

# Getting the measure of fuel poverty

Final Report of the Fuel Poverty Review: Summary and Recommendations

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# Summary and Recommendations

## Introduction and overview

1. This report marks the end of the independent review of fuel poverty commissioned by Chris Huhne MP, then Secretary of State for Energy and Climate Change, in March 2011.
2. The terms of reference for the review called, in essence, for an examination of three issues:
  - Whether 'fuel poverty' is, in fact, a distinct problem, or simply a manifestation of more general problems of poverty.
  - If it is distinct, how it is best measured and whether the current approach to doing this captures the problems most effectively.
  - The implications of measurement for the way we understand the effectiveness of the range of policy approaches to reducing it.
3. Following an extensive review of the evidence and consultations with stakeholders and having conducted our own detailed analysis, we published an interim report in October 2011. This covered the first two of these issues, presented our initial ideas, and set out a number of questions for further consultation. We are very grateful to the considerable number of organisations and individuals who responded to that consultation for their responses and the often very detailed attention which they had paid to our analysis and consultation questions. While the overwhelming balance of the consultation responses supported the core arguments presented in the interim report, some of them also raised some important issues which have helped us develop and refine our final proposals.
4. This report presents our final conclusions on the issues covered by the interim report. As we previously argued in Chapter 4 of the interim report, fuel poverty is not only a distinct, but also a serious national problem. However, the way in which its scale has been measured officially has had significant flaws, giving a misleading impression both of trends and of the effectiveness of policies to tackle it. This is mainly because the official indicator is based on comparing the ratio between households' energy spending needs and their income against a fixed threshold. This makes it unduly sensitive to changes in price levels as well as to technicalities within its calculation. The trends it reports do not reflect well those in the underlying problems, and its definition can encompass households that clearly are not poor. Part of the difficulty is that while a single indicator, it attempts to reflect both the extent and depth of the problem.
5. We therefore propose an alternative approach to measurement, focused on the way in which the problem is described in the Warm Homes and Energy Conservation Act 2000 (WHECA). This Act says – correctly, in our view – that we should be concerned about individuals in households

“living on a lower income in a home that cannot be kept warm at reasonable cost.” In our interim report we set out a specific alternative framework for measuring fuel poverty, focused both on the number of households and people with low incomes and high costs and on the depth of the problems they face – what we call the ‘fuel poverty gap’.

6. In Chapter 2 of this report we explain the final form that we suggest this indicator should take. Having considered the responses to our interim report very carefully, we believe that the framework for the indicator as originally designed was broadly correct although there was scope for improvement. In particular, we have made an important modification in terms of how to allow for household size and composition when considering what it is ‘reasonable’ for a given household to have to spend on energy in the home.
7. We have also considered the way in which the level of the threshold for reasonable costs could be set. We have examined a number of alternative options and proposals, but have concluded that retaining the median contemporary modelled energy requirement is the most robust level at which to set the boundary between ‘reasonable’ and ‘unreasonable’ costs. This decision has a number of implications, including the fact that the relative nature of our preferred indicator makes the literal eradication of fuel poverty extremely challenging (although not impossible). We discuss the implications of this and of alternative approaches below.
8. Using our framework, the main part of this report examines the implications of our approach for understanding the effectiveness of different policy approaches to tackling fuel poverty. It was not the remit of the review to produce a master plan for doing this. Rather our aim is to allow those who are central to the debate over policy both inside and outside government to understand what it would take to achieve particular aims and what can be achieved within particular resources.

9. Our analysis sets out the daunting scale of the challenge that would remain in 2016 given the current policy mix and framework, and official expectations for incomes and energy prices. On the central projection for our preferred measure, 8.5 million individuals within 2.9 million households will still be in fuel poverty, with an aggregate fuel poverty gap of over £1.7 billion, compared to a gap of £1.1 billion in 2009. This is a very long way from the elimination of fuel poverty that was the aim of WHECA and of the 2001 strategy for achieving it.

## The problem of fuel poverty

10. We set out in detail in our interim report (Chapters 3 and 4), the reasons why fuel poverty is a distinct and serious problem from several perspectives. We have seen nothing in the responses to that report which challenges this conclusion. Indeed some respondents suggested that our description understated its gravity. The issue is of concern:
  - From a poverty perspective: the households with high energy costs living in poverty or on its margins in 2009 faced extra costs to keep warm above those for typical households with much higher incomes adding up to £1.1 billion. These costs are largely outside the control of those households – given the capital investment that would be required to reduce them – except through trading off the temperatures at which they live against other necessities, exacerbating the difficulties faced by all on such low incomes.
  - From a health and well-being perspective: living at low temperatures as a result of fuel poverty is likely to be a significant contributor not just to the excess winter deaths that occur each year (a total of 27,000 each year over the last decade in England and Wales), but to a much larger number of incidents of ill-health and demands on the National Health Service and a wider range of problems of social isolation and poor outcomes for young people.

## SUMMARY AND RECOMMENDATIONS

- From a carbon reduction perspective: not only is the energy inefficiency of the homes of those living in fuel poverty a direct concern in terms of reducing carbon emissions, but fuel poverty also acts as a barrier to the implementation of other policies to mitigate climate change, since those on low incomes are least able to afford any increase in prices that may result from them.

11. One implication of this analysis is that the core problem from all three perspectives is one of the *overlap* between low income and the energy inefficiency of the homes people live in. This is precisely the problem described in the Warm Homes and Energy Conservation Act 2000 (WHECA), as affecting those “living on a lower income in a home that cannot be kept warm at reasonable cost.”

### Measuring fuel poverty

12. The central task for this review was to examine the way in which trends in fuel poverty and identification of those at risk from it have been measured and to suggest whether there might be a better alternative. In Chapter 5 of our interim report we set out in detail why we thought that the current official indicator – despite having important strengths – was flawed as a way of understanding both trends in the problem and who is at risk from it, and by implication of comparing the effectiveness of different policy approaches. As one example of these problems, it does not seem correct to suggest – as the current indicator does – that the scale of fuel poverty was reduced by four-fifths between 1996 and 2003, nor that it more than trebled between 2003 and 2009. Nor does it seem correct that some households with moderate or even higher incomes are counted as ‘fuel poor’ at times when energy prices are high, or that some households in poverty and with relatively high energy costs are counted as not being fuel poor at times when prices are low.

13. These problems arise not from any fundamental flaws in the elaborate exercise that is carried out each year to establish what the energy needs of

low-income households are, but from the particular mathematical way in which those needs are compared with incomes reported to the survey on which the assessment is based. This is to compare the ratio between the two with a fixed threshold, set at 10 per cent (on the basis of spending patterns 24 years ago). The result is an indicator that is highly sensitive to factors such as fuel prices, the precise assumptions made for what are seen as adequate temperatures for people to live at, and the incomes reported to a survey that is mainly not focussed on income measurement.

14. It is of course a major step to recommend changing the indicator used to monitor such an important problem. In doing so our motive is not to underplay the problem. Indeed it is precisely because the gravity of the problem is so great that appropriate measurement is important, avoiding feeding either misplaced complacency about progress or undue pessimism about whether policy is effective and focused on the correct targets.

15. Given the problems with the current indicator, we recommend that it ceases to represent the official indicator of fuel poverty. However, as the alternative approach we recommend below uses the same data and underlying modelling, it would be desirable to continue to publish the results in the current form for information purposes for some years at least.

**Recommendation 1:** The Government should change its approach to fuel poverty measurement away from the current ‘10 per cent’ ratio indicator.

16. The same data underpinning the current official indicator should be used to construct a more appropriate framework for the measurement of fuel poverty. Specifically we recommend that the Government should adopt a new approach based on directly measuring the overlap between low income and high costs.

**Recommendation 2:** 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.

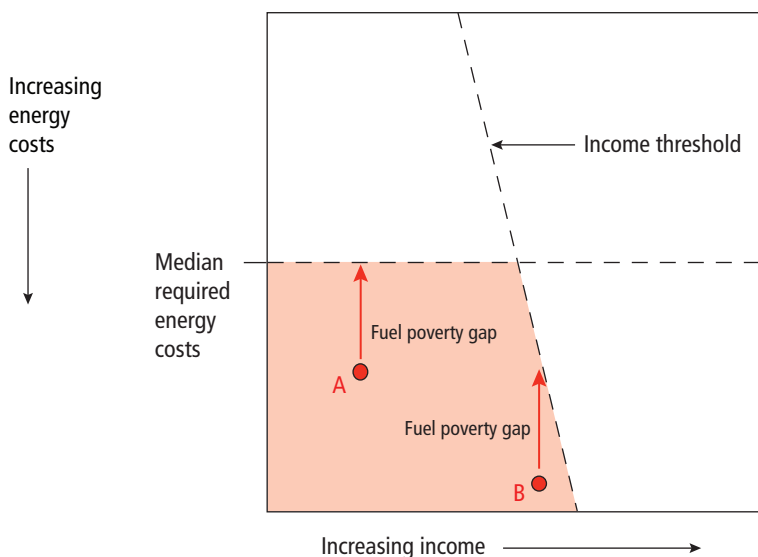
17. In addition to the 'headcount' series affected by fuel poverty, an integral part of the assessment of the problem should be an indicator of the depth of the problem.

**Recommendation 3:** 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.

18. This formulation is illustrated by Figure SR.1, with the shaded area in the bottom left hand corner representing the population that has both low incomes and high costs and the length of the vertical arrows representing the size of the fuel poverty gap for particular households within it.

19. The two key elements within this are the income threshold and the 'reasonable costs' threshold. We proposed a way of setting the income threshold in our interim report which has been uncontroversial. Indeed, the proposal to measure income after housing costs and adjusted for household size and composition was widely supported. The threshold itself should be set in parallel to the Government's general approach to the measurement of low income used in the Households Below Average Income series. This should include an allowance for each household's required energy costs, reflecting the way in which fuel bills can draw some people into poverty.

**Figure SR.1:** Recommended indicators of the extent and depth of fuel poverty



## SUMMARY AND RECOMMENDATIONS

**Recommendation 4:** The Government should measure incomes for fuel poverty purposes after housing costs and adjusted for household size and composition. The threshold should be set at 60 per cent of median income plus calculated household energy requirements.

20. By contrast, the responses to our consultation suggested that the way we proposed to set the threshold for reasonable costs was more controversial. In the light of the comments made, we agree that part of our initial proposal – that costs should be compared between households using the same adjustment factors as for incomes – was incorrect. This has the unintended effect of identifying too many smaller households as being fuel poor and too few larger ones. We discuss this set of issues in detail in Chapter 2 and its Annex and consider one interesting set of alternative proposals based on defining reasonableness in relation to energy requirements measured in £ per m<sup>2</sup> (rather than total costs per household adjusted for its type and size). We suggest however that making *no* adjustment for household size and composition would also be incorrect. We conclude that a *specific* set of adjustment factors should be used reflecting actual spending on fuel by different kinds of household with similar living standards. These are set out in Table 2.1 of Chapter 2.
21. Some respondents to the consultation also argued that our suggestion that the threshold for reasonable costs should be based on median required spending for all households was too unambitious. We are sympathetic to the concerns driving this position. However, we cannot see any way to establish a firm rationale for a different – higher or lower – proportion of median costs than the 100 per cent we originally proposed. On the one hand this is already a challenging threshold – identifying as many households and more individuals as having low incomes and high costs as the current official indicator on average over the last 13 years. On the other, it is hard to argue that it is ‘reasonable’ for households on incomes that are

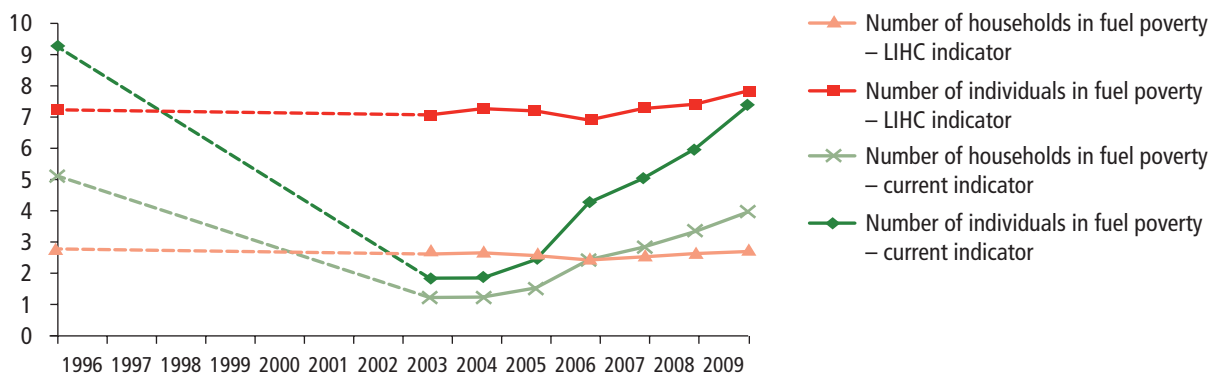
much lower than the national average to have to spend *more* than a typical household.

22. Some stakeholders also voiced concerns that setting the costs threshold at the level of contemporary median required costs created a ‘moving target’ problem under which the eradication of fuel poverty would become almost impossible. It is certainly true that our proposed relative indicator is sensitive to the potential problem of low-income households being left behind the rest of the population as contemporary standards improve, but we view it as an advantage that this risk is captured. We have considered – and present analysis on – alternatives to this approach, including the idea of setting the threshold in relation to the energy requirements of the best homes. However, we could not find a firm basis for such approaches.

**Recommendation 5:** The Government should set the reasonable costs threshold at the level of the contemporary median energy requirements for the population as a whole. The modelled bills for individual households should be adjusted for household size and composition – using a specific set of adjustment factors – when comparing them to this threshold.

23. 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 therefore also considered whether a satisfactory ‘absolute’ version of the LIHC could be constructed. We show the results of this approach in Chapter 2 and its Annex, but found it hard to produce a consistent time series. It is also rather complex to explain.

**Figure SR.2:** Number of households and individuals in fuel poverty under the proposed LIHC indicator and current indicator, 1996 and 2003-2009, England (millions)



Source: Fuel poverty data, 1996 and 2003-2009 (DECC)

24. The approach that we find most consistent with our overall analysis is to use the relative LIHC indicator and fuel poverty gap for both measurement and objective-setting purposes, while recognising that elimination is unlikely to mean literally reducing the problem to zero. There is a form of precedent for this in relation to the legal requirement to eliminate child poverty by 2020 which we explore in this report. Whilst the relative approach would mean that there may always be some low-income households with costs above the median threshold, we suggest the key indicator should be the scale of 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 threshold.

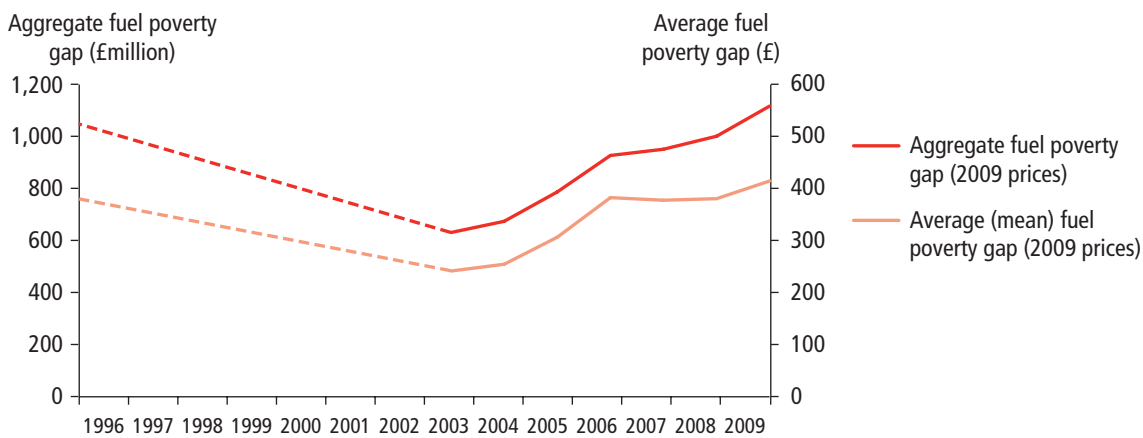
25. Using the fuel poverty gap in this way would have the additional advantages of putting most weight on monitoring the depth of the problem and focusing attention on tackling the hardship faced by those most severely affected. It would not lose its relevance over time and would maintain pressure to avoid low-income households being left behind as the rest of the housing stock is made more efficient. It would also provide a bridge between policy development and delivery on the ground – which we explore below.

**Recommendation 6:** The Government should use the LIHC indicator and fuel poverty gap as the basis for operational target setting. The fuel poverty gap in particular gives the best focus on the scale of the problem and progress in tackling it.

26. The result of these proposals in terms of the picture they would have shown since 1996 can be seen in Figure SR.2. The series showing the extent of fuel poverty measured on this ‘Low Income High Costs’ (LIHC) basis shows only a small decline in the number of *households* affected over the period, contrasting with the dramatic ‘V’ shape of the current official series. The two series have a very similar average over the period as a whole. The number of *individuals* identified by the LIHC indicator has grown slightly over time, as the kind of household most at risk has moved towards larger ones. In this case the number of individuals identified by our preferred indicator remained higher in 2009 than those identified by the current official series.<sup>1</sup>

<sup>1</sup> As we note in Chapter 2, the number of households identified in this way is very similar to that presented in the interim report, but the number of individuals is significantly higher as a result of the changed way in which we are allowing for household size.

**Figure SR.3:** Aggregate and average fuel poverty gaps under the proposed LIHC indicator, 1996 and 2003-2009, England



Source: Fuel poverty data, 1996 and 2003-2009 (DECC)

27. What has driven this trend? The LIHC indicator shows the impact of factors that have been pushing in opposite directions. The general improvement in energy efficiency – even in relative terms – of low-income households has tended to reduce fuel poverty. However, since 2004, these improvements have tended to be offset by rising prices, which means that more households on the margins of poverty have been pushed below the income threshold by their increased energy costs.
28. However, the main effect of changing prices over time has been on the depth of fuel poverty for those affected by it, as measured by the fuel poverty gap, both on average and in aggregate, shown in Figure SR.3. These fell in real terms between 1996 and 2003, but have both since increased, with the aggregate size of the problem reaching £1.1 billion by 2009, an average of £414 for each of the 2.7 million households affected. The aggregate fuel poverty gap in 2009 is higher – given the adjusted factors we use for setting the costs threshold – than it was in 1996, and more than three-quarters higher than it was in 2003, when fuel prices were at their lowest.

## Technical considerations

29. In the course of this review we have benefited greatly from the considerable amount of effort and expertise which has gone into assessing the energy requirements of different kinds of household. There remain, however, three important gaps in the available data.
30. First, it is correct that the focus should be on energy needs not actual spending, as the latter may reflect, for instance, people who spend little because they are living in the cold, precisely the problem that health concerns mean we want to avoid. But – as recent work by the Centre for Sustainable Energy and Loughborough University has demonstrated – it can be very enlightening to compare modelled needs and actual spending patterns, precisely to identify which kinds of household are in this kind of position. At present, it is only possible to do this through econometric analysis, embodying assumptions about how the patterns revealed by different surveys for spending and for need are related. It would be very valuable to be able to conduct this kind of comparison for the same households. This should become possible over the next year using data from DECC’s Energy Follow-up Survey.



**Technical Recommendation 1:** The Government should compare data that are due to become available in future on actual consumption patterns in homes with modelled spending requirements for the same households in order to identify the kinds of household that are at greatest risk of living at low temperatures and to provide information that would allow refinement of the way in which energy needs are currently modelled.

31. One fact which is already apparent from what we know of contemporary spending patterns is that even middle and high-income households do not spend as much as the modelling of energy needs suggests. The most likely explanation of this is that contemporary households, even when their resources are not especially constrained, do not keep their houses at as high a temperature as is assumed in the modelling. As we discussed in the interim report, the basis for those temperature standards is less firm than many have supposed. One of the features of the relative approach we have proposed for assessing which households have high costs is that it is fairly robust to the precise temperature standards used (unlike the current approach, which is highly sensitive to them). However, it would still be preferable if the temperature standards used in the general modelling reflected those chosen by contemporary middle-income households. Unfortunately we do not have data on the temperatures at which people are living that is more recent than 1991. This needs to be addressed and then used to inform the modelling of energy needs.

**Technical Recommendation 2:** The Government should reinstate a component to its surveys that allows an up-to-date assessment of contemporary behaviour in terms of the temperatures of people's homes. The information this provides should be used in the development of the fuel poverty measurement methodology.

32. At the same time, we believe there is a need for further research to understand the physiological, psychological and other impacts of living at certain temperatures in order to have confidence in the appropriateness of the temperature standards used, especially for people vulnerable to these impacts.

**Technical Recommendation 3:** Once this is done the evidence of the health effects of cold temperatures should be examined to establish whether it implies the need for separate temperature standards that allow for the particular vulnerability of the elderly and infants, and of some groups affected by disability and long-term illness.

33. A third data gap which we discussed in our interim report was that the modelling of the prices paid by households can at present only allow imperfectly for the ways in which those most at risk of fuel poverty may be on worse tariffs than others, that is, that the poor may be paying more. Data allowing a more direct assessment of the tariffs faced by particular households should become available later in 2012, as part of the Energy Follow Up Survey. At present neither the additional problems that this causes, nor the impact of interventions that reduce them, can be accurately assessed.

**Technical Recommendation 4:** Based on data available in future, the Government should examine the case for a more direct assessment of the tariffs actually paid by low-income households within the fuel poverty measurement methodology.

34. Another issue of concern in the way fuel poverty is calculated is the classification of extra costs benefits such as the Disability Living Allowance as general income, implying that households entitled to them are better off than those who are not, when they in fact reflect the requirement for extra income to achieve the same standard of living as others.

**Technical Recommendation 5:** Government should assess whether removing extra cost benefits such as Disability Living Allowance from the calculation of income in the fuel poverty measurement methodology would be appropriate.

### Identifying people at risk of fuel poverty

35. It is important that the measurement approach used by Government to understand fuel poverty can be linked through to the way policy interventions are designed and targeted at fuel poor households. There are certain principles that need to be considered in this context. For instance, it would be prohibitively expensive – and intrusive – to carry out a full property and income assessment to understand the fuel poverty status of all households. The experience gained from means-testing in other policy areas also suggests a need to avoid devising eligibility criteria which result in sharp cliff edges, such as the entitlement to assistance that depends on receipt of a narrow range of income-tested benefits.
36. In attempting to identify fuel poor households it would be naive to suggest that policies aimed at removing problems faced (in 2009) by 2.7 million households could be dealt with only by treating 2.7 million homes. In practical terms, a wider group will inevitably be targeted, adding of course to the cost of tackling the core problem. However, this is an area where assistance straying over a strict boundary of eligibility should not necessarily be seen as a problem – and can be a virtue. If a household is helped that is in poverty but has costs that are below the threshold, the help given can make an important difference to living standards and conditions. Similarly, if a household is helped that has an income above our threshold, but has high energy costs, that can still make a difference in terms of national energy efficiency and reduction of carbon emissions. Not being too stringent about precision targeting makes additional sense when
- one recognises that some households will move in and out of fuel poverty as other circumstances change, for example with the birth of a child.
37. Bearing in mind these principles, one of the great strengths of the framework we propose – and of the fuel poverty gap in particular – is that it becomes possible to make a bridge between the aggregate numbers and trends shown by the fuel poverty statistics and the ways in which practical policies can be directed on the ground to those most at risk. We explore the results of doing this in detail in Chapter 3. Several of the findings are instructive for policy design. For instance, 90 per cent of the fuel poverty gap is accounted for by households with low incomes also living in homes that have energy ratings of E, F and G.
38. One limitation is that the traditional proxy for low income of means-tested benefits receipt accounts for only 62 per cent of LIHC households and 62 per cent of the fuel poverty gap. However we show that within this group a small set of physical characteristics, which can be ascertained without an in-depth physical survey, could account for households with more than half the total fuel poverty gap. These are having oil, solid fuel or portable heating, living in a rural property off the gas grid, having solid walls, or being built before 1945. However, even this most effective set of simple proxies would still identify more than twice as many households as were actually LIHC, without further screening.
39. Identifying the remaining half of the fuel poverty gap is much harder, particularly the 38 per cent of the fuel poverty gap accounted for by low-income households who do not receive benefits. The implication is that while relatively simple proxies can pick up many of those most at risk in a fairly accurate manner, to find the full population at risk would need more detailed investigation.<sup>2</sup>

<sup>2</sup> It was beyond the scope of the review to assess the practical strengths of different delivery approaches and tools for targeting on the ground. Box 3.2 in Chapter 3 and Section 5.2 describe some of the issues raised with us.

40. A further benefit of the LIHC approach is that it provides a clear insight into the households which should be prioritised for assistance. The use of a fuel poverty gap to supplement the headcount indicator can provide a way of identifying those who are deepest in fuel poverty and therefore a priority for action. In this way, assistance can be prioritised for those who face the worst trade-offs between paying energy bills and other spending that can lead to adverse health and social impacts. Doing so will also have the biggest impact on the aggregate fuel poverty gap. Under a tiered approach of this kind the same households would remain the focus for interventions however the reasonable costs threshold was drawn.

41. Certain groups of people are more vulnerable to being fuel poor, because they have higher energy requirements. Some of the factors driving these higher costs (such as needing to spend more time in the home) are captured in the way energy costs are modelled and households with vulnerable people will be identified as fuel poor. However this does not necessarily capture those who are most vulnerable to the impacts of fuel poverty and of cold homes.

42. The three main groups of people likely to experience particularly negative health impacts of fuel poverty are the elderly, infants, disabled people and those living with long term sickness. 34 per cent of fuel poor households contain someone with a disability or long-term illness, 20 per cent have a child aged 5 or under, and 10 per cent a person aged 75 or over. Given their vulnerability to the impacts of fuel poverty, these groups are an obvious priority for interventions that make it easier to keep warm, even if they do not have the very greatest fuel poverty gaps.

## Current policies for tackling fuel poverty

43. The current focus of fuel poverty measurement has been a single indicator of the extent of the problem. Any move away from this poses a challenge for those familiar with this evaluation approach. This is particularly the case because our proposed measurement approach has two key novel features. First, we propose a relative approach which attempts to track the experience of people with low incomes living with high costs compared to those with average incomes. Second, we propose a measurement of the depth of the problem alongside the extent.

44. We show in Chapter 4 in principle how different kinds of policy – price-based, energy efficiency-based or income-based – can affect the number of households with different combinations of high and low costs and incomes. We also discuss the effects of whether interventions are funded by taxes or by energy consumers. While tax-funding does not generally change the impact of particular kinds of intervention, funding from energy consumers can increase the fuel poverty gap of those who do not benefit from them.

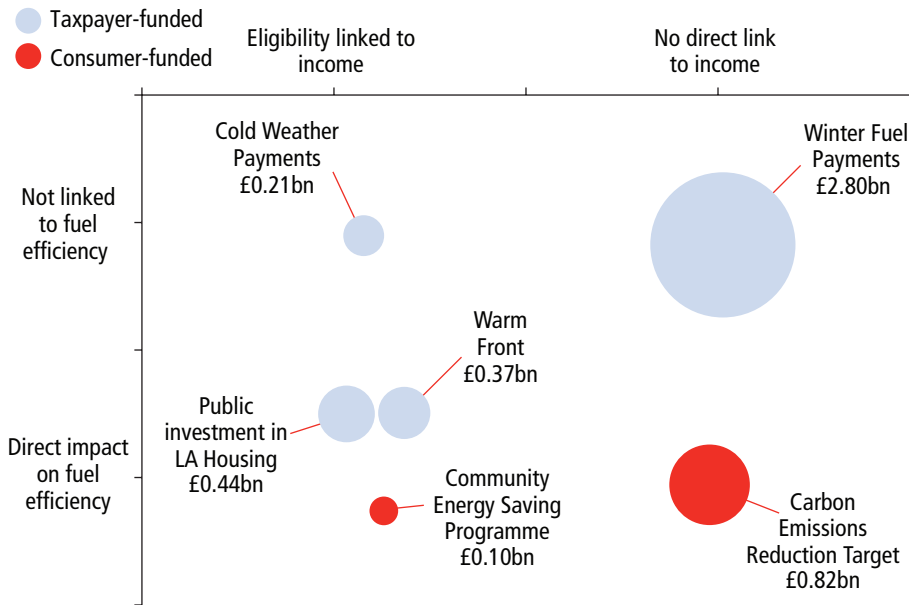
45. A major benefit of the measurement framework is that it facilitates a better understanding of the type of policies that would benefit particular kinds of household and the impact on them relative to all other households. It also supports an understanding of the lifetime effects of policies. This combination means that the LIHC framework can provide a helpful tool for policy-makers when considering the trade-offs they have to make when shaping policies.

46. A detailed consideration of the existing policy framework in Chapter 5 shows that the current package of measures acts on all of the three key drivers of fuel poverty – prices, energy efficiency and income – having a variety of impacts. Figures SR.4(a) and (b) summarise the policy position in 2009, and that planned for 2016, in terms of levels

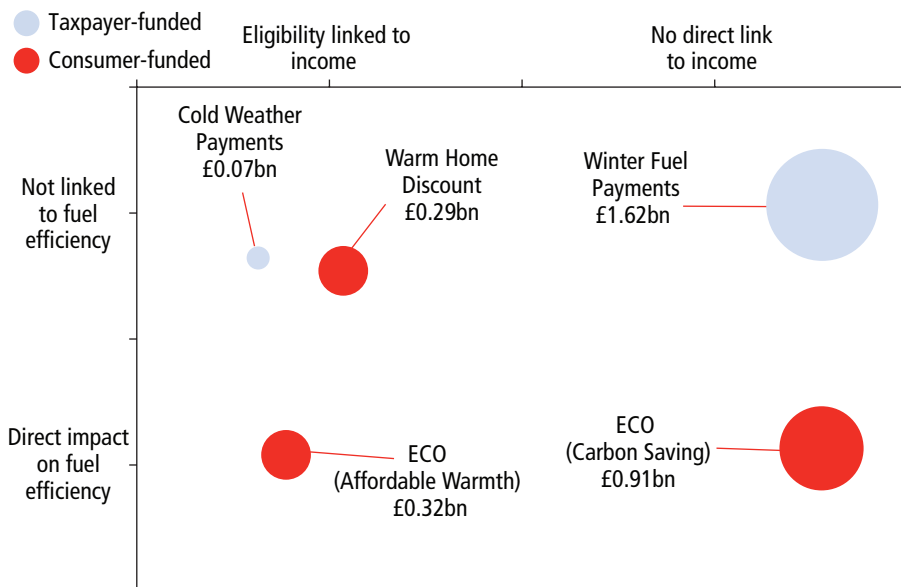
## SUMMARY AND RECOMMENDATIONS

of spending on policies acting in some way on fuel poverty. The size of the circles represents the scale of spending in the two years.

**Figure SR.4a:** Levels of funding for fuel poverty related policies – 2009



**Figure SR.4b:** Levels of funding for fuel poverty related policies – 2016 (2009 Prices)



47. These policies have two main sources of funding – the Exchequer (Warm Front, Winter Fuel Payments, for instance, as shown in blue in Figure SR.4) and the consumer (CERT and CESP, for instance, as shown in red in Figure SR.4). The policies also target different types of households. Present policies such as CESP, Cold Weather Payments and Warm Home Discount are focused on low-income households, but not necessarily those with higher than typical energy costs in the latter two cases. CERT, ECO and Winter Fuel Payments are more widely spread over the population. Those receiving assistance under CERT and ECO may well have high costs.
48. As shown in Figure SR.4b, the position is expected to change by 2016 – the focus of the projections we publish in this report – with two principal fuel poverty policies expected to be in place, the Warm Home Discount and the Affordable Warmth element of the Energy Company Obligation (ECO), both of which will be funded by all consumers through additions to their bills (offset for those receiving benefits).
49. We show (in Chapter 5) how the distributional impact of the ECO is currently expected to be regressive, potentially limiting its impact on fuel poverty. In order to remove this regressive effect, our (rather unrefined) modelling suggests that a much greater proportion of the budget for ECO than currently planned – more than half rather than about one quarter – would need to be directed towards Affordable Warmth.
50. The current fuel poverty package – and the planned policies for 2016 – could be supplemented by a range of additional policies. While we cannot cover these in any great detail, we show that there could be a role for policies relating to minimum standards of energy efficiency, as recently introduced for the private rented sector (although it is clear that only aiming for an EPC rating of E will leave many private tenants still in fuel poverty). These could also include public provision of key related information, equity release (but in rather limited circumstances), and in the long run ‘rising block tariffs’ (but only after the core drivers of fuel poverty had been better addressed).
- ## Future trends in fuel poverty
51. Given that we are looking at something that is the result of the interaction of a series of different factors that do not follow linear trends, we should perhaps respect the advice from Sam Goldwyn to “never make forecasts, especially about the future.” We do, however, attempt to make projections of fuel poverty levels in 2016. The results we present fully in Chapter 6 cannot be taken as definitive, because of specific difficulties in making detailed assumptions about employment and income changes, as well as uncertainties about future incomes and prices. We therefore present different scenarios to test sensitivities to future trends in fuel prices and incomes. The projections should be understood as indications of the broad direction of change rather than as precise forecasts.
52. A particular caveat is that our projections are based on the 2009 dataset from the English Housing Survey. We apply a range of assumptions to these data, from sources including the Office for Budgetary Responsibility (for income growth) and DECC (for fuel price changes). One of the factors which matters most for our purposes – but which is not an issue for more general predictions of future incomes – is the energy efficiency of the homes of those experiencing income changes such as from becoming unemployed. There is no easy way of projecting what the interaction between the income and energy efficiency distributions will be. Nor can we model the effects of reforms to the structures of the tax and benefit systems since 2009. As a result, our projections are, if anything, likely to be over-optimistic in terms of the numbers with low incomes.
53. With those health warnings, Figure SR.5 presents our baseline projections for fuel poverty, taking into account the projected impact of current and

## SUMMARY AND RECOMMENDATIONS

future policies since 2009. The figure shows our central projections for the numbers of households and individuals with low incomes and high costs, together with their sensitivity to different assumptions about future fuel prices and incomes. The figure also presents a similar baseline projection of the depth of fuel poverty in terms of the aggregate fuel poverty gap. Again, the sensitivity to different assumptions is shown.

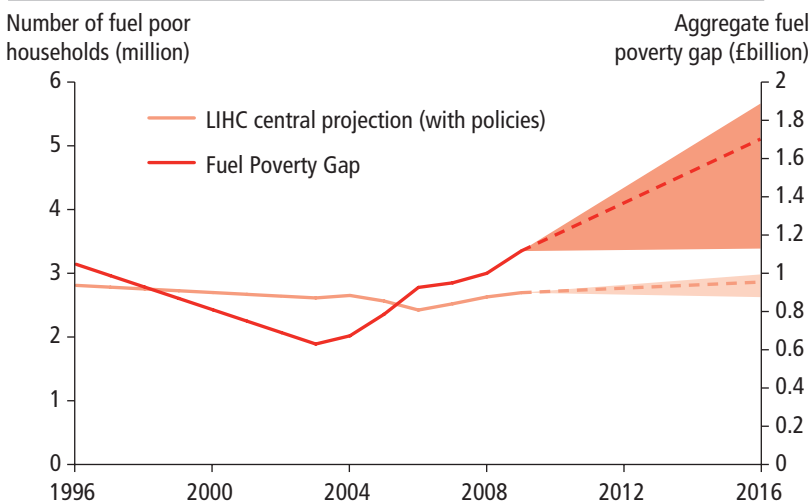
54. These projections will be profoundly disappointing to all those concerned with fuel poverty and aware of the serious problems it causes. Far from being eliminated in 2016 it will still affect between 2.6 million and 3.0 million households (containing between 7.8 and 8.9 million individuals) when measured using our preferred indicator. Our central projection is that the key indicator of its scale, the fuel poverty gap, will have risen to £1.7 billion, compared to £1.1 billion in 2009. The overall impact of policy is that this number will be a tenth – but only a tenth – lower than it would otherwise be. Even in the most optimistic scenario for prices

and incomes the fuel poverty gap will remain roughly the same in 2016 as in 2009.

55. Within these projections, the current climate change and energy policy package is expected to have a small but downward impact on the aggregate level of fuel poverty measured by the LIHC indicator and on the fuel poverty gap. Policies that focus support on LIHC households (such as Warm Front, the Affordable Warmth part of ECO and, to a lesser extent, Warm Home Discount) are expected to improve the relative position of the fuel poor and reduce the extent and depth of fuel poverty. Conversely, those policies that do not focus support on LIHC households (such as FITs and the Green Deal Carbon Obligation) are not expected to improve the relative position of the fuel poor and may increase both the numbers in and depth of fuel poverty.

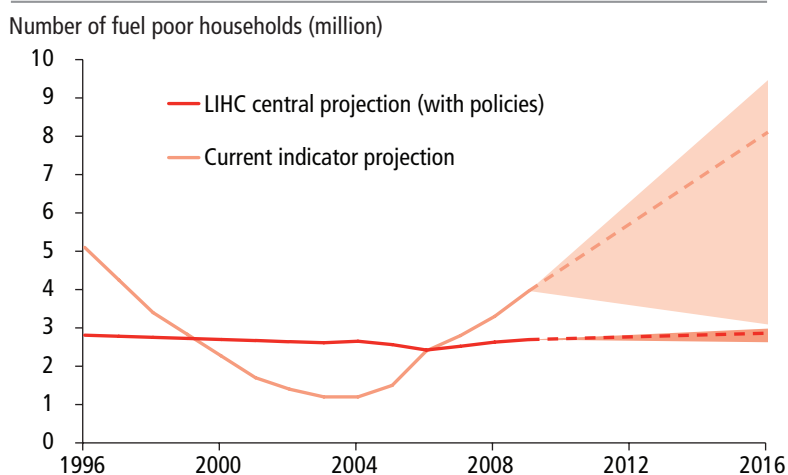
56. Figure SR.6 compares the ranges of the projected number of households in fuel poverty under our preferred LIHC indicator with those that would

**Figure SR.5:** Projected levels of fuel poverty under the LIHC indicator and fuel poverty gap, 1996-2016, England



Source: Fuel Poverty Review

**Figure SR.6:** Projected fuel poverty headcount under the LHC indicator and the current indicator, 1996-2016, England



Source: Fuel Poverty Review

be shown the current official indicator. The figure shows the very great sensitivity of the current indicator to energy prices and incomes. With the most pessimistic assumptions, by 2016 it will class 9.2 million households – 43 per cent of all households – as being in ‘fuel poverty’. On the most optimistic scenario for prices and incomes, only a third as many, 3.1 million households, will be in fuel poverty, a reduction of one quarter from 2009. On the central projection, 8.1 million households will be ‘fuel poor’. The sensitivity of this indicator to prices and the way it includes higher-income households when prices are high do not seem to be helpful characteristics.

57. We believe there are good reasons for using a measure which takes account of all the influences on household costs and which uses a standard set relative to contemporary norms. But we also explore potential future trends in the number of households living in homes with energy efficiency below particular *fixed* standards. As one would expect,

such measures do show continuing improvement over time against their fixed standards. However, on none of them would the number of households with low incomes and low SAP be reduced to zero by 2016 on our central projection. Taking median standards as they were in 2009 there will still be 2.3 million low-income households living in homes with a SAP level below the standard. Half of those households, 1.1 million, will still be below the standard reached by the median household more than a decade ago. On a higher standard, based on the boundary between EPC levels C and D, the number will still be 4.7 million households. It is particularly disappointing that even against these standards, unaffected by energy prices, the projections suggest slower progress between 2009 and 2016 than achieved between 2003 and 2009. We also look at the variant of the LHC indicator where the cost threshold is unaffected by general energy efficiency improvements. This shows only a small fall between 2009 and 2016, with the rate of improvement also slower than before 2009.

## Making further progress

58. Against this perturbing background we then go on, in Chapter 7, to look at how additional policy effort could contribute to tackling fuel poverty. We analyse three broad types of interventions: policies that tackle energy prices, through delivering bill rebates; policies that aim to improve thermal efficiency through delivering subsidised insulation and heating systems to certain households; and policies that act on incomes by delivering direct income support. We then test these against a number of key criteria: their immediate impact on fuel poverty; their long term cost-effectiveness; their distributional impact; their impact on carbon emissions; and their net associated benefits

as measured by official cost-benefit analysis approaches. We distinguish between policies that are Exchequer-funded (such as Warm Front) and those that are supplier-funded through additions to bills (such as Warm Home Discount or ECO). We also compare those that are narrowly targeted on low-income households with high costs (such as Affordable Warmth) or are more broadly targeted on all high costs households (such as the Carbon Obligation in ECO).

59. For each of these – which between them cover all of the main drivers of fuel poverty – we look at the short and long-term impacts in 2016 of interventions with standardised costs of £500 million, which allows us to compare and contrast

**Table SR.1:** Summary of archetypal modelling for making further progress in 2016

Archetype	Proportion of recipients that are LIHC (%)	Short term change in fuel poverty gap (£ million)	Life-time change in fuel poverty gap (£ million)	Total change in greenhouse gas emissions (MtCO <sub>2</sub> )	Non equity-weighted NPV (£ million)	Equity weighted NPV (£ million)
Supplier-funded, narrowly targeted energy efficiency	55	-50	-2,930	-4.92	590	1,900
Exchequer-funded, narrowly targeted energy efficiency	55	-70	-2,630	-3.40	310	1,730
Exchequer-funded, broadly targeted energy efficiency	18	-20	-680	-3.76	360	860
Supplier-funded broadly targeted efficiency policy	13	+20	-390	-6.76	990	1,360
Exchequer-funded rebate policy	28	-70	-70	+0.58	50	600
Supplier-funded rebate policy	28	-40	-40	+0.35	100	490
Increase in means-tested benefits	28	-3	-3	<+0.01	<10	550
Increase in Winter Fuel Payment	10	<-1	<-1	+0.58	60	420

Source: Tables 7.15, 7.16 and 7.17. The impacts of larger interventions would not necessarily be in proportion to those shown for this scale of intervention, particularly for those focused on improving energy efficiency. The figures show the impact of interventions with a standardised cost of £500 million.

Note: The figures for the lifetime changes in the fuel poverty gap are not discounted, but those incorporated in the last two columns are.



the impact of the range of policies on both the LIHC headcount and fuel poverty gap indicators, and so their cost-effectiveness. Table SR.1 summarises our findings.<sup>3</sup> The interventions are ordered in terms of their lifetime cost-effectiveness in reducing the fuel poverty gap.

60. This analysis is, of course, abstract. However it allows us to draw some conclusions about the relative impact and cost-effectiveness of alternative policy approaches. It suggests that policies that improve thermal efficiency of the housing stock tend to be the most cost-effective. They have persisting benefits in reducing fuel poverty, reduce greenhouse gases, and have very substantial net societal benefits. Narrowly targeted supplier-driven policies (such as Affordable Warmth within ECO) have the largest effects on fuel poverty, on the assumption that suppliers do react to their incentive to maximise cost-effectiveness. However, broadly targeted supplier-based interventions – while being the most effective in reducing greenhouse gas emissions – would have much more limited effects on fuel poverty, and would worsen it for some, because of the impact of higher prices on low-income households. Increasing the share of Affordable Warmth within ECO would therefore have more positive effects on fuel poverty while still having favourable effects on greenhouse gas emissions and even greater net societal benefits on an equity weighted basis.
61. However, upgrading the thermal efficiency of the housing stock will be a gradual process. Other short-term interventions such as price subsidies may therefore need to continue to be part of the policy mix. In terms of making the fastest progress towards fuel poverty objectives, the analysis shows that policies should be focused on LIHC households.

<sup>3</sup> The results are explained and explored in more detail in Section 7.4 of the report. It is explained there that while some of the results are 'scalable' – for example twice the amount spent on rebates or benefits would result in a doubling of the NPV and GHG impacts – this is unlikely to be the case in terms of the fuel poverty impacts. This is especially the case for supplier-driven energy efficiency programmes, where the modelling assumes that the most effective interventions are made first.

## Conclusion

62. At the end of this nine-month review of fuel poverty we have reached the clear conclusion that fuel poverty is a major social problem, causing considerable hardship and negative health impacts, as well as impeding efforts to reduce carbon emissions. It is also widespread. Using the latest official data our recommended indicator shows that more than 7 million people were affected in England in 2009, living in nearly 3 million homes. The fuel poor faced costs which were £1.1 billion higher than would be the case if their bills were at the level faced by typical households (generally living in larger homes and with bigger incomes).
63. What is more, we predict a deteriorating, and therefore profoundly disappointing, situation by 2016. While it is clear that the current policy framework is having a positive impact, this is limited to a 10 per cent lower fuel poverty gap in 2016 than we might expect to see in the absence of policies. This is far from enough to offset the general rate of increase from 2009, so that by 2016 there could be nearly 200,000 more households in fuel poverty and a fuel poverty gap more than 50 per cent larger.
64. Despite the scale of the challenge, it is our hope that this review will help drive forward action in future years. Effective action that makes a lasting difference will require participation at every level of Government, across the private sector and civil society. We know from our work on this review that the community of people who want to see the blight of fuel poverty addressed is dedicated to the cause and desperate for progress.
65. We do not expect all of the judgements we have reached to go unchallenged. And there should be an opportunity for others to debate our proposals. Although the degree of support for the overall framework was shown to be very strong in the consultation, it may be the case, for example, that some would prefer to draw the thresholds for the indicator in a different way. For us, what is

## SUMMARY AND RECOMMENDATIONS

important is that perfectly valid arguments about details should not risk losing momentum.

66. In that context, we hope that our work provides a new body of evidence to underpin a course for effective future action. We believe that our measurement framework opens up, for the first time, a clear means of identifying and finding those affected, understanding who should be the priority, assessing the effectiveness of policies, target-setting, and accountability. This should be of use to all parties who want to see progress in the short and long-term.
67. Making this happen requires a reinvigorated strategy. We believe that the case for this is very strong. First, the framework for measurement underlying the 2001 strategy is inappropriate and does not effectively support policy-making and delivery. Second, on current trends and policies, fuel poverty will not be eradicated by 2016, however it is measured. Third, the context has changed since 2001, with combating climate change a still more urgent national priority, while the economic and fiscal crisis leaves more households vulnerable to the effects of energy prices that have risen, rather than fallen as was assumed in 2001.
68. The Government must decide how to respond to this daunting challenge. Within government, although DECC has the clearest interest in fuel poverty, tackling it cannot be the task of a single Department. The problem is one affecting health, poverty, communities, and climate change. Tackling it successfully will require many parts of Government to be involved.
69. 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.

**Recommendation 7:** 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 this report and the framework we have developed for understanding them.



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