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Welsh Government

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Fuel Poverty Evidence Plan





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1. Introduction

The Welsh Government published a new Fuel Poverty Strategy in July 2010. The Fuel Poverty Strategy reaffirmed our commitment to our statutory targets for eradicating fuel poverty in Wales where practicable, which were first set out in 2003.

This Fuel Poverty Evidence Plan sets out how we will monitor and evaluate progress on tackling fuel poverty, including progress towards these targets, and how we will gather the information we need to inform future programmes and policy decisions. This includes how we will ensure that the programmes we fund and policies that we put in place have the maximum possible impact on reducing fuel poverty.

The Welsh Government is developing a Tackling Poverty Action Plan by March 2012, as outlined in Chapter 9 of the Programme for Government. The Tackling Poverty Action Plan will set out the detailed outcomes which the Government, in conjunction with its partners, seeks to influence.

This Fuel Poverty Evidence Plan focuses on monitoring and evaluating progress towards improving the efficiency of housing in Wales, particularly homes occupied by low income or vulnerable households, helping householders to get the best deal available on their fuel bills, and tracking overall levels of fuel poverty in Wales.

This is a first draft of our evidence plan. We intend to update this plan regularly, as and when changes or updates are required. A major review point will be when decisions are made based on the outcomes of the Hills Review of fuel poverty.

2. Our plans for collecting evidence on fuel poverty

Summary

We will:

- *Report annually on the headline fuel poverty indicators outlines below*
- *Undertake a modelling exercise to estimate fuel poverty in 2011 and 2012*
- *Assess the overall costs and benefits of tackling fuel poverty*
- *Undertake impact assessments to ensure our policies and programmes are as effective as possible*
- *Develop a business case for future property surveys to estimate fuel poverty*
- *Consider the value of local fuel poverty modelling based on the 2001 and 2011 census*
- *Ensure all available sources of data are used to inform fuel poverty estimates, modelling and targeting*
- *Provide regular updates on the implementation of our programmes, including Nest and arbed*
- *Undertake evaluation of our programmes to ensure that they are as effective as possible*
- *Use research and evaluation published by others to inform our policy and programmes*

2.1 Headline indicators

We will use the following headline indicators to report annually on progress on tackling fuel poverty in Wales:

Ref.	Headline indicator	Current status
1	Number and proportion of households in Wales estimated to be in fuel poverty	2010: 332,000 (26.2%)
2	Number and proportion of <u>vulnerable</u> households in Wales estimated to be in fuel poverty	2010: 285,000 (29.1%)
3	Number and proportion of households in <u>social housing</u> in Wales estimated to be in fuel poverty	2010: 59,000 (26.3%)
4	Number of homes occupied by low income households or in low income areas in Wales that have had their energy performance improved each year	2010/11: 6000+ <i>arbed 1: 6,000 homes in low income areas</i> <i>HEES 2010/11: Breakdown of income of householders supported not available.</i> <i>Over 14,000 homes improved in total.</i>

5	Estimated bill savings in low income households in Wales each year as a result of advice given on energy bills and/or home energy performance measures installed	2010/11: £3.3m/year + <i>arbed 1: £3.3m/year</i> <i>HEES 2010/11: Breakdown of income of householders supported not available.</i> <i>Over 14,000 homes improved in total.</i>
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The Warm Homes and Energy Conservation Act 2000 states that *‘the appropriate authority shall from time to time assess... the progress made in achieving the objectives and meeting the target dates’*. Annual reporting of indicators 1-3 will help us to meet this obligation.

We will also regularly monitor and review the following contextual information:

- Measures installed through WG programmes focusing on low income households.
- Measures installed through UK Government programmes (e.g. CERT, CESP, Green Deal, ECO).
- Additional measures installed by social housing providers.
- Average SAP rating of homes in Wales/homes with an EPC in Wales.
- Average SAP rating of social housing.
- Income trends (gross household income and gross disposable income [adjusted for inflation]).
- Current and forecast energy prices.

2.2 Estimating fuel poverty across Wales

National property surveys have been used to estimate fuel poverty in Wales in the past. The Welsh Government is currently developing the business case for future property surveys to gather new data. As part of this process the potential uses of other sources of data, for example Energy Performance Certificates, will be considered. Linked to this, we will also consider the costs and benefits of updating the small area fuel poverty indicator based on the 2001 and 2011 Census and past and future property surveys.

In the mean time, the Welsh Government will shortly commission a piece of modelling work to estimate the levels of fuel poverty in Wales in 2011 and 2012. We expect results from this modelling to be available in Summer 2012 (2011 estimates) and Winter 2012/13 (2012 estimates).

We will also undertake analysis to estimate the number and distribution of households that would be in fuel poverty under the new definition proposed by the Hills Review team. This will help to inform the Welsh Government’s considerations of the final recommendations of the Hills Review.

Further information on the options for, and complexities of, estimating fuel poverty are provided in Section 3.3.

2.3 *Monitoring and evaluating our programmes*

In order to ensure that we are focusing our efforts on tackling fuel poverty effectively and in the right way, the Welsh Government and others working to address fuel poverty need to ensure that the activities we undertake to tackle fuel poverty are monitored and evaluated. This will help us to ensure that they are effective and have the maximum impact possible within the resources available.

The Welsh Government will regularly monitor and evaluate the programmes that we run and fund, as well as keeping track of implementation of UK Government programmes like CERT, CESP, ECO and the Green Deal Framework. We will also keep abreast of lessons learnt from projects across Wales, the UK and beyond.

Evaluation of Nest and arbed will include:

- Modelled impact of home energy improvement measures installed.
- Number of homes estimated to be in each energy performance band before and after improvement.
- Number of homes receiving or referred for telephone or face to face advice (energy, benefits, switching, debt, other).
- Estimated impact of advice provided or referrals.
- Results of exercises to estimate the actual impact of energy performance improvement measures and advice.
- Estimates of the proportion of households in fuel poverty before and after assistance.
- Householder perceptions of improvements to comfort and health.
- Independent assessments of customer experiences and satisfaction.

In addition, we will look to partners and stakeholders for feedback on the effectiveness of their programmes, and seek to ensure lessons learnt from both our own and other's evaluation are shared and implemented as widely as possible.

We encourage partners and stakeholders to advise the Welsh Government of projects that could be used to help inform fuel poverty programmes and policy.

2.4 *Assessing the costs and benefits of actions to tackle fuel poverty*

Economic impact assessments

The Welsh Government undertakes economic impact assessments as part of the process of changing regulations and/or allocating money to new programmes, and will continue to do so. An impact assessment was undertaken as part of the process of introducing the Home Energy Efficiency Schemes (Wales) 2011 Regulations for the Nest scheme and assessments of the impact of arbed phase 1 and phase 2 have been completed.

The quantifiable benefits of fuel poverty programmes that can be set against the costs include:

- Energy bill savings.
- Reductions in greenhouse gas emissions.
- Improvements in air quality.

There are also a range of other benefits from fuel poverty schemes which cannot at present be accurately or confidently valued but are nevertheless important benefits which need to be considered against the costs. These include:

- Improvements to health, particularly mental health, as a result of increased warmth and comfort.
- Improvements in educational attainment as a result of students being able to use a warm, quiet area of the home for study.
- Reductions in sickness absence as a result of health conditions caused or exacerbated by a cold home.

In addition, there are likely to be positive impacts from wider activities to reduce overall poverty, such as increasing benefits uptake, as part of fuel poverty programmes. However these cannot be formally included in economic analysis because they are considered to be economic transfers from one taxpayer to another rather than new economic benefits.

Modelling the costs and benefits of home energy improvements

The Welsh Government is also working with the Energy Saving Trust to estimate the overall costs and benefits of improving the efficiency of homes occupied by fuel poor households in Wales. The results of this work will be available in Spring 2012.

2.5 Locating households that need our help the most

As outlined in the Fuel Poverty Strategy, the Welsh Government will target our resources at the households that need our help the most.

A number of data sources are available to help us locate households that are most likely to suffer significant effects from fuel poverty. These include the Welsh Index of Multiple Deprivation (the Income Domain) and the local fuel poverty indicator (which we will consider updating with the 2008 property survey data and 2011 census data).

In addition, we will continue to work with local authorities and housing associations to encourage them to improve the data available on their local housing stock. As well as being useful for targeting activity for fuel poverty, this information can be used to bring in external funding to improve the energy performance of housing in the area. The Energy Saving Trust's Local Authority and Housing team, which is funded by the Welsh Government, has produced a guide to housing stock data entitled '*How to use stock data effectively to secure funding*'. The guide is available on their website.

Locating households that are using more expensive fuels

The Welsh Government has been working with Wales & West Utilities to map dwellings in Wales that are not connected to the existing gas network and to classify them according to distance from the existing Wales & West Utilities gas distribution network.

We estimate that there are 264,500 dwellings in Wales that are not connected to the gas network. Of these, around 27,500 are thought to be within 50m of the existing Wales & West Utilities network and could therefore be connected to the network at a minimal cost. If all of these dwellings were connected to the gas mains it is estimated that we could save householders £11.9m a year on their fuel bills.

Dwellings that are further away from the existing network may be able to be connected cost-effectively as part of network extension projects if a sufficient number of dwellings are sufficiently concentrated. Other dwellings further from the network are unlikely to be able to be connected to the network at a reasonable cost. These dwellings are therefore priorities to target for energy performance improvement measures as fuel costs and therefore potential savings will be higher.

We will provide further details of this project in Spring 2012, and will work with stakeholders to develop a process for ongoing updates and access to the data.

3. Background and context

3.1 *The current definition of fuel poverty, progress and trends to date, and the 2010 target*

Fuel poverty has been defined as when a household needs to spend more than 10% of its household income on energy to achieve an adequate standard of warmth since the introduction of the Warm Homes and Energy Conservation Act in 2000.

As we set out in the Fuel Poverty Strategy 2010, good progress was made in tackling fuel poverty in Wales until 2004. This was a result of decreasing fuel prices and increases in the efficiency of homes in Wales. However, this positive progress was reversed in 2004 as increasing fuel prices began to outweigh the impact of ongoing improvements in energy efficiency (see Charts 1-3).

Further fuel poverty estimates have been released since the Fuel Poverty Strategy was published, which confirm that, despite an increased level of energy efficiency activity, the numbers of households defined as in fuel poverty continued to rise between 2006 and 2010. The fact that energy prices drive levels of fuel poverty over and above any of the factors that the Welsh Government is able to influence is demonstrated by the close relationship between energy prices and levels of fuel poverty shown in Chart 3.

Chart 1: *Fuel poverty trends in Wales 1998 – 2010 (the 1998 figure is based on a proxy of eligibility for the HEES scheme in 1998)*

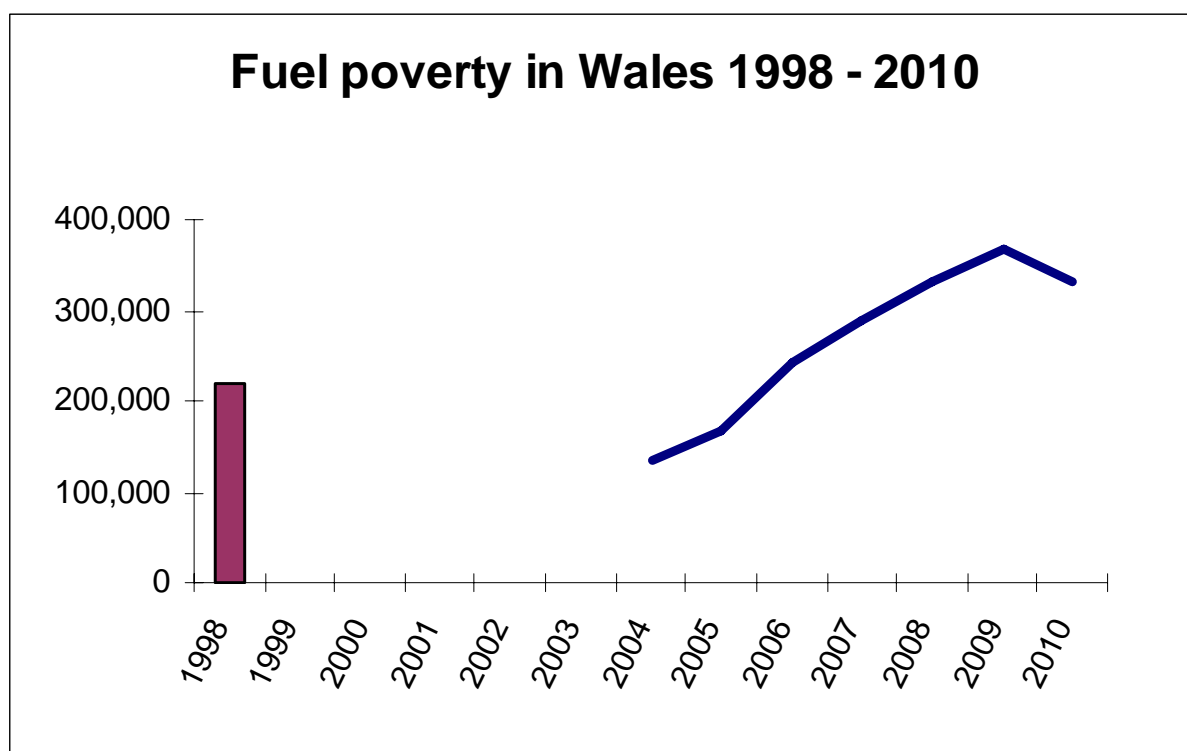


Chart 2: Increasing numbers of energy efficiency measures have been installed in Wales since 2001.

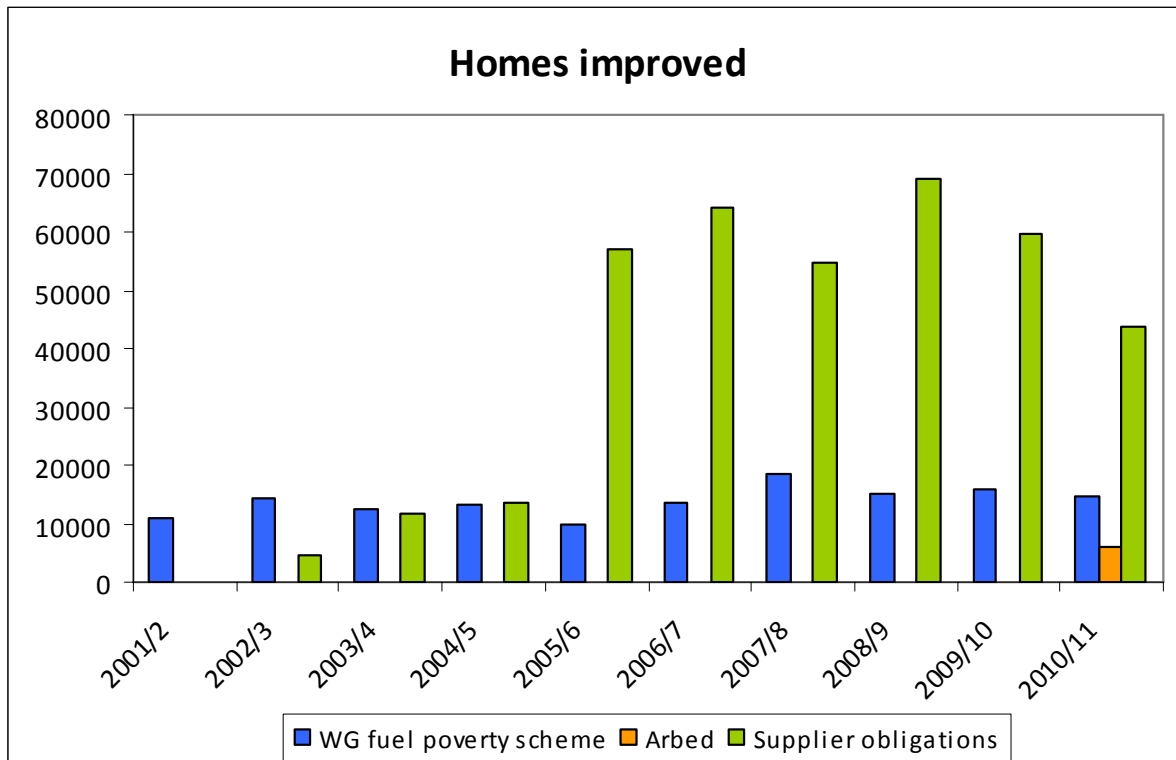
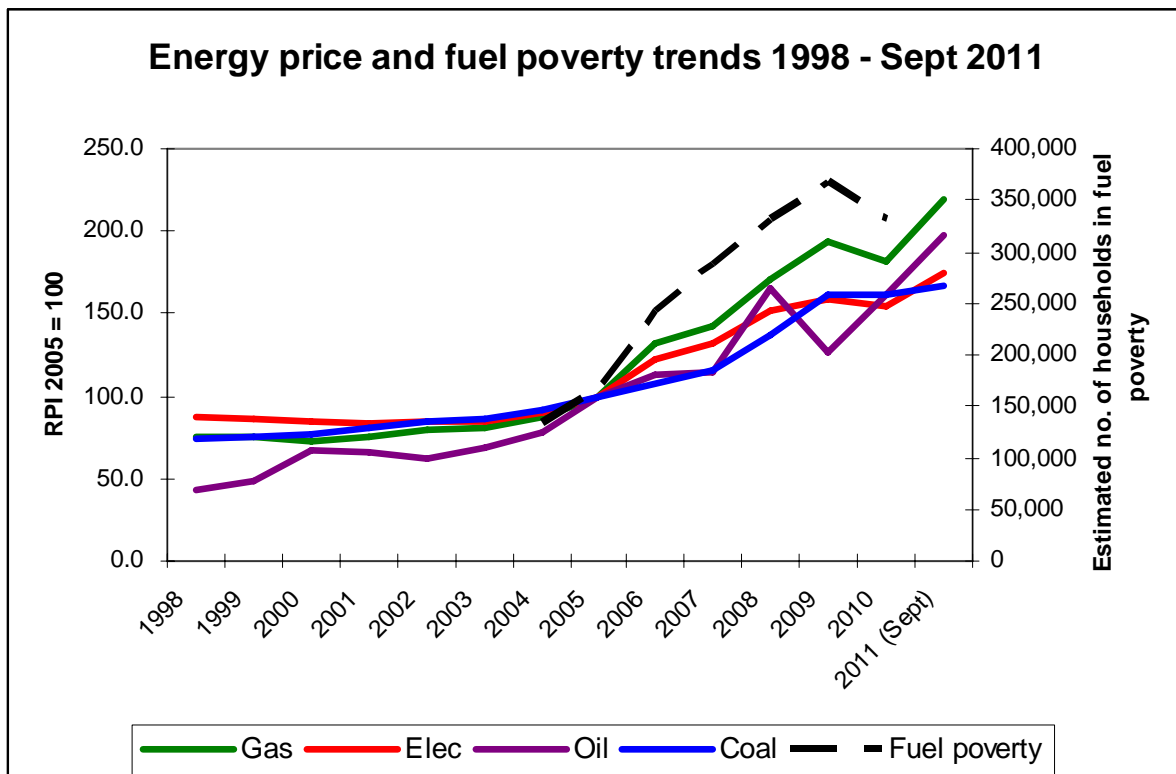


Chart 3: UK energy price trends show major increases in the prices of all major fuels since the fuel poverty targets were set. Recent fuel poverty trends can be seen to mirror fuel price trends.



Although average household and disposable incomes have increased since the target was set, if incomes are adjusted to take inflation into account the increase is less obvious (Charts 4 and 5). In addition incomes vary widely among household types, so although the average household in Wales with an income of £30,000 is unlikely to need spend more than 10% of their income on fuel bills, many will earn much less than this. A fuel bill of £1,500 a year is likely to push the average household where the reference person is 75 or over, households in social housing and workless households into fuel poverty (see Chart 6). To put this in context, average fuel bills for medium users in South Wales in October 2011 ranged from £1179 - £1242, and in North Wales £1179 – £1242.

Chart 4: *Average annual household incomes in Wales over time*

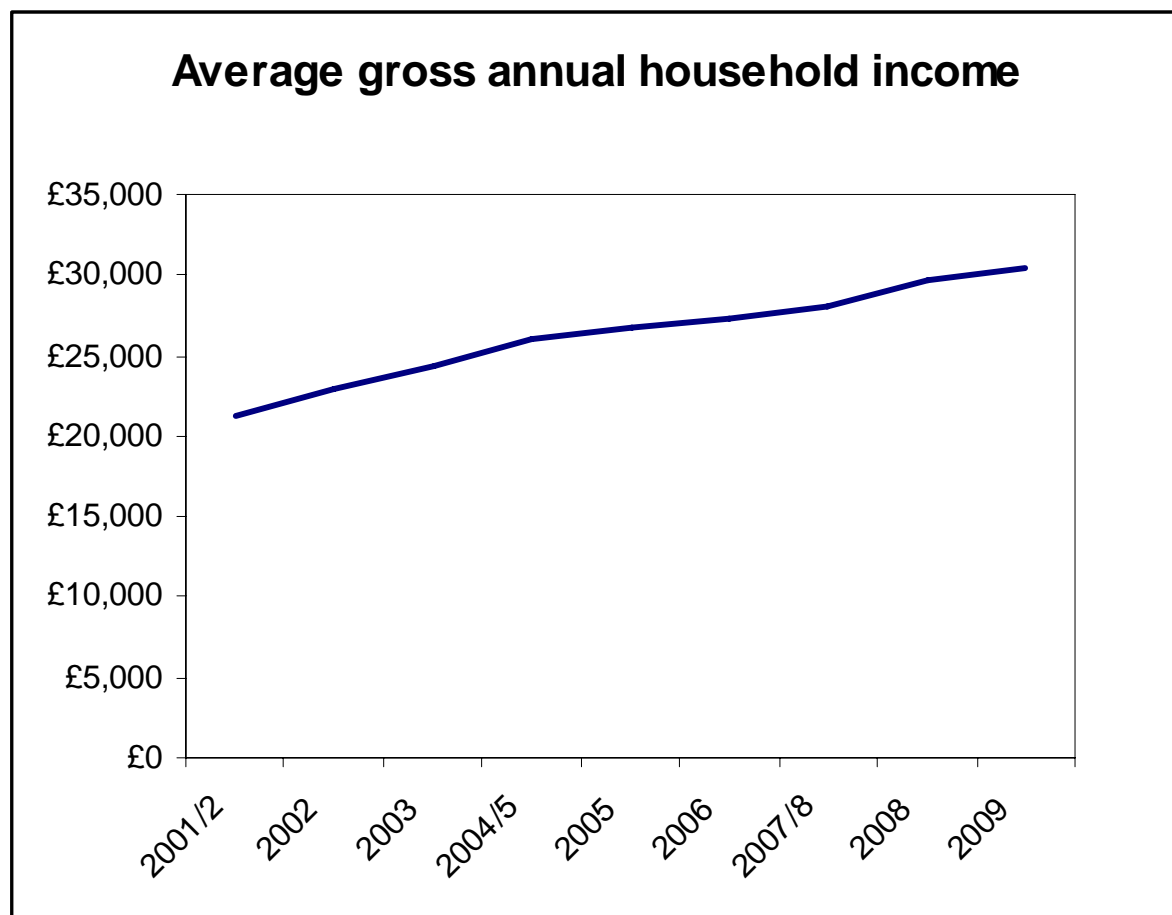


Chart 5: Average disposable income per head in Wales over time

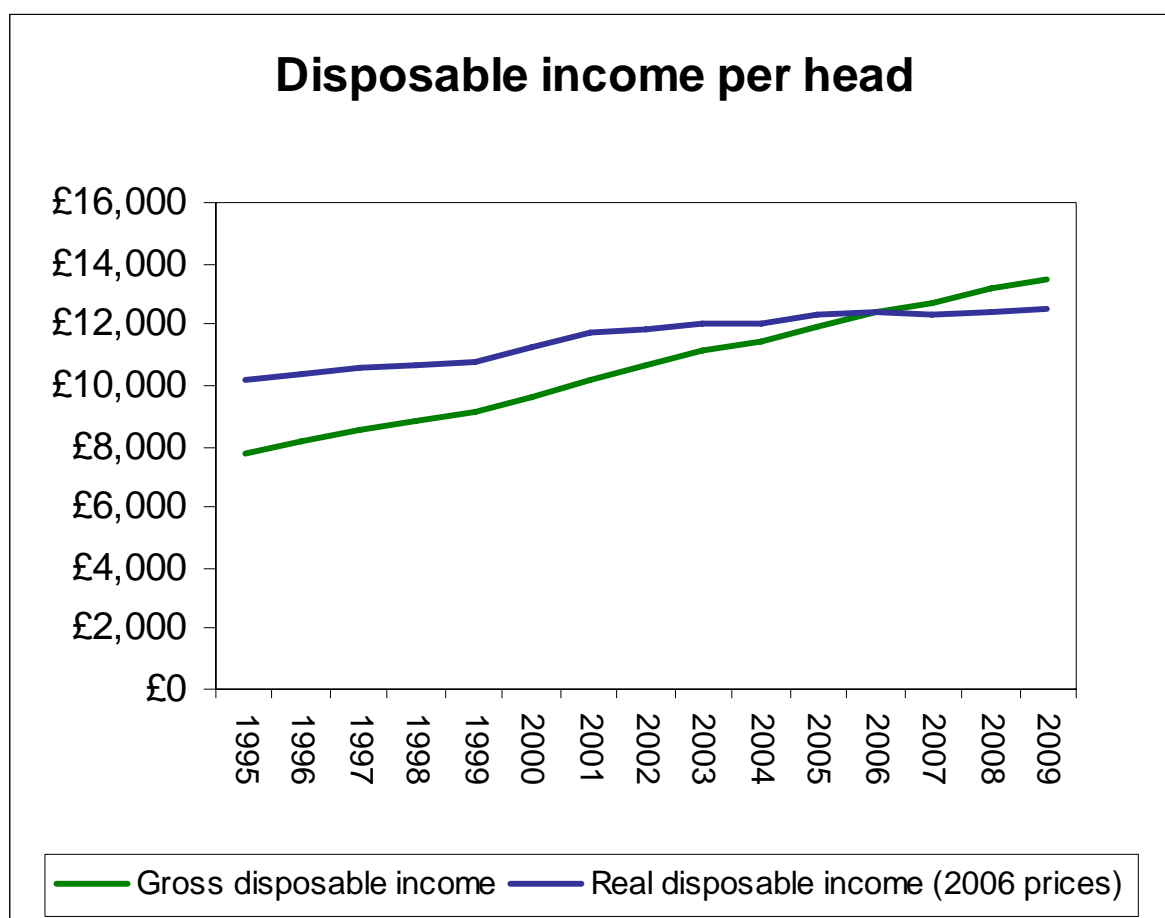
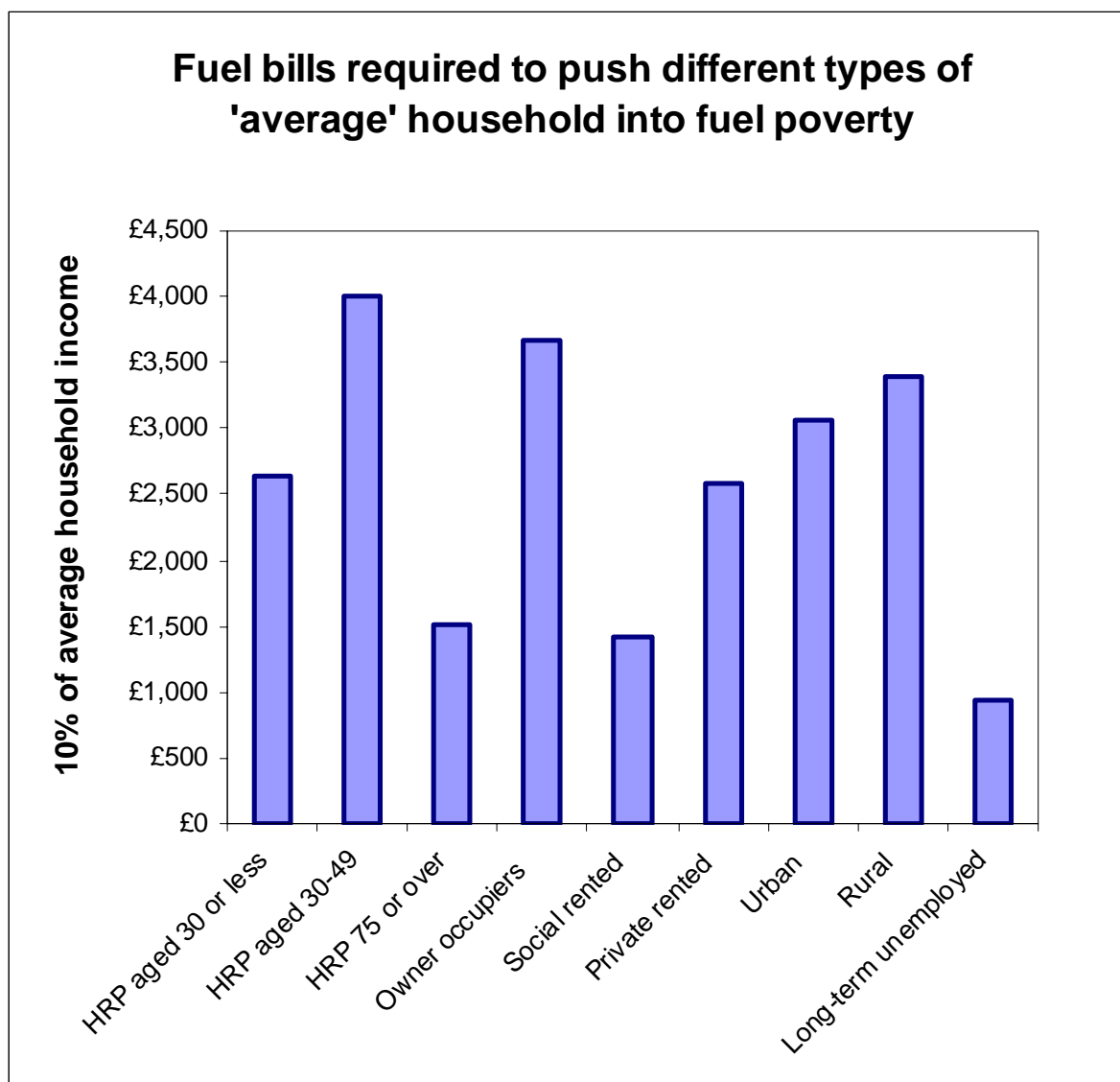


Chart 6: The level of fuel bills needed to push different types of 'average' households into fuel poverty



3.2 Current evidence base

Our current fuel poverty evidence base consists of a number of published reports available on the Welsh Government website and the Living in Wales 2008 household and property survey data sets.

The published reports include:

A series of reports by BRE for the Welsh Government

(available on the social research pages of the Welsh Government website – [click here to view these reports](#))

Fuel poverty statistics 2008

Provides detailed tables highlighting the nature of fuel poverty in Wales in 2008.

Modelled headline fuel poverty statistics for 2009 and 2010

Uses average changes in income and fuel prices to model fuel poverty in 2009 and 2010, however, improvements in energy efficiency over this time are not taken into account.

Evaluating the impact of energy price rises on fuel poverty

Provides a ‘ready reckoner’ that suggests that a 10% rise in fuel prices implies a rise of 5% in the proportion of households in fuel poverty. However, this does not take changes in income or energy efficiency into account.

Fuel prices, income and energy efficiency scenarios to 2018

Suggests that under a high fuel poverty scenario in 2018 (high energy prices and low incomes), if £2.4b was spent on providing basic insulation, heating improvements, solid wall insulation and double glazing for vulnerable households in fuel poverty, 24% of the population would remain in fuel poverty.

Under a low fuel poverty scenario (low energy prices and high incomes), and with £734m spent on the measures outlined above, 6% of the population would remain in fuel poverty in 2018.

Living in Wales 2008 statistical releases

(available on the statistics pages of the Welsh Government website)

- Fuel Poverty ([click here to view this release](#))
- Heating and Energy Measures ([click here to view this release](#))
- Energy Efficiency of Dwellings ([click here to view this release](#))

Further analysis of Living in Wales 2008 property survey data

(available on the fuel poverty pages of the Welsh Government website – [click here to view this report](#)).

Examining the impact of the new fuel poverty scheme eligibility criteria

This analysis suggests that around 61% of households that are eligible for a full home energy improvement package under Nest were in fuel poverty in 2008. For comparison, it is estimated that around 34% of households that are eligible for the HEES Plus scheme were in fuel poverty in 2008.

Small area fuel poverty maps

(maps available on the fuel poverty pages of the Welsh Government website – [click here](#) - data available on request).

Fuel poverty mapping based on the 2001 census and the 2004 property survey.

3.3 Methods of estimating fuel poverty – nationally and locally

Why we need fuel poverty estimates

Reporting on future fuel poverty targets

We will need to have robust estimates of the level of fuel poverty in social housing and nationally in order to report on our fuel poverty targets in 2012 and 2018. We also need to have more regular estimates of fuel poverty to allow us to track progress against our targets in interim and consequent years.

Developing and refining fuel poverty policy

As well as overarching estimates of the number of households in fuel poverty in Wales and in social housing in Wales, we need to know who is living in fuel poverty and where they live in order to target our fuel poverty policies at the right people. However, the greater the level of detail required, the larger the sample size that is required, and therefore the greater the cost. So we need to think carefully about the level of detail we need and balance it against the cost of collecting information to that level of detail.

How we measure fuel poverty at present

We need two pieces of information to establish whether a household is in fuel poverty under the current definition:

- Household income.
- The estimated cost of all fuel bills, if the home is heated to an appropriate level (required energy spend).

In addition, we need contextual information to help us establish which types of households are most likely to be in fuel poverty.

Collecting information on household income can be relatively simple (e.g. asking the head of the household or their spouse which band their household income falls into) or it can be very complex (e.g. as part of the quarterly GB Labour Force Survey every member of the household is asked for detailed information on their income).

Collecting information on the estimated cost of all fuel bills, if the home is heated to an appropriate level, requires a survey of the property.

An estimate of the cost of all fuels can then be made using basic property details, standard energy costs and standard energy performance software (e.g. that used to produce home Energy Performance Certificates). However, these estimates are subject to a wide range of assumptions.

Hills Review on Fuel Poverty

The UK Government commissioned an independent review into the way fuel poverty is defined and measured in March 2011. Although the review officially covers England only, the findings will be of interest to all governments and stakeholders interested in tackling fuel poverty.

The interim report of the Hills Review was published in November 2011. It proposed a new way of measuring fuel poverty that defines a household as being in fuel poverty if:

1. Their required energy spend is greater than the median for that type of household.
- and
2. Their household income after housing and energy costs is less than 60% of the median for that type of household.

We will be considering and discussing the findings of the Hills Review further with stakeholders and partners.

Methods of collecting information on fuel poverty

National property surveys

Property surveys have been used to estimate fuel poverty in Wales in the past, in 2004 and 2008. A sample of households who took part in surveys that collected income and contextual data also received a full survey of their home. This information was used to estimate the required energy spend of each household.

The main disadvantage of property surveys is the cost. The 2008 property survey and fuel poverty modelling cost in excess of £1m. It can also take quite a long time to collect and process all of the information.

As outlined in Section 2.2, the Welsh Government is currently developing a business case for future national property surveys.

Local property surveys

Many local authorities undertake their own private sector property surveys. These local surveys could be standardised so that the results can be combined to produce national statistics on fuel poverty. However, the timing and nature of these surveys is different across Wales at the moment so this would require significant changes to processes and coordination across all of the Welsh local authorities. For this reason, we are progressing a business case for a national property survey rather than coordinated local surveys.

Social housing data

Social housing providers are required to bring their housing stock up to a minimum of SAP 65 as part of the Welsh Housing Quality Standard. Information is collected annually on progress towards the Welsh Housing Quality Standard, including on progress towards and projections for the SAP 65 target. In addition, social housing providers collect other information relevant to fuel poverty, for example via tenant profiling exercises that include information on income and benefits. We have begun initial discussions with social housing providers about how these data collection processes could be used to collect further information about fuel poverty in social housing.

Energy performance certificates

An Energy Performance Certificate (EPC) has to be provided every time a home in the UK is built, rented or sold. The availability of and access to EPC data is improving and data from EPCs for dwellings in Wales will be available for analysis for the first time in April 2012. Although it is important to be aware that EPC data is skewed towards homes recently sold or rented, and can often be out of date, nevertheless it could still potentially be useful inform policies to improve the energy efficiency of homes in Wales, particularly in terms of targeting local areas.

Modelled data

Information from the most recent property survey could be used to model the impact of changes in the factors that affect fuel poverty (energy prices, household incomes and energy efficiency improvements) since the last survey. We will undertake modelling of fuel poverty in 2011 and 2012 based on the 2008 property survey data.

Householder surveys

A further option is to use householder surveys to get a sense of the scale of fuel poverty by surveying householders across Wales, either over the phone or face to face.

The type of questions we could ask are:

- Do you struggle to keep your home warm?
- Roughly how much do you spend on all fuels (including electricity) each week/month/quarter/year?
- Do you limit the amount of energy or fuel you use because you are worried how much it will cost?

Given that we will be undertaking modelling work, and that a business case for a national property survey is being developed, it is not considered necessary to collect this type of qualitative / contextual data at this time. We need to consider the costs versus the usefulness of all potential sources of evidence on fuel poverty, and a major limitation of householder surveys is that they would not provide the right type of information for reporting on our statutory fuel poverty targets.

Census data

Census data can be combined with household and property survey data to estimate fuel poverty at the small area level. The effectiveness of various pieces of census data for predicting fuel poverty can be ascertained by analysing the household and property survey data. The census data can then be used to estimate the prevalence of fuel poverty in a particular area using the identified risk factors.

We are considering the costs versus the benefits of updating the currently available fuel poverty maps (which are based on 2001 census and 2004 property survey data) with data from the 2008 property survey. These maps would still need to be based on 2001 census data, unless their publication was delayed until 2013, when the majority of census outputs are expected to be published.

Welsh Government data linking project

The Welsh Government's Knowledge and Analytical Services team is currently undertaking a project to explore how different data sources can be linked together to provide further evidence to inform policies. For example, property survey data could be linked with health data to explore and quantify the relationship between poor housing and poor health. A decision on whether a pilot project to explore links

between health and early installations as part of HEES will be prioritised as part of the early stages of the data linking project is due early in 2012.

3.4 Investigating the actual impact of Welsh Government interventions

The actual, on the ground impact of interventions to address fuel poverty and reduce energy bills will be assessed as part of the evaluation of the Welsh Government's fuel poverty programmes. However, due to the costs of contacting householders to collect this information, this will only be done for a sample of households supported.

The Welsh Government is currently investigating how information on householder's actual energy consumption/bills before and after support from its schemes could be collected. It is currently notoriously difficult to collect this information from householders themselves, as very few people are engaged enough with their energy consumption to keep accurate records of their usage (this has been proven by our attempts to collect this information as part of evaluation of previous schemes). This may change over time as requirements placed on energy companies require more and better provision of information to householders on their energy consumption.

The UK Government has developed a National Energy Efficiency Data framework (NEED) that allows energy billing data to be cross-referenced with other data anonymously (for example, records of the installation of energy efficiency measures). This could allow us to see how the combined energy consumption of all householders supported as part of Welsh Government schemes has changed, compared to a control group (the agreement on use of the data with the energy companies prevents analysis of changes in individual households). However, a major drawback of this framework at present is the time delay between installation and reporting to allow for sufficient post-installation energy use and analysis (for example, under the current process we wouldn't expect to be able to get any information on the impact of schemes delivered in 2010-11 until 2014).

The Welsh Government is in discussions with the energy companies to investigate whether, with householder consent, we could access details of their energy consumption more directly and promptly for the purposes of analysis (and potentially providing the householder with advice). Other options include asking householders to submit regular meter readings, either by post, phone or text. However, householder meter readings will only provide information on consumption post-engagement and will not provide any information on energy usage before the first contact with the householder, therefore preventing an analysis of changes to bills.

The Welsh Government will also be working with its scheme managers to collect information that will allow the fuel poverty status of households before and after support to be evaluated. The required energy spend of each household will be calculated before and after improvements as part of the process of assessing the most cost-effective solutions for each householder. Where a householder is content to provide an estimate of their household income, this information can be combined to produce an estimate of fuel poverty before and after intervention.

4. Using our collective knowledge and expertise

We want to use the collective knowledge and expertise of stakeholders involved in energy efficiency and fuel poverty evidence in Wales to inform our monitoring and evaluation plans, review work undertaken and to share and publicise lessons for future programmes.

We will use a wide range of expertise within the Welsh Government to inform our work. We will also invite external stakeholders to join a virtual network that will serve as a resource to help peer review our monitoring and evaluation plans. We will ask the network to advise us on evidence needs and to help ensure that evidence available is shared widely and used to inform research, policy and programmes wherever relevant.

We expect that the following types of stakeholders would be able to provide valuable contributions to the development of the fuel poverty evidence base in Wales:

- Universities with specialisms in building physics, householder behaviour and/or social impacts of government policies.
- Consultancies specialising in building physics, householder behaviour and/or social impacts of government policies.
- Local authority housing, energy or financial inclusion officers.
- Housing association technical or financial inclusion staff.
- Low/Zero Carbon Hub.
- Agencies representing/providing services to householders in Wales that are likely to suffer from fuel poverty.

We will also engage with and seek advice from the Welsh Government's Tackling Poverty External Advisory Group.