close to its 2009 level. This is profoundly disappointing.

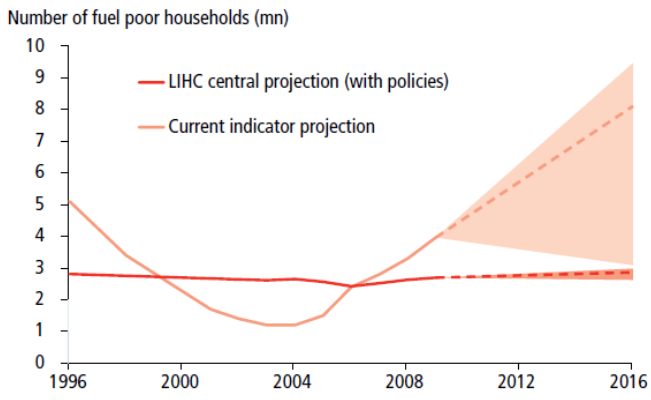
The report also looks at what the situation would be if there were no Government policies in place, showing that the policy package is expected to help keep fuel poverty levels lower than they would be, albeit only by about a tenth (looking at the fuel poverty gap).

Figure 4: Projections for twin indicators of fuel poverty



For comparative purposes we also set out projections for the current indicator, which show a range extending from 3.1 million to 9.2 million households (43 per cent of the total in England) in fuel poverty by 2016, highlighting the great sensitivity of the indicator to changes in fuel prices (Figure 5).

Figure 5: Projections under the current indicator of fuel poverty



We also show that the number of low-income households with energy efficiency levels or costs below absolute standards would fall more slowly over the years after 2009 than before then.

Making further progress

We use the framework to consider the cost-effectiveness of a range of broad policy options aimed at reducing fuel poverty, assessing them each on the same criteria, including fuel poverty impact, greenhouse gas emissions and cost-benefit analysis. Our options – amounting to stylised policy interventions, each with a budget of £500 million in 2016 – span the three key drivers of prices, income and energy efficiency.

The analysis suggests that policies to improve the thermal efficiency of the housing stock that are targeted on those with low incomes and have energy-inefficient homes would be the most effective at reducing the level of fuel poverty.

Policies analogous in some ways to Warm Front or the Affordable Warmth component of ECO would have the greatest focus on fuel poor households and would be the most cost-effective in achieving long-term reductions in the fuel poverty gap. They would also lead (along with the Carbon Reduction part of ECO) to the greatest reductions in carbon emissions. They would have very substantial net societal benefits in relation to cost, particularly when their distributional impact is allowed for.

Conclusion

At the end of the review it is clear that the problem of fuel poverty is both serious and widespread. Far from being eliminated it is likely to be worse in 2016 than it was in 2009, using our recommended indicator.

Effective future action requires a reinvigorated fuel poverty strategy. As well as the projected worsening rather than elimination of the problem, the measurement approach underpinning the 2001 Strategy is inappropriate. Also the context has changed since then, with combating climate change a still more urgent national priority, for example, and with the economic and fiscal crisis leaving more households vulnerable to the effects of rising prices.

While the scale of the challenge is daunting, our analysis shows that interventions targeted on the core of the problem can make a substantial difference. We hope that the framework we have developed provides some of the tools that will allow this to be done most effectively.

The Government – not just DECC but also other Departments – should set out a renewed and ambitious strategy for tackling fuel poverty, reflecting the challenges we lay out in the review's reports and the framework we have set out for understanding them.

For more information about the fuel poverty review and for the full text of the interim report (October 2011) and final report (March 2012) please see:

http://sticerd.lse.ac.uk/case/
http://www.decc.gov.uk/hillsfuelpovertyreview

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