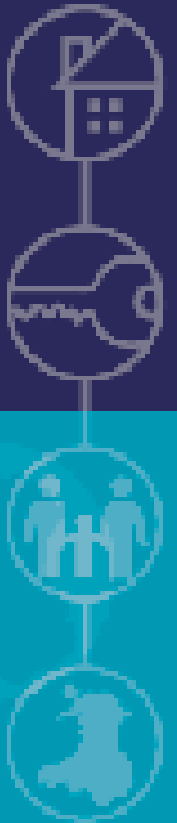


# Interim Evaluation of the New Home Energy Efficiency Scheme for Wales





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# 1. Introduction

## 1.1 Background

The New Home Energy Efficiency Schemes (HEES) for Wales commenced in November 2000 and provides a more comprehensive package of energy efficiency measures in each property than had previously been available under the original HEES scheme. HEES now offers packages which includes heating improvements as well as insulation measures to households in receipt of certain benefits. In summary New HEES is targeted at both private and public housing and offers:

- Grants to the value of £1,500 for insulation measures and room heaters to households on low income.
- Grants to the value of £2,700 for an extended package of measures, called HEES Plus (under which central heating is provided) to pensioner households, lone parent, sick and disabled households.

The scheme is broadly similar to the Warm Front scheme in England although the size of grants available differs with HEES Plus offering a further £200 over Warm Front Plus to reflect the higher cost of heating systems in Wales (DEFRA & DTI, 2001).

The 1997/98 Welsh House Condition Survey (WHCS) estimated that 222,000 households are eligible for assistance under HEES and lack at least one of the measures available through the scheme. Approximately half of these households (117,000) contained at least one person over the age of 60. About 18% (40,000) were lone parent households and a further 14% (32,000) were eligible due to the receipt of benefits related to long-term sickness or disability. The remainder (33,000) were other 'poor' households with children (DEFRA & DTI, 2001).

The Assembly has subscribed to three commitments on fuel poverty:

- To eradicate fuel poverty among vulnerable, low-income households by 2010, as far as reasonably practicable
- To eradicate fuel poverty among vulnerable households in social housing by 2012
- To eradicate fuel poverty among all households by 2018, as far as reasonably practicable

As HEES is the Assembly's primary vehicle for meeting its Fuel Poverty Strategy commitments, this study was commissioned to advise on:

- The appropriateness of basing HEES eligibility criteria on receipt of the specified series of benefits.
- The effectiveness of HEES in removing recipients from fuel poverty.
- The vulnerability to fuel price increases of those lifted from fuel poverty.
- The effect of introducing greater assistance in terms of increased SAP.

## 1.2 Aims and Objectives

This study aimed to assess:

- The appropriateness of the eligibility criteria.
  - o To calculate the number and characteristics of recipients to date who were fuel-poor when they received help, and the number and characteristics of the recipients to date who were not fuel-poor.

- The adequacy of the assistance given to fuel-poor recipients.
  - To calculate the number and characteristics of households moved out of fuel poverty as a result of receiving measures from the HEES grant.
  - To calculate the number and characteristics of households that were fuel-poor pre-intervention but still fuel-poor post-intervention.
  - To calculate the vulnerability of households removed from fuel poverty to returning to fuel poverty if fuel prices rise by specified levels.
  - To calculate the effect of introducing greater assistance to specified levels (in terms of SAP improvements to the property).

## 2. Methodology

### 2.1 Definition of Fuel Poverty

A fuel-poor household is one that cannot afford to keep adequately warm at reasonable cost. For the purposes of the *UK Fuel Poverty Strategy*, which the Government launched in November 2001, the definition of a fuel-poor household has been operationalised as one which needs to spend more than 10% of its income on all fuel use, to heat the home to a satisfactory standard and for lighting, cooking and running domestic appliances (DEFRA & DTI, 2001). The Assembly has accepted this definition as a means of monitoring changes in the numbers of people in fuel poverty (NAfW, 2003).

### 2.2 Defining Income

Two definitions of “income” are used in the UK Fuel Poverty Strategy, as follows:

- For Target Setting – income **including** Housing Benefit or Income Support for Mortgage Interest (ISMI)
- Additional Definition - income **excluding** Housing Benefit or Income Support for Mortgage Interest (ISMI)

The term “income” is however not well defined, so a clear definition had to be adopted for this study to proceed. It was decided to adopt the standard approach to income estimation used by government for poverty estimation (as distinct from fuel poverty estimation in England) and for HBAI (Households Below Average Income) statistics. The HBAI concept of income is used to measure fuel poverty in Scotland. This has the advantage that methodologies and standards exist for collecting data on income (see appendix 1 for further details).

In the HBAI definition of income the following factors are deducted from the estimate of household income:

- council tax
- pension contributions
- maintenance payments
- parental contributions to students living away from home

The approach adopted in this study deviates from the HBAI approach by NOT deducting three of these items from household income, in order to remain consistent with the approach adopted in the UK Fuel Poverty Strategy and by the Welsh Assembly government.

Two definitions of income have been used within this report to estimate the extent of fuel poverty, as follows:

- Total net household weekly income from all sources after deducting income tax, national insurance and any contribution towards a pension (termed Full Income)
- Total net household weekly income from all sources after deducting income tax, national insurance, any contribution towards a pension **and** housing benefit (termed Basic Income).

Unless otherwise stated the full income definition has been used for the analyses within this study.

### 2.3 Fuel Poverty Calculation

To determine whether a household is fuel-poor and to assess the extent of fuel poverty, household income and total fuel running costs must be estimated. If fuel costs represent more than 10% of income, then the household is fuel-poor. Fuel poverty can be further broken down into levels of severity:

% of income spent on fuel	fuel poverty level
Less than 10%	Not fuel-poor
10 – 20%	Moderate fuel poverty
20 – 30%	Severe fuel poverty
More than 30%	Extreme fuel poverty

Fuel poverty has been calculated by various methods in this study, to determine the impact of these definitions on the numbers in fuel poverty:

- Using Full and Basic Income, i.e. income including and excluding Housing Benefit.
- Using three different heating patterns (see section 2.5, below).

### 2.4 Calculating Running costs

Running costs were calculated using data supplied by the HEES scheme managers, EAGA, who surveyed each property prior to installing measures. The actual number of occupants collected from the questionnaire (see section 2.10) were used rather than the household type collected by the HEES surveyor. Data was processed through the NHER Auto Evaluator computer programme, which is based on SAP 2001 and BREDEM 12 (Anderson et al, 1996). All running costs were derived using BREDEM 12, the BRE's preferred method for calculating running costs. The crucial factors affecting running costs are:

- the assumed heating pattern
- the assumed unit prices of fuel.

### 2.5 Heating Patterns

To assess how heating pattern affects fuel poverty, the numbers in fuel poverty were calculated for three different heating patterns – Extended, Standard and Mixed. In all cases temperatures of 21°C in the living room and 18°C in the other occupied rooms were assumed. The three options considered in assessing the level of fuel poverty were:

- Extended Heating Pattern: All occupants were assumed to require heating for 16 hours per day, 7 days a week.
- Standard Heating Pattern: All occupants were assumed to require heating for 9 hours per day during the week (morning and evening) and 16 hours a day at the weekend.

- Mixed Heating Pattern: The heating pattern was varied depending on the category of occupant. Households with someone at home all day were assumed to use the Extended Heating Pattern; those at work were assumed to use the Standard Heating pattern; those classified as “under-occupying” had a Partial Heating Regime.

See Appendix 1 for further details.

Results based on the mixed heating pattern are presented in this report unless otherwise stated. This is, firstly, because this heating pattern takes account of the various categories of occupant and, secondly, to remain consistent with the approach used in England.

## 2.6 Fuel costs

Fuel costs were researched from the Energywatch website using postcodes and different tariffs, the Sutherland Comparative Domestic Heating Costs (available at [www.salkent.co.uk](http://www.salkent.co.uk)) and suppliers websites.

Table 2.1 shows the average fuel costs for South West England and Wales for the three complete years the HEES has been in operation.

Table 2.1 Fuel costs in South West England and Wales

	2001	2002	2003
Gas/KWh	1.48	1.52	1.57
Bulk LPG/Litre	25.7	23.4	25.6
28 sec Oil/Litre	20.5	19.4	17.5
Coal/Kg	13.6	13.9	13.9
On peak electricity/KWh	6.6	6.8	8.5
Economy 7 (off peak)/KWh	2.6	2.7	2.9
Economy 7 (on peak)/KWh	7.7	7.5	8.6

In addition, fuel costs varied greatly between suppliers; for example, the difference in the cost of gas from SWALEC and from British Gas was over 10% for a property in South Wales using approx 140GJ/year. The added complication of different tariffs made it very difficult to define a pricing schedule for Welsh households.

With the knowledge that approximately 50% of the HEES grants were awarded in 2001 and 2002, and 50% in 2003, the fuel costs shown in Table 2.2 were used by the NHER software to calculate total running costs.

Table 2.2 Fuel costs used in analysis (all prices include VAT at 5%)

Fuel	Standing charge (£)	Cost (£/GJ)	Cost (pence/unit)	Unit used
Mains gas	37.26	4.22	1.52	KWh
Bulk LPG	55.13	10.40	25.00	Litre
28 sec oil	0	4.90	18.80	Litre
Coal	0	4.80	13.80	Kg
On peak electricity	37.67	21.07	7.59	KWh
Economy 7(off peak)	13.37	7.97	2.87	KWh
Economy 7(on peak)	37.67	22.29	8.03	KWh

## 2.7 Fuel price variation

One of the aims of the study is to assess how sensitive the numbers in fuel poverty are to rises in fuel prices.

Recent trends have been for falling rather than rising fuel prices. For domestic consumers, average prices in real terms fell by 10% for gas and 19% for electricity between 1997 and 2002 (Energy White Paper, 2003).

However, this is changing due to:

- The need to import more gas from Europe.
- Instability in the Middle East affecting oil prices.
- The Renewables Obligation.
- Increased demand for LPG for transport.

Since NES started this study, British Gas and Npower have announced price increases of approximately 10%.

We have explored four scenarios in this study; equal increases in the cost of all fuels of 5%, 10%, 20% and 30%.

## 2.8 Target SAP levels

One of the aims of the study was to evaluate the effect of introducing greater assistance through HEES. This may be achieved by increasing the grant available and hence the number of measures, or by increasing the range of measures to target hard to treat properties. This was examined by assessing the impact on the numbers in fuel poverty of improving all properties to set minimum SAPs of 50, 60, 65, 70 etc. A fuel running cost had to be calculated for each of the minimum SAP levels.

The difficulty with this approach is that SAP cannot be used to estimate total dwelling running costs. SAP is based on heating and hot water costs only and is independent of location. For total running costs, the cost of lights, appliances, cooking and standing charges must be estimated.

In this study, the equations underlying the NHER Cost Table were used to derive estimates of running costs from the property's energy rating and floor area. This is in line with the original aim of the NHER Cost Table, which was to enable householders to estimate a property's running costs from its NHER and floor area, thus allowing comparisons between properties. It is a robust procedure, based on the previous three year average fuel costs, which are updated annually.

The resulting running costs were calculated for Standard Occupancy. A correction was then applied to estimate the running costs for the appropriate Heating Pattern (Extended, Mixed or Standard), based on the ratio between fuel costs for the specific dwelling at Standard, Mixed and Partial Heating. A correction was also applied to convert from three year average fuel costs to current fuel costs.

## 2.9 The Questionnaire

The answers to the key research questions listed in section 1.2 depend on accessing accurate and detailed information on the incomes of recipient households and the energy efficiency of their dwellings.

Postal questionnaires were used to obtain the required information. Multiple questionnaires were sent to each household and each adult was asked to complete their own questionnaire. The income questions were embedded within an extensive list of questions seeking information about the household and the respondents' views and experience of poverty.

The questionnaire was piloted through personal interviews. The piloting exercise aimed to investigate:

- Total income for the household, by exploring what benefit the household receives, individual income levels and income from other adults in the household.
- Level of deprivation experienced by the household.
- Household composition.
- Subjective measures of fuel poverty, eg, the perceived ability of the householder to heat their home to a comfortable level.
- The householders' perception of the adequacy of their income to maintain a reasonable living.
- The health of the respondent and others in the household.

The questionnaire used questions and wording that had been used in other surveys and had produced valid results, for example the Office for National Statistics Harmonised Question set and the EuroQol 5D question protocol for measuring health.

The pilot study was carried out in April 2004 and covered the same target groups of HEES recipients, but was limited to the Cardiff, Newport and Swansea areas for logistical purposes. The pilot study aimed to:

- Check the clarity of the questions asked
- Include additional responses to multiple-choice questions if the pilot group regularly offered information not covered on the multiple choices listed.
- Assess the response rates.

Four hundred and fifty five grant recipients were mailed with a 'warm-up' letter, reminding them they had recently received a HEES grant, that the Welsh Assembly were in the process of evaluating the effectiveness of the grant and that they might be contacted at some later date to answer questions on their grant. Follow up phone calls were made, to request an interview, until a sample of 50 had been obtained. Phone calls to 90 recipients had to be made to obtain the required sample of 50.

The piloting exercise highlighted further options for the multiple-choice questions and the need for clarification on the income and household composition questions. A new question asking recipients to comment on the whole HEES experience was also included. The final questionnaire, cover letter and fair processing notice are shown in Appendices 2, 3 and 4 respectively.

### 3. The HEES sample

#### 3.1 Data from EAGA

Data files received from EAGA showed that 24,124 householders received a HEES grant between March 2001 and January 2004. Data provided by EAGA was imported to the NHER Probase software and processed through NHER Auto Evaluator 4.1. Of the 24,124 records, 20,200 produced values for the SAP before and after improvement measures. The average SAP of the properties before improvement was 44 and after improvement it rose to 58. The need for complete occupancy levels (required to calculate running costs) reduced the sample to 14,522. Further personal data were required to ensure that only households who had applied for, and were eligible for, the HEES grant filled out questionnaires. Date of birth was used to cross-check that the survey respondent was the HEES applicant. The requirement for date of birth further reduced the EAGA data set to 13,040.

The total HEES recipient population was broken down by household type (Table 3.1) and qualifying benefit (Table 3.2). Perhaps surprisingly, in more than 13% of the records the qualifying benefit and in 24% of cases household types were not specified. At the time of the HEES survey the surveyor must record the type of evidence used to show that a qualifying benefit was being received e.g. a passbook and a reference number. A code relating to the type of benefit should also be entered on the form. Surveyor error, either a missing benefit code or an unidentified code, resulted in over 13% of the qualifying benefits being coded as unknown in over 13% of records. Also a large percentage of household types were recorded as 'none of the above'. These may have included households with 3 or more adults for example.

Table 3.1: HEES applicants by Household Type

Household type	All HEES		Mailout	
	Number	%	Number	%
1 Adult	1,034	4.2	904	5.5
1 Adult 1 Child	1,393	5.8	610	5.5
1 Adult 2+ Children	1,857	7.7	726	6.4
1 Pensioner	6,348	26.3	5,288	37.9
2 Adult 1 Child	1,281	5.3	794	3.9
2 Adult 2+ Children	1,885	7.8	1,097	8.4
2 Pensioners	4,522	18.7	3,621	25.6
None of the above	4,028	16.7		
Missing	1,833	7.6		
<b>Total</b>	<b>24,124</b>	<b>100</b>	<b>13,040</b>	<b>100</b>

Table 3.2 HEES applicants by qualifying benefit

Benefit type	All HEES		Mailout	
	Number	%	Number	%
Attendance Allowance	3,300	13.7	2,418	18.5
Council Tax Benefit	1,109	4.6	753	5.8
Disability Living Allowance	7,862	32.6	3,937	30.2
Housing Benefit	1,025	4.2	829	6.4
Income Support	5,221	21.6	3,471	26.6
Working Families Tax Credit	1,823	7.6	1,366	10.5
Other <sup>#</sup>	421	1.7	266	2.0
Unknown	3,363	13.9		
<b>Total</b>	<b>24,124</b>	<b>100</b>	<b>13,040</b>	<b>100</b>

<sup>#</sup> includes disability premium, disabled persons tax credit, income based job seekers allowance, lone parent benefit and war disablement pension

### 3.2 Survey returns

The questionnaire was sent to 18,552 adults in 13,040 properties. Two thousand, seven hundred and ten questionnaires were returned to NES although 698 were rejected because the householder:

- Could not say what their income was at the time of the grant (312);
- Claimed not to have received a grant (150);
- Did not fill in the questionnaire to an extent where it could provide useful information (136);
- Said the number of people in their household had changed (52);
- Had died (17); or
- Had changed address (31).

2,012 useful returns were received from 1,680 households, within the time specified. A breakdown of the returns is shown below.

As expected, the proportion of survey returns from pensioners was higher than the proportion of known pensioners represented in the overall HEES population (Table 3.3).

Where the number of adults or children listed in the questionnaire did not match the household type specified in the data set from EAGA, the household composition was changed to 'None of these'. Each household type was well represented in the survey returns.

Table 3.3 Survey returns by Household Type

Household type	% of questionnaire returns	% total HEES <sup>#</sup>
1 Adult	5.6	4.2
1 Adult 1 Child	4.6	5.8
1 Adult 2+ Children	5.9	7.7
1 Pensioner	38.6	26.3
2 Adult 1 Child	4.0	5.3
2 Adult 2+ Children	8.1	7.8
2 Pensioners	26.3	18.7
Unspecified	6.9	24.1
Total	100	100

<sup>#</sup> from table 3.1

Each of the qualifying benefits was well represented in the sample of survey returns (Table 3.4). However, the response rate from people on disability living allowance and housing benefit was lower than their occurrence in the total HEES population.

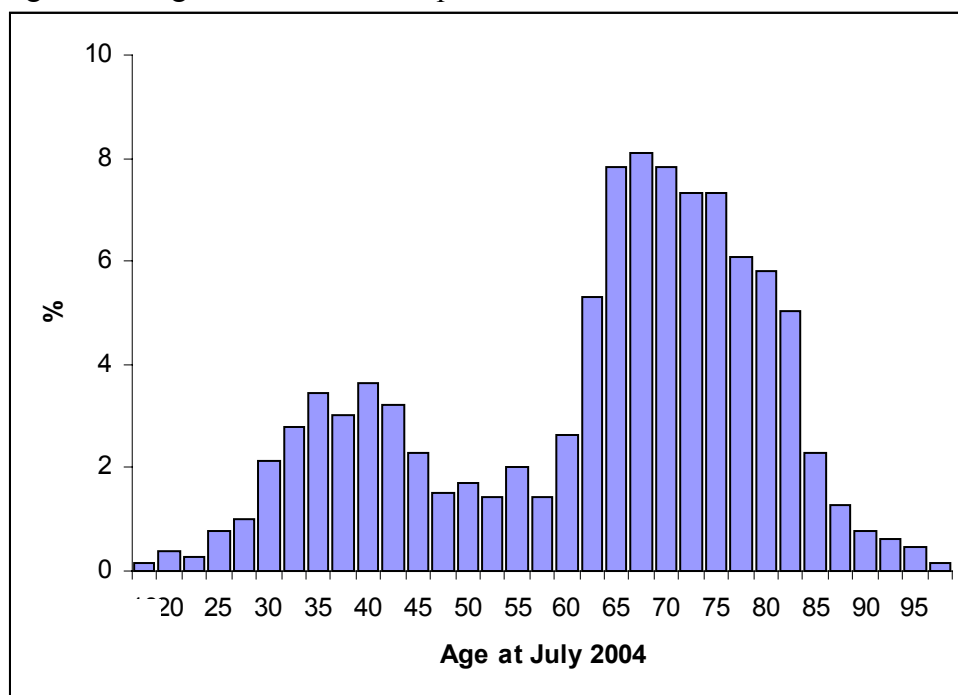
Table 3.4 Survey returns by qualifying benefit

Benefit type	% of questionnaire returns	% total HEES <sup>#</sup>
Attendance Allowance	14.6	13.7
Council Tax Benefit	7.3	4.6
Disability Living Allowance	27.8	32.6
Housing Benefit	1.9	4.2
Income Support	21.9	21.6
Working Families Tax Credit	6.3	7.6
Other	1.8	1.7
Unknown	18.4	13.9
Total	100	100

<sup>#</sup> from table 3.2

Analyses of the age of the respondents who returned valid questionnaires shows a very marked bimodal distribution (see Figure 3.1.below) with two peaks at around 40 and 70 years of age.

Figure 3.1: Age distribution of respondents



Given the eligibility criteria for receipt of HEES grants, a bimodal age distribution of recipients is not surprising.

### 3.3 Measuring income from the survey returns

Each respondent was asked questions about

- the benefits they receive
- the benefits of other members in their household
- their own sources of income
- other sources of income received by other household members
- their own net weekly income
- their households net weekly income
- their own changes in income since receipt of the HEES grant
- changes in the households income since receipt of the HEES grant
- details of the households housing costs

Household income at the time of the receipt of the HEES grant was calculated by deducting or adding any change to the current household income; 31% of households reported some income change since receipt of the HEES grant. Where there was more than one respondent in a household the sum of the individual income questions was used in preference to the answers to the household income questions.

Out of the 2,012 valid questionnaires 1,842 respondents (91%) answered the individual income question and 1,737 (86%) answered the household income question. A banded income question was used in accordance with the recommendations of the Office for National Statistics (appendix 5). Figures 3.2 and 3.3 show histograms of the individual and household weekly income. Both histograms are skewed with considerable heaping around the £100-£120 income band.

One of the reasons for this is that a large number of respondents and their households in this survey were dependent on state benefits – particularly pensions.

Figure 3.2: Respondents weekly income

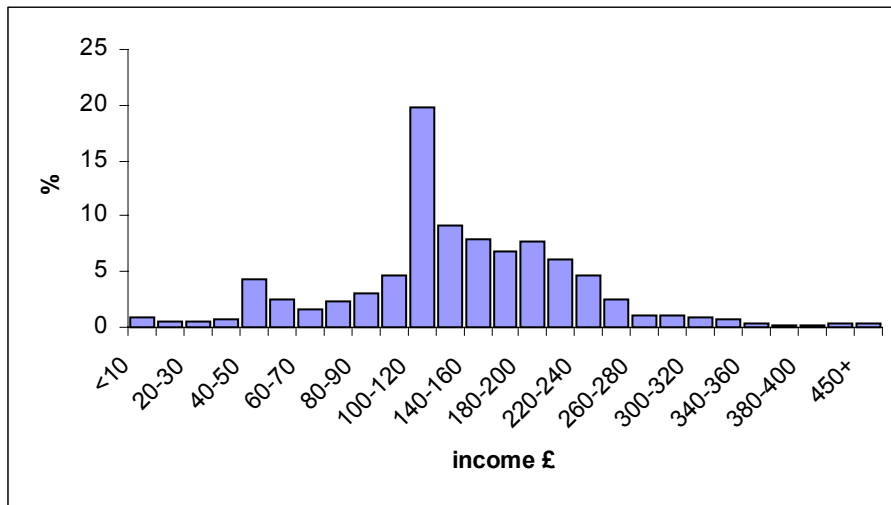


Figure 3.3: Households weekly income

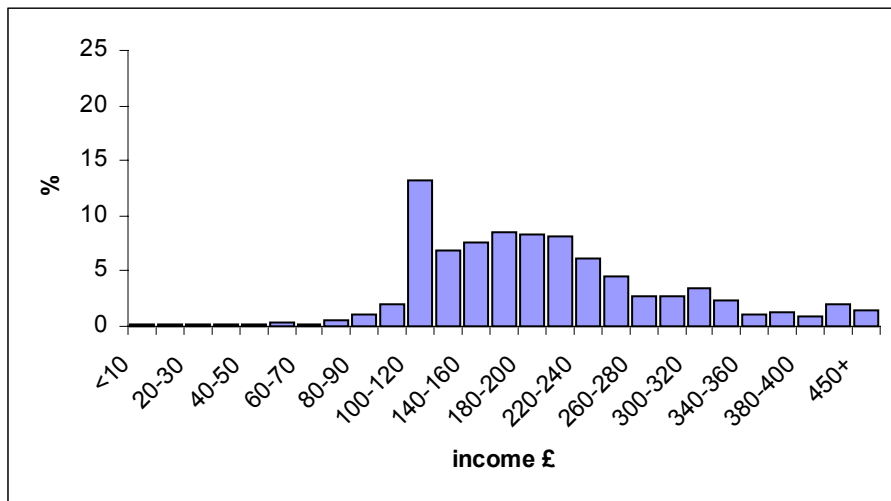


Table 3.5 shows the average weekly income by household type. It shows the average income increasing as the number of adults in the household and the total number in the household increases.

Table 3.5 Average weekly income by household type

Household type	Weekly income, £
1 Adult	139
1 Adult 1 Child	145
1 Adult 2+ Children	195
1 Pensioner	144
2 Adult 1 Child	258
2 Adult 2+ Children	313
2 Pensioners	229
Unspecified	256

### 3.4 Weighting the survey returns

There was a higher proportion of survey returns from pensioners than would have been expected from a simple random sample of HEES applicants (Table 3.3). It is important that the data are weighted to adjust for any differential non-response between pensioner households and younger families. Therefore post-stratification population weights were calculated using the generalised calibration method (Deville et al, 1993) to adjust for this sampling bias by household type. This method controls the weighted sample size simultaneously to a number of separate marginal populations (Elliot, 1999). For example, if in a survey there are half as many young men who respond as there are in the general population then the number of young men will be weighted up and the rest of the population weighted down so that the sample size remains the same but the proportion of young men to the rest of the population is now corrected.

Figure 3.4 shows the distribution of full household income (including housing benefit) weighted to allow for sampling biases and differential non-response (see section 3.2). The average full household weekly income was £204.

Figure 3.4 Full household weekly income

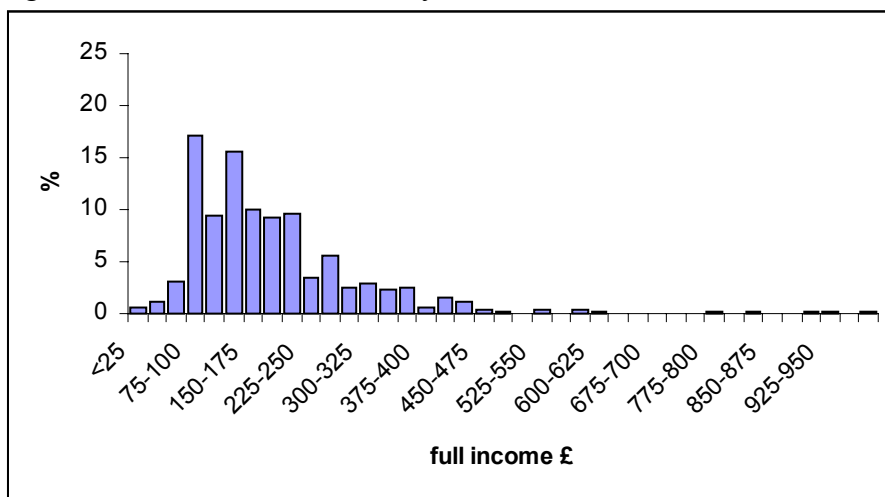
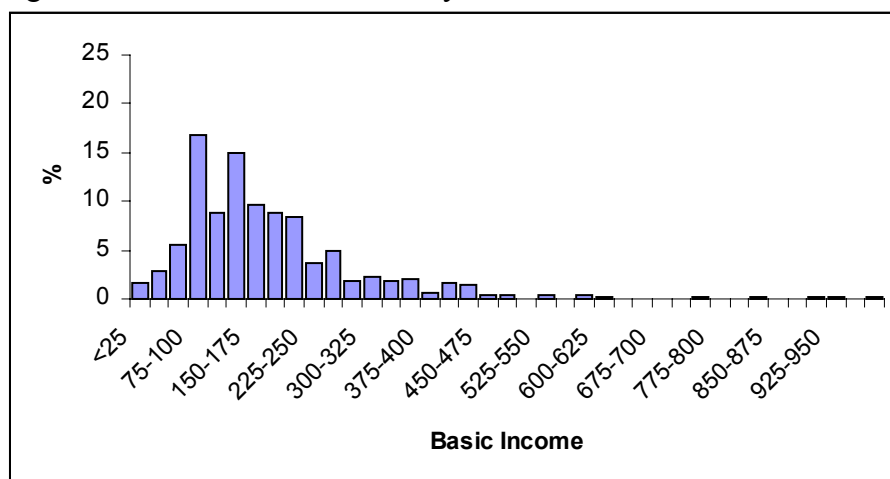


Figure 3.5 shows income minus housing costs (basic income), again weighted to allow for sampling biases and differential non-response. The average basic income was £196.

Figure 3.5 Basic household weekly income



Appendices 6 and 7 show full tables of results. Appendix 7 shows the estimated number of HEES recipients for the main characteristics, with a 95% confidence interval, weighting the results by household type. For completeness, Appendix 6 shows the number and percentage of survey respondents.

The results section of this report is based on the survey returns weighted by the household types in the HEES population. The income results were collected using a modified version of the Office for National Statistics harmonised banded income question protocol (see <http://www.statistics.gov.uk/about/data/harmonisation/>) the results should therefore be the as reliable and valid as possible given the limitations of the postal survey methodology (see Appendix 5 for a detailed discussion of the reliability and validity of the income measured in this survey). Unfortunately the group were not aware of any other survey of this target group which could be used to compare the income levels found in this study.

## 4. Results

### 4.1 General

Table 4.1 shows the percentage of HEES recipients in fuel poverty under the two definitions of income.

Table 4.1 Percentage fuel-poor by income calculation

Income calculation	Pre-intervention	Post-intervention
Full (including Housing benefit and ISMI)	29.4	13.4
Basic (Excludes Housing benefit and ISMI)	34.2	19.0

Depending on the definition of income used, either 29.4% or 34.2% of HEES recipients were fuel-poor before receiving a grant. Approximately half of these moved out of fuel poverty after the intervention of HEES.

**In the rest of the results, data is based on Full Income and weighted for household types in the HEES population, whereby an estimated 7,103 households (29.4%) were fuel-poor before HEES intervention.**

The numbers in fuel poverty also change according to the assumed comfort standard (Table 4.2). The percentage of fuel-poor ranged from between 29.4% and 37.6% depending on occupancy levels and heating standards. The figure of 29.4% corresponds to a mixed regime as used in the definition of fuel poverty adopted by the Assembly for reporting purposes (NAfW, March 2003). In the mixed regime, some households are assumed to be out all day, some at home all day and some to only heat part of their home as they live in a larger home than they strictly need to.

Table 4.2 Percentage fuel-poor by heating pattern

Assumed Heating Regime	Pre-intervention	Post-intervention	% Reduction
Extended	37.6	18.1	51.8
Mixed (includes under –occupancy)	29.4	13.4	54.4
Standard	34.4	15.4	55.2

**The Mixed regime is used in the remainder of this study. In addition, all percentages are to the nearest whole number.**

The vast majority of HEES recipients were either not fuel-poor or moderately fuel-poor (table 4.3). Less than 4% were in severe or extreme fuel poverty when applying for a grant. In addition, over half of the recipients who were fuel-poor pre-intervention were moved out of fuel poverty by the HEES grant.

Table 4.3 Categories of fuel poverty (%)

Severity	Pre-intervention		Post-intervention		Change %
	Number	%	Number	%	
Not fuel-poor	17,022	71	20,902	87	23
Moderate Fuel Poverty	6,228	26	2,908	12	56
Severe fuel Poverty	583	2	130	1	79
Extreme Fuel Poverty	291	1	194	1	42
Total	24,124	100	24,124	100	

Further analysis in this section is broken down into three parts. Firstly, in the main analysis, each of the aims and objectives listed in section 1.2 have been addressed. Secondly, in an attempt to aid targeting, percentage reduction in fuel poverty has been listed by different characteristics. Finally the characteristics and views of the survey respondents have been presented.

## 4.2 Main analysis

### 4.2.1. The appropriateness of the eligibility criteria

An estimated 7,103 recipients (29%) were fuel-poor when they received help. Table 4.4 shows the estimated number of fuel-poor HEES applicants by qualifying benefit. A high proportion, and a high number, of fuel-poor recipients used income support as their qualifying benefit. Although a high proportion of the households using housing benefit as a qualifying benefit were fuel-poor, this group only accounts for a small number of HEES applicants.

Table 4.4 Estimates of HEES recipients by qualifying benefit

Qualifying benefit	Fuel-poor	% of all fuel-poor	Not fuel-poor	Total	% fuel-poor by benefit <sup>†</sup>
Attendance Allowance	582	8	2,589	3,171	18
Council Tax Benefit	631	9	971	1,602	39
Disability Living Allowance	1,812	26	5,226	7,038	26
Housing Benefit	178	3	259	437	41
Income Support	2,119	30	2,686	4,805	44
Working Family Tax Credit	307	4	1,586	1,893	16
Other*	146	2	275	421	35
Unknown	1,327	19	3,430	4,757	28
Total	7,103	100	17,021	24,124	29

<sup>†</sup> percent within qualifying benefit, eg, 18% of all households using attendance allowance as their qualifying benefit were fuel-poor

\* other includes lone parent benefit, income based job seekers allowance, war disablement pension, disabled persons tax credit, constant attendance allowance and disability premium

#### 4.2.2. Characteristics of the fuel-poor

The characteristics of the fuel-poor have been demonstrated by the figures in tables 4.5, 4.6, 4.7, 4.8 and 4.9 below. The fuel-poor were generally households with pensioners or households with only one adult. A large number of the fuel-poor applying for a HEES grant were owner occupiers, households using gas as their main heating fuel and households living in properties that may be too large for them (table 4.8). Table 4.8 shows that 79% of fuel-poor pensioners were living in properties too large for them.

Table 4.5 Estimates of fuel-poor HEES recipients by household type

Household type	Fuel-poor	% of all fuel-poor	Not fuel-poor	Total	% fuel poor by type <sup>†</sup>
1 Adult	566	8	550	1,116	50
1 Adult 1 Child	680	10	582	1,262	54
1 Adult 2+ Children	760	11	1,149	1,909	40
1 Pensioner	2,783	39	4,239	7,022	40
2 Adult 1 Child	340	5	1,084	1,424	24
2 Adult 2+ Children	194	3	1,764	1,958	10
2 Pensioners	939	13	4,061	5,000	19
Other	841	12	3,592	4,433	19
Total	7,103	100	17,021	24,124	29

<sup>†</sup> percent within household type, eg. 50% of single adult only households were fuel-poor

Table 4.6 Estimates of fuel-poor by tenure

Tenure	Fuel-poor	% of all fuel-poor	Not fuel-poor	Total	% fuel poor within tenure <sup>†</sup>
Council Housing Association	1,006	14	2,216	3,222	31
Owner Occupier	456	6	1,050	1,506	30
Private Rented	5,381	76	13,287	18,668	29
Total	243	3	469	712	34
Total	7,103	100	17,021	24,124	29

<sup>†</sup> percent within tenure, eg. 31% of council tenants were fuel-poor

Table 4.7 Estimates of fuel-poor by main heating fuel

Main heating fuel pre intervention	Fuel-poor	% of all fuel-poor	Not fuel-poor	Total	% fuel poor within fuel type
Gas	3,733	53	12,750	16,483	23
LPG	231	3	158	389	59
Oil	261	4	680	941	28
House coal	780	11	2,156	2,936	27
Smokeless coal	82	1	32	114	72
Direct electric <sup>†</sup>	1,821	26	710	2,531	72
Off peak electric	198	3	532	730	27
Total	7,103	100	17,022	24,124	29

<sup>†</sup> Using electricity as required on a fixed 24 hour tariff rather than storing heat from a cheaper tariff (eg. Using storage heaters and economy 7/off peak tariff)

Table 4.8 Estimates of fuel-poor by household type and under-occupancy<sup>†</sup>

Household type	Under occupied				Total fuel-poor
	No	No (%) <sup>*</sup>	Yes	Yes (%) <sup>*</sup>	
1 Adult	92	1	474	7	566
1 Adult 1 Child	490	7	189	3	680
1 Adult 2+ Children	695	10	65	1	760
1 Pensioner	568	8	2,215	31	2,783
2 Adult 1 Child	315	4	25	1	340
2 Adult 2+ Children	173	2	21	0	194
2 Pensioners	564	8	374	5	393
Other	804	11	38	1	841
Total	3,700	52	3,403	48	7,103

<sup>†</sup> see section 2.5 and appendix 1 for definition of under occupancy

<sup>\*</sup> % of all fuel poor

Table 4.9 shows estimates of fuel poverty by income level. It shows that although the incidence of grant recipients with an income of over £300 a week is 3,716 (15%), only 43 of them are fuel poor (less than 1%).

Table 4.9 Estimates of fuel poverty by weekly income

Weekly income	Fuel-poor	% of all fuel-poor	Not fuel-poor	Total	% fuel poor within income
< £100	2,048	29	173	2,221	92
£100-£150	3,715	52	3,665	7,380	50
£150-£200	791	11	3,842	4,633	17
£200-£250	379	5	4,083	4,462	9
£250-£300	125	2	1,587	1,712	7
£300+	43	1	3,673	3,716	1
Total	7,103	100	17,021	24,124	29

#### 4.2.3. Households moved out of fuel poverty

The number of households moved out of fuel poverty as a result of receiving measures from the HEES grant was estimated at 3,871 (55%). Table 4.10 shows the estimated numbers of fuel-poor recipients before and after the intervention of HEES. Almost half of the households moved out of fuel poverty had used either income support or disability living allowance as the qualifying benefit for HEES (although they may also claim other benefits).

Table 4.10 Estimates of HEES recipients by qualifying benefit

Qualifying benefit	Pre-intervention		Post-intervention		% moved out of fuel-poor <sup>†</sup>
	Fuel-poor	% of all fuel-poor	Fuel-poor	% of all fuel-poor	
Attendance Allowance	582	8	241	7	59
Council tax Benefit	631	9	273	8	57
Disability Living Allowance	1,812	26	741	23	59
Housing Benefit	178	3	79	2	56
Income Support	2,119	30	888	27	58
Working Family Tax Credit	307	4	242	7	21
Other	146	2	80	2	45
Unknown	1,327	19	694	21	48
<b>Total</b>	<b>7,103</b>	<b>100</b>	<b>3,232</b>	<b>100</b>	<b>55</b>

<sup>†</sup> percent within qualifying benefit

Pensioner households (single pensioners and pensioner couples) made up over 50% of all the total fuel-poor pre intervention. The intervention of HEES moved 57% of these pensioners out of fuel poverty, a significant figure given the higher numbers in these household types (Table 4.11).

Table 4.11 Estimates of fuel-poor moved out of fuel poverty after the intervention of HEES by household type

Household type	Pre-intervention		Post-intervention		% moved out of fuel-poverty <sup>†</sup>
	Fuel-poor	% of all fuel-poor	Fuel-poor	% of all fuel-poor	
1 Adult	566	8	324	10	43
1 Adult 1 Child	680	10	357	11	48
1 Adult 2+ Children	760	11	373	12	51
1 Pensioner	2,783	39	1,170	36	58
2 Adult 1 Child	340	5	163	5	52
2 Adult 2+ Children	194	3	97	3	50
2 Pensioners	939	13	415	13	56
Other	841	12	332	10	61
<b>Total</b>	<b>7,103</b>	<b>100</b>	<b>3,232</b>	<b>100</b>	<b>55</b>

<sup>†</sup> percent moved out of fuel poverty within household type

A large number of owner occupier households (2956 households, 55%) moved out of fuel poverty (Table 4.12). Although smaller in terms of numbers, a large percentage of council tenants (52%) and housing association tenants (61%) also moved out of fuel poverty due to the intervention of HEES, but effectiveness was lower for recipients in the private rented sector. A large number of households using gas or direct electric as their main heating fuel were moved out of fuel poverty (Table 4.13). In percentage terms, 49% of fuel-poor households relying on gas were moved out of fuel poverty and 78% of fuel-poor households relying on direct electric were moved out of fuel poverty by the intervention of HEES.

Table 4.12 Estimates of fuel-poor moved out of fuel poverty after the intervention of HEES by tenure

Household type	Pre-intervention		Post-intervention		% moved out of fuel-poverty <sup>†</sup>
	Fuel-poor	% of all fuel-poor	Fuel-poor	% of all fuel-poor	
Council	1,006	14	481	15	52
Housing Association	456	6	179	6	61
Owner Occupier	5,381	76	2,425	75	55
Private Rented	243	3	147	4	40
<b>Total</b>	<b>7,103</b>	<b>100</b>	<b>3,232</b>	<b>100</b>	<b>55</b>

<sup>†</sup> percent moved out of fuel poverty within tenure

Table 4.13 Estimates of fuel-poor moved out of fuel-poverty by main heating fuel pre-intervention

Household type	Pre-intervention		Post-intervention		% moved out of fuel-poverty <sup>†</sup>
	Fuel-poor	% of all fuel-poor	Fuel-poor	% of all fuel-poor	
Gas	3,733	53	1,906	59	49
LPG	231	3	179	6	23
Oil	261	4	125	4	52
House coal	780	11	455	14	42
Smokeless coal	82	1	57	2	30
Direct electric*	1,821	26	398	12	78
Off peak electric	198	3	113	3	43
<b>Total</b>	<b>7,103</b>	<b>100</b>	<b>3,232</b>	<b>100</b>	<b>55</b>

\* Using electricity as required on a fixed 24 hour tariff rather than storing heat from a cheaper tariff (eg. Using storage heaters and economy 7 tariff)

<sup>†</sup> percent moved out of fuel poverty within heating fuel.

#### 4.2.4. *Households still poor after the intervention of HEES*

The number of households still fuel-poor after the intervention of HEES was 3,232. This represents a reduction of 54%. Over half of these households used income support or disability benefit as their qualifying benefit (table 4.10). Table 4.14 shows the number of households by type and under-occupancy in fuel poverty before and after the intervention of HEES. Almost 50% of the fuel-poor are living in properties that may be too large for them and over a third of the population still fuel-poor after the intervention of HEES were pensioners (either single pensioners or pensioner couples) in large properties.

Table 4.14 Estimates in fuel poverty by household type and under-occupancy after the intervention of HEES

Household type	Under occupied				Overall
	No		Yes		
	Fuel-poor	%	Fuel-poor	%	
1 Adult	52	2	271	8	324
1 Adult 1 Child	284	9	73	2	357
1 Adult 2+ Children	307	9	66	2	373
1 Pensioner	311	9	858	27	1,170
2 Adult 1 Child	139	4	23	1	163
2 Adult 2+ Children	77	2	20	1	97
2 Pensioners	227	7	187	6	415
Other	295	9	37	1	332
<b>Total</b>	<b>1,691</b>	<b>52</b>	<b>1,536</b>	<b>48</b>	<b>3,232</b>

#### 4.2.5. *Vulnerability of households to fuel price increases*

Table 4.15 below illustrates the sensitivity of fuel poverty to rising fuel prices. A 20% increase in fuel prices would lead to almost double the number of households in fuel-poverty after the intervention of HEES. A 30% increase in fuel costs puts almost 30% of the HEES recipients in fuel poverty. However before the intervention of

HEES a 20% increase in fuel costs would result in 36% of the recipient population being fuel poor (as opposed to 29%) and a 30% increase in fuel costs would increase the level of fuel poverty in the pre intervention population to 40%.

Table 4.15 Fuel-poor by increases in fuel costs (% of all HEES recipients)

	Total		Severe/extreme	
	Number	%	Number	%
0%	3,232	13	324	1
5%	3,675	15	388	2
10%	4,257	18	404	2
20%	5,618	23	469	2
30%	7,059	29	648	3

**4.2.6. The effect of introducing greater assistance (in terms of SAP improvements)**

The average SAP of the whole sample, 20,026 properties with enough information to calculate a SAP, was 44 before HEES intervention. The average SAP after intervention increased to 58. Table 4.16 shows how the SAP changed after the intervention of HEES.

Table 4.16 Property SAPs before and after HEES intervention (% of 20,026)

SAP pre-HEES	SAP post-intervention								Total pre-HEES
	<20	20-30	30-40	40-50	50-55	55-60	60-65	65+	
<20	3	1	1	1	1	1	1	3	11
20-30		2	1	1	1	1	1	2	8
30-40			3	3	1	1	1	3	12
40-50				8	3	4	6	7	28
50-55					2	3	3	6	15
55-60						3	3	4	11
60-65							2	5	7
65+								8	8
Total post	3	3	5	13	8	12	17	38	100

Table 4.17 shows the level of fuel poverty pre- and post-intervention by the SAP of the property pre intervention. There is a clear relationship between the SAP of the property pre intervention and fuel poverty (Table 4.17). As expected the incidence of fuel poverty decreases as the SAP of the property increases. Although the proportion of properties with a SAP lower than 20 dropped from 11% to 3% with the intervention of HEES (table 4.16), the percentage of households in fuel poverty in this SAP band was still quite high at 30% post-intervention (table 4.17). This shows that the measures carried out by HEES were insufficient to remove many households from fuel poverty.

Table 4.17 Fuel-poor by the SAP of their property at the time of the HEES survey

SAP of the property	Pre-intervention		Post-intervention		Reduction %
	No.	%	No.	%	
<20	2,286	80	875	30	62
20 – 30	936	52	391	22	58
30 – 40	1,209	36	575	17	52
40 – 50	1,653	26	760	12	54
50 – 55	569	19	325	11	45
55 – 60	269	14	188	10	31
60 - 65	159	10	118	8	26
65+	23	3	0	0	100
Total	7,103	29	3,232	13	54

The effect of improving the SAP rating of all properties to various minimum levels is shown in table 4.18. The fact that even a target SAP of 100 leaves 1% of households in fuel poverty, coupled with approximately 25% of the housing stock being difficult to treat homes with solid walls implies that it will be very difficult to improve to a SAP approaching even 60, and demonstrates that energy efficiency measures alone cannot eradicate fuel poverty.

Table 4.18 Fuel-poor by target SAP values

Dwelling Improved to	Post-intervention		Reduction %
	No.	%	
As Current	3,232	13	N/A
SAP 50	2,461	10	24
SAP 55	2,244	9	31
SAP 60	2,075	9	36
SAP 65	1,810	8	44
SAP 70	1,689	7	48
SAP 80	1,062	4	67
SAP 90	459	2	86
SAP 100	240	1	93

Sections 4.2.7 to 4.2.12 show analyses by several key characteristics and all their sub categories even though some occur in small numbers. Although some of these sub categories may not contribute significantly to explaining fuel poverty, the percentage reductions may aid The Welsh Assembly in future targeting.

#### 4.2.7. Fuel poverty by household type

Table 4.19 shows a high level of fuel poverty overall, and severe/extreme fuel poverty among single adult, lone parents with children and single pensioner households, both before and after the intervention of HEES. Only 43% of single adult households were moved out of fuel poverty by the HEES grant compared to approximately 50% for other household types.

Table 4.19 Fuel-poor by household type

Category	Pre-intervention				Post-intervention				Reduct- ion
	Total		Severe/ Extreme		Total		Severe/ Extreme		Total
	No.	%	No.	%	No.	%	No.	%	%
1 Adult	567	51	65	6	324	29	32	3	43
1 Adult 1 Child	680	54	48	4	357	28	16	1	48
1 Adult 2+ Children	760	40	98	5	373	20	4	3	51
1 Pensioner	2,783	40	372	5	1170	17	81	1	58
2 Adult 1 Child	340	24	0	0	163	11	0	0	52
2 Adult 2+ Children	194	10	16	0	97	5	16	1	50
2 Pensioners	939	19	113	2	415	8	65	1	56
Other	841	19	167	4	332	8	65	1	61
<b>Total</b>	<b>7,103</b>	<b>29</b>	<b>874</b>	<b>4</b>	<b>3,232</b>	<b>13</b>	<b>324</b>	<b>1</b>	<b>55</b>

#### 4.2.8. Fuel poverty by tenure

A similar level of fuel poverty occurs in all tenures pre-intervention (Table 4.20). After the HEES grant the proportion of fuel-poor households in the private rented sector was significantly higher than in the other tenures. Closer examination of this group showed that two thirds of pensioners in private rented accommodation were fuel-poor post-intervention.

Table 4.20 Fuel-poor by tenure

Category	Pre-intervention				Post-intervention				Reduction
	Total		Severe/ Extreme		Total		Severe/ Extreme		Total
	No.	%	No.	%	No.	%	No.	%	%
Council Owned	1,006	31	140	3	481	15	27	1	52
Housing Association	456	30	65	4	179	12	15	1	61
Private Ownership	5,381	29	697	4	2,425	13	253	1	55
Private Rented	243	34	32	5	147	20	28	2	40
<b>Total</b>	<b>7,103</b>	<b>29</b>	<b>874</b>	<b>4</b>	<b>3,232</b>	<b>13</b>	<b>324</b>	<b>1</b>	<b>55</b>

#### 4.2.9. Fuel poverty by fuel type before intervention

Table 4.21 shows the heating fuel changes as a consequence of the HEES intervention. Each row shows the heating fuel pre-intervention and the percentage of households with that fuel who had their fuel changed by HEES. For example, 27% of properties using smokeless fuel pre HEES for heating were changed to gas by the intervention of HEES.

Table 4.21 Fuel changes by pre-intervention fuel type

Fuel pre HEES	Fuel post HEES							Total pre HEES
	Gas	LPG	Oil	Coal	Smokeless	Direct elec	Off peak elec	
Gas	100							100
LPG		100						100
Oil	1		99					100
Coal	25			70			5	100
Smokeless	27				73			100
Direct elec	73					20	6	100
Off peak elec	12						88	100

Although the intervention of HEES may change the main heating system and heating fuel, table 4.22 shows the incidence of fuel poverty by fuel type pre-intervention. The highest level of fuel poverty occurs for homes heated by LPG, smokeless fuel and direct electric heating. A high proportion of the fuel-poor dependent on these fuels were also in the extreme or severe categories of fuel poverty. In addition, the HEES grant was relatively ineffective in helping households who relied on LPG and smokeless fuels to heat their homes – after intervention 46% of householders relying on LPG and 60% of households relying on smokeless fuel were still fuel-poor. A closer examination of these properties indicated that they were not generally hard to heat properties and it is probably the high cost of the fuel causing fuel poverty. Intervention by HEES grant moved 78% of the fuel-poor on direct electric heating out of fuel poverty by changing the fuel type used for heating.

Table 4.22 Fuel-poor by heating fuel pre intervention

Category	Pre-intervention				Post-intervention				Reduction Total
	Total		Severe/Extreme		Total		Severe/Extreme		
	No.	%	No.	%	No.	%	No.	%	
Gas	3,733	23	267	2	1,906	12	209	1	49
LPG	231	58	34	8	179	46	32	8	23
Oil	261	28	0	0	125	18	0	0	52
Housecoal	780	27	140	2	455	12	0	0	42
Smokeless	82	72	32	28	57	60	13	10	30
Direct Electric	1,821	72	456	18	398	14	56	3	78
Off peak electric	198	27	18	2	113	26	16	2	43
Total	7,103	29	874	4	3,232	13	324	1	55

#### 4.2.10. Fuel poverty by heating system pre intervention

All householders using room heaters pre-intervention were moved out of fuel poverty (table 4.23).

Table 4.23 Fuel-poor by heating system pre intervention

Category	Pre-intervention		Post-intervention		Reduction
	Number	%	Number	%	%
Boilers & Radiators	3,960	23	2,234	13	43
Room Heaters	2,907	48	880	15	70
Storage Heaters & Underfloor heating	201	28	118	16	41
Warm Air	32	40	0	0	100
Total	7,103	29	3,232	13	55

#### 4.2.11. Fuel poverty by qualifying benefit

The main benefits used to qualify for a HEES grant are shown in table 4.24 with the incidence of fuel poverty for each grant type. The table shows the benefit used as a qualifier to the HEES grant not the incidence of any particular benefit type in the HEES population. Relatively few applicants on Attendance Allowance or Working Families Tax Credit were fuel-poor pre-intervention. In addition only a small proportion of households on working families tax credit were moved out of fuel poverty. Further examination of this group showed no relationship between tenure or fuel type and fuel poverty.

Table 4.24 Fuel-poor by benefit used to qualify for intervention

Type	Pre intervention		Post intervention		Reduction
	No.	%	No.	%	%
Attendance Allowance	582	18	241	8	59
Council Tax Benefit	631	39	273	17	57
Disability Living Allowance	1,812	26	741	11	59
Housing Benefit	178	41	79	20	56
Income Support	2,119	44	888	18	58
Working Families Tax Credit	307	16	242	13	21
Other	146	35	80	19	45
Unknown	1,327	28	694	15	47
Total	7,103	29	3,232	13	55

#### 4.2.12. Fuel poverty by working status

The questionnaire asked HEES recipients to describe their own working status (although others in the household may have another working status). The highest level of fuel poverty is among applicants waiting to start work or seeking work (table 4.25). It is also quite high for students.

Table 4.25 Fuel-poor by working status

Category	Pre-intervention		Post-intervention		Reduction
	Number	%	Number	%	%
Working Full Time	199	12	161	10	17
Working Part Time	518	24	213	10	60
Waiting to Start a Job	62	57	51	43	25
Seeking Work	244	60	146	36	40
Long Term Ill	1,466	32	739	16	50
Retired	3,517	30	1,551	13	58
Looking after home	752	33	304	13	59
Student	146	47	65	21	56
Other	32	22	0	0	100
Total	7,103	29	3,232	13	54

#### 4.3. Characteristics and views of the survey respondents

##### 4.3.1 Fuel poverty by satisfaction with the home

Table 4.26 shows the proportion of the fuel-poor households and the level of satisfaction with their home. The question asked was not directly related to the heating or the satisfaction of the heating system but rather the overall satisfaction of the home. In addition the question was not intended to be retrospective, responses are applicable to the home post-intervention.

Perhaps surprisingly, the majority (75%) of the fuel-poor after the intervention of HEES were satisfied with their property. This compares to 85% of the non fuel-poor.

Table 4.26 Percentage fuel-poor by satisfaction with home

	Fuel-poor		Non fuel-poor	
	Number	% of fuel-poor	Number	% of non fuel-poor
Very satisfied	1,017	31	9,327	45
Fairly satisfied	1,444	45	8,272	40
Neither satisfied nor dissatisfied	333	10	1,549	7
Slightly dissatisfied	300	9	1,253	6
Very dissatisfied	136	4	493	2
Total	3,232	100	20,892	100

##### 4.3.2 Fuel poverty by satisfaction with HEES measures

Although an estimated 3,232 households (13%) were still fuel-poor after the intervention of HEES, 77% of these households said that after HEES they felt warmer in their homes.

Table 4.27 Fuel-poor by comfort of home since intervention

	Fuel poor		Non fuel-poor	
	Number	% of fuel-poor	Number	% of non fuel-poor
Much warmer	1,355	42	10,815	52
Little warmer	1,156	35	6,398	31
About the same	621	19	3,601	17
Colder	99	3	108	1
Total	3,232	100	20,892	100

#### 4.3.3 Fuel poverty by perception of poverty

Householders were asked to estimate the income required to keep a household such as theirs out of poverty and then to say where their household income sat in relation to this figure. Table 4.28 shows how the fuel-poor recipients perceived their level of income in relation to a satisfactory standard. Of all the fuel-poor, 13% did not perceive their household to be in any level of poverty, but 37% felt their income was far below a satisfactory standard. This suggests that perception of poverty may not be a strong indicator of fuel poverty as defined by this study.

Table 4.28 How the fuel-poor perceive their income in relation to a satisfactory standard

	Fuel-poor		Non fuel poor	
	Number	% of fuel-poor	Number	% of non fuel poor
Far above	73	2	656	3
Little above	362	11	3,300	16
About the same	563	17	4,243	20
Little below	656	20	5,557	27
Far below	1,198	37	4,651	22
Don't know	381	12	2,480	12
Total	3,232	100	20,892	100

#### 4.4. Other data collected from the questionnaire

The results in this section are simple aggregations from the survey returns and are not weighted by household type. Tables were run on the full sample of 2012 respondents, but in a two adult households with two responses each respondent had a weighting of 0.5 to give a total of 1,680 households.

##### 4.4.1. Problems with the home post-intervention

The most common problem reported by respondents was leaky roof gutters or windows (Table 4.29). Problems with draughts and shortage of space were also common. Although over one third of respondents had none of the problems listed, 9% of households claimed their heating was inadequate and 21% had problems with draughts – which is of concern given that draught proofing is a HEES measure. In addition, 18% had problems with damp and 11% had problems with mould. NB. Householders could tick more than one problem.

Table 4.29: Problems with your home

	Number	Percent of all respondents
Shortage of space	311	19
Too dark	108	6
Inadequate heating	162	10
Draughts	368	22
Leaky roof, gutters or windows	371	22
Damp	314	19
Rot	199	12
Mould	192	11
No place to sit outside	57	3
Other	91	5
None of these problems	573	34

#### 4.4.2. Levels of comfort

Almost a third of households reported that they felt they could not keep their home warm enough in winter (Table 4.30).

Table 4.30: Can you keep your home warm enough in winter?

	Number	Percent
Yes	1,171	30
No	488	69
Missing	21	1
Total	1,680	100

Bathrooms, toilets and shower rooms were most commonly the area of the home that were not warm enough (households could tick more than one area), followed by kitchens, and halls and landings (Table 4.31). Almost 5% of householders were unable to keep any of their rooms warm enough.

Table 4.31: Areas of the home that are not warm enough

	Number	Percent of all respondents
Children's bedrooms	104	6
Adults' bedrooms	168	10
Living rooms	169	10
Kitchens	201	12
Bathrooms	211	12
Halls	172	10
Other rooms	49	3
All rooms	78	5

The most common reason for not being able to keep the rooms warm enough was a lack of radiators, followed by poor insulation or draughts (householders could tick more than one reason), (Table 4.32).

Table 4.32: Reasons why the home cannot be kept warm enough

	Number	Percent of all respondents
Heating is inefficient or broken	146	9
Not enough radiators	225	13
Poor insulation/draughts	201	12
Too expensive	144	9
Other reason	68	4

Over 80% of the households who answered this question (1,598 answered this question), stated that their home felt much warmer or a little warmer since they received the HEES grant (Table 4.33).

Table 4.33: Effect of HEES grant on warmth

	Number	Percent of all respondents
Much warmer	806	51
A little warmer	498	31
About the same	279	17
Colder	15	1
Total	1,598	100

Forty six percent of households who answered this question (1,579 answered this question) felt their fuel bills had not changed since receiving the HEES grant, whereas 40% felt their fuel bills had decreased (Table 4.34).

Table 4.34: Effect of HEES grant on fuel bills

	Number	Percent of all respondents
Much lower	142	9
A little lower	465	30
About the same	732	46
A little more	169	11
A lot more	71	5
Total	1579	100

#### **4.4.3. Perception of poverty**

In total 1,581 households estimated the weekly income required to keep a household, such as theirs, out of poverty. The overall average was £213. Table 4.35 shows a breakdown by household type.

Table 4.35: Weekly income required to keep a household out of poverty

Household type	£
1 Adult	180
1 Adult 1 Child	225
1 Adult 2+ Children	242
1 Pensioner	162
2 Adult 1 Child	256
2 Adult 2+ Children	324
2 Pensioners	214
Other	245

1,456 householders commented on their income in relation to the required level above. Twenty four percent of respondents felt their income was a little below the level required to keep a household out of poverty, 22% felt it was far below and 21% felt it was about the same as the level required (Table 4.36).

Table 4.36: Households income compared to income required to keep a household out of poverty

	Number	Percent
Far above	42	3
A little above	220	15
About the same	302	21
A little below	350	24
Far below	339	23
Don't know	203	14
Total	1,456	100

Half the households had not used less of any of the services (Table 4.37) because of concerns over the costs of the services (households were able to tick more than one service). The service which households most commonly used less of was the telephone.

Table 4.37: Using less than necessary

	Number	Percent of all respondents
None of these	1,069	64
Electricity	316	19
Gas	317	19
Telephone	354	21
Water	126	8

#### 4.4.4. Health

Issues on health were over analysed from individual questionnaires (2,012) rather than by household (see section 4.5). Sixty two percent of respondents had some problems walking about, whilst 38% had no problems (Table 4.38).

Table 4.38: Problems with mobility

	Number	Percent
No problems	718	38
Some problems	1,139	61
Confined to bed	12	1
Number of respondents	1,869	100
No response	143	
Total	2,012	

† percent of respondents

Sixty five percent of households had no problems with self-care, whilst 35% suffered some problems washing or dressing themselves (Table 4.39).

Table 4.39: Problems with self-care

	Number	Percent
No problems	1,151	65
Some problems	589	33
Unable to wash or dress	34	2
Number of respondents	1,774	100
No response	238	
Total	2,012	

† percent of respondents

Over half the respondents had some problems performing their usual activities, whilst 37% suffered no problems performing their usual tasks (Table 4.40).

Table 4.40: Problems performing usual activities

	Number	Percent
No problems	698	37
Some problems	910	49
Cannot perform usual activities	259	14
Number of respondents	1,867	100
No response	145	
Total	2,012	

† percent of respondents

Over half the respondents suffered moderate pain or discomfort, 22% suffered extreme pain or discomfort and 24% had no pain or discomfort (Table 4.41).

Table 4.41: Problems with pain or discomfort

	Number	Percent
No problems	459	24
Some problems	999	53
Extreme pain	414	22
Number of respondents	1,872	100
No response	140	
Total	2,012	

† percent of respondents

Half the respondents were not anxious or depressed, but 42% felt moderately anxious or depressed (Table 4.42).

Table 4.42: Problems with anxiety or depression

	Number	Percent
No problems	889	50
Some problems	748	42
Extremely anxious or depressed	135	8
Number of respondents	1,869	100
No response	143	
Total	2,012	

† percent of respondents

Forty six percent of respondents rated their health state less than or equal to 50, 16% rated it at above 80 (Table 4.43).

Table 4.43: Evaluation of health state (out of 100)

	Number	Percent
1 to 10	29	2
11 to 20	74	4
21 to 30	178	10
31 to 40	218	12
41 to 50	311	17
51 to 60	245	14
61 to 70	213	12
71 to 80	234	13
81 to 90	189	11
91 to 100	96	6
Number of respondents	1,787	100
No response	225	
Total	2,012	

† percent of respondents

Table 4.44 shows the average health score by fuel poverty overall and those on a disability allowance. There appears to be no relationship between fuel poverty and perception of health overall although there is some evidence that fuel-poor applicants

using disability allowance as the qualifier to HEES rated their state of health lower than the non fuel-poor in that benefit group.

Table 4.44 Average health scores

Category	Overall	On disability allowance
Not Fuel-poor	57	48
Fuel-poor	57	45

Almost 60% felt their health state in the past 12 months had been good or fairly good, but 41% felt it had not been good (Table 4.45).

Table 4.45: Health state in the past 12 months

	Number	Percent
Good	297	15
Fairly good	849	44
Poor	800	41
Number of respondents	1,946	100
No response	66	
Total	2,012	

† percent of respondents

Although only 28% of the respondents listed a disability benefit as a qualifying benefit for a HEES grant, 69% of respondents felt they suffered from a long-term illness, health problem or disability which limits the daily activities or the work they can do (Table 4.46).

Table 4.46: Do you have any long-term illness, health problem or disability

	Number	Percent
Yes	1,306	68
No	551	29
Don't know	70	4
Number of respondents	1,927	100
No response	85	
Total	2,012	

† percent of respondents

In 56% of cases, no one else in the home suffered from such a problem, whereas in 37% of cases another adult suffered from a long-term illness, health problem or disability (Table 4.47).

Table 4.47: Does anyone else in your household have any long-term illness, health problem or disability

	Number	Percent <sup>†</sup>
Yes, another adult	639	37
Yes, a child	83	5
Yes, both adult & child	15	1
No	961	56
Don't know	29	2
Number of respondents	1,727	100
No response	285	
Total	2,012	

<sup>†</sup> percent of respondents

#### **4.4.5. Perception of poverty and health – a summary**

Forty seven percent of households receiving a HEES grant felt their income was below a satisfactory standard and 36% claimed to have used less of at least one of the main utility services because they couldn't afford the bills. Conversely, over 50% of households receiving a HEES grant did not perceive themselves to be in any level of poverty.

Sixty eight percent of respondents said they were suffering a long term illness although only 50% of respondents rated their health state as less than 50, on a scale of 1 to 100.

Based on the perception of the HEES sample who returned the questionnaire, it appears that HEES has been more successful in targeting 'the sick' than the poor or fuel-poor.

## 5. The Future of HEES

### 5.1 Introduction

The Assembly see HEES as its primary vehicle for meeting its Fuel Poverty Strategy objectives. The first stated objective in the strategy is to eradicate fuel poverty amongst **vulnerable, low-income** households, as far as practically possible by 2010. Fuel poverty amongst **non-vulnerable households** is to be eradicated in **social housing** by 2012. Fuel poverty in **other households** is to be eradicated by 2018. The current gateway to a HEES grant, set up in the 1990's, is receipt of passport benefits, which are taken as a proxy for fuel poverty in vulnerable low-income households.

#### *5.1.1 HEES currently neither reaches nor targets the fuel-poor*

This study suggests that only around 30% of current HEES recipients are actually fuel-poor, and that few of these are in severe or extreme fuel poverty. Around 70% of HEES funds are likely therefore to be going to assist vulnerable low-income households who are NOT fuel-poor. This is not surprising as fuel poverty is due to a combination of low-incomes and high fuel bills. The HEES scheme is not currently targeting itself at the fuel-poor as no account of the energy efficiency of the property nor full account of household income is taken in the process of determining who is eligible for a grant. The scheme also lifts only around a half of those households who ARE fuel-poor out of fuel poverty.

#### *5.1.2 How does HEES in Wales compare to Warm Front in England?*

The problem of targeting the fuel-poor is not unique to HEES; between 40% and 70% of Warm Front recipients are not fuel-poor (NAO, 2003; Public Accounts Committee, 2004). Also 30% to 40% of households in vulnerable groups may be fuel-poor but ineligible for Warm Front. Examples of such households are those with incomes just above the threshold for benefit eligibility and those eligible for benefits but not claiming them.

The main difference between HEES and Warm Front is that a broader range of households is eligible for HEES Plus than for Warm Front Plus. However, both schemes suffer from the same generic problems, particularly how to improve their targeting to reach a greater proportion of fuel-poor households.

### 5.2 How can HEES reach more of the fuel-poor?

The following questions must be addressed if HEES is to more accurately target fuel poverty:

- How can HEES do a better job of lifting the current recipients out of fuel poverty?
- How can the percentage of current recipients who are not fuel-poor be reduced?
- How can assistance be provided to fuel-poor households that would be eligible for HEES if only they were registered for those benefits to which they are entitled?
- How can assistance be provided to the fuel-poor who live in vulnerable households that are not quite eligible for benefits but who are fuel-poor because they live in energy inefficient homes?
- How can assistance be provided to fuel-poor households who are not in the vulnerable low-income category?

- How can assistance be provided to those who already live in reasonably energy efficient homes yet still suffer from fuel poverty? Fuel poverty may occur because the occupants do not know how to use their heating, hot water systems and appliances efficiently or are not on the cheapest fuel tariffs or payment methods.

These questions are examined in table 5.1 below.

Table 5.1 How can HEES reach more of the fuel poor?

	<b>Household Characteristics</b>	<b>Possible Actions</b>	<b>Comment</b>
1	Eligible and still fuel-poor after HEES measures.	Increase the grant thresholds and list of available measures. Provide sufficient measures to lift them out of fuel poverty.	Energy measures alone will be insufficient in some cases, especially in Hard to Treat Homes. In some cases it would be easier to provide additional income. The degree of fuel poverty would need to be assessed and sufficient measures provided to raise the household out of fuel poverty. Simply exceeding a SAP target would be insufficient to ensure that they are lifted out of fuel poverty.
2	Eligible but not fuel-poor.	Setting targets for scheme managers based on the average SAP improvement as well as number of households reached.	This would focus attention on households with a low SAP before HEES measures and discourage “light bulb only” jobs. If income band data were gathered during the survey, the target could instead be based upon a measure of fuel poverty rather than the SAP.
		Set a SAP level above which households would not be eligible for a grant.	This would reduce the number of eligible households but a SAP survey would still be required on each household. Some fuel-poor households may become ineligible, as SAP is not a good indicator of fuel poverty. The SAP would need to be quality assured.
		Tighten eligibility criteria to exclude those on higher incomes.	Tightening the eligibility criteria would require some means testing. Alternatively, certain categories of eligibility could be dropped – eg, Working Families Tax Credit and Attendance Allowance

		Add a criterion based upon the estimated level of fuel poverty.	Assessing the level of fuel poverty would require a SAP survey AND an income assessment. Substantial measures would only be available to those shown to be in fuel poverty. The fuel poverty assessment would need to be quality assured.
3	Would be eligible if they claimed the benefits they were entitled to	Promote Benefits Health Checks and HEES application via community networks.	
4	Vulnerable but not quite eligible for benefits and fuel-poor because fuel costs are high.	Assess level of fuel poverty.	It is difficult to see how these households can be reached without a fuel poverty assessment. Need reaching in Social Housing by 2012 and other housing by 2018. Could, as a start, establish a discretionary budget for extreme cases.
5	Not in vulnerable categories but fuel-poor.	Assess level of fuel poverty.	It is difficult to see how these households can be reached without a fuel poverty assessment. Need reaching in Social Housing by 2012 and other housing by 2018. Could, as a start, establish a discretionary budget for extreme cases.
6	Fuel-poor in energy efficient homes.	Energy Advice; Advice on switching suppliers and payment methods for fuel; Income supplements.	These households could include those who have already had a HEES grant, as well as ones not currently deemed eligible. More extensive advice could be provided during the survey and after the measures have been installed

The table demonstrates how fuel poverty assessment may be used both for meeting (a) the short term aim of substantially reducing the number of current HEES recipients who are not fuel-poor and (b) the longer term aim of reaching the fuel-poor who are not classified as “non vulnerable low-income”. In many cases, the option of assessing the level of fuel poverty in a given household seems to be the only available option. An approach based upon SAP may provide a starting point but seems unlikely to make a significant difference.

In the next sections we look in more depth at these issues and at the possible actions that could be taken.

### **5.2.1 *Tightening up the way the HEES scheme operates*** **Targets, Monitoring and Reporting**

Targets for the scheme at present are expressed in terms of the number of households reached. Data on the average SAP improvement before and after work, and on the consequent increase in average SAP, are however reported annually. It would be relatively easy to set targets for the average SAP improvement and to monitor progress on, say, a quarterly basis. This would involve little, if any, extra work for the scheme managers but would focus attention on the extent of improvement being achieved. It is likely for example to reduce the number of “light bulb only” jobs and encourage the prioritisation of properties likely to have an initially low SAP.

It would also be worth exploring the option of collecting income band data from householders during the survey. This information could subsequently be combined with running cost estimates from the SAP data to give a rough measure of the degree of fuel poverty in the household. This data could then be reported on a quarterly basis to give feedback on success with reducing the numbers of fuel-poor households receiving the HEES grant and upon the degree to which they were brought out of fuel poverty. National Energy Services have been routinely collecting income band data from the majority of householders in the Eastern Region of the Warm Front scheme for the past 18 months with no significant problems.

The scheme managers should also switch to using SAP 2001 as distinct from SAP 98, as currently used, being aware that data from the two approaches are not comparable. This is because the methodology for calculating the SAP rating changed with SAP 2001 to make the SAP more independent of floor area. The effect is that the average SAP of a given stock of housing can change in moving from SAP 98 to SAP 2001 by anything from 0 to 10 SAP points, depending upon the characteristics of the stock.

There is also scope for more careful recording of data by surveyors in case future projects such as this one need to make use of the data. Specific information to focus on includes qualifying benefit, household type and dwelling floor area. The survey methodology being adopted for calculating the SAP would also be worth reviewing as this is currently based upon a non standardised reduced data SAP, and the level of training provided to surveyors should be clarified. The current procedures for SAP calculation are unlikely to be adequate for a procedure where the SAP is used as one of the qualifying criteria.

### **Having more impact on fuel poverty in the homes treated**

Almost a half of households in fuel poverty pre intervention (46%) were not taken out of fuel poverty by the HEES measures applied. If further measures were applied to the property, would this significantly impact the percentage of households still in fuel poverty post HEES? The data from this study suggests that energy measures alone would be insufficient and that, if fuel poverty is to be eradicated, a way needs to be found of supplementing household income, although the Assembly does not currently have the power to do this. If the SAP in all dwellings had been raised to 65, the proportion still in fuel poverty would have dropped from 46% to 26%. If the SAP

were raised to 70, the percent would drop to 24%. The percent drops to 15% at SAP 80 and to 3% at SAP 100.

### **Improving the targeting of those likely to be fuel-poor**

More use could perhaps be made of community networks, GPs, District Nurses and organisations such as Age Concern, to locate households with symptoms of fuel poverty. Once such households are identified, it would be useful to have a fast track system for treating these homes. Such an approach is, however, likely to lead to the identification of households who do not qualify for HEES. In such cases they could be referred to an agency offering Benefits Health checks with the possibility that they would then become eligible for HEES. In addition, as suggested later, a discretionary fund could be made available for such households.

### **Energy Advice**

More extensive advice could be provided during the survey and after the measures have been installed. Fuel poverty may occur because the occupants do not know how to use their heating, hot water systems and appliances efficiently or are not on the cheapest fuel tariffs or payment methods. Advice should only be given by energy advisors who belong to an organisation that has signed up to the Code of Practice for Energy Efficiency Advice, as this would raise confidence in the scheme among those who could help by referring clients.

#### **5.2.2 Eligibility for a HEES Grant**

The current eligibility criteria for HEES aim to reach only vulnerable low-income households. As we have seen in our sample, only around 30% of these households are fuel-poor. Could extra eligibility criteria be applied to reduce the numbers of non-fuel-poor households who are assisted? If so, this would lead to a drop in the number of households treated via HEES. Could the eligibility criteria also be broadened to start tackling the fuel-poor who do not fall into the vulnerable category?

### **Excluding those on higher incomes**

The data from this survey suggests that households for whom the HEES qualifying benefit is Working Families Tax Credit and Attendance Allowance are far less likely to be fuel-poor. Of these households only 18% were fuel-poor as compared to 40% or more for households who qualified due to Housing Benefit, Income Support or Council Tax and an overall average of 29%. The numbers of households qualifying through Working Families Tax Credit and Attendance Allowance is also substantial, at 21% of all recipient households. If these were deemed as insufficient grounds for a HEES grant, the numbers in fuel poverty reached would certainly therefore increase.

Another option is to set an income threshold for these categories. Given the results from this survey a possible income threshold would be £200 a week. Ninety two percent of the fuel-poor had an income less than £200 a week.

### Adding a ‘minimum SAP level’ criterion

There is a correlation between the SAP level of a property and the incidence of fuel poverty. This is to be expected as the fuel running costs of a property reduce as the SAP increases. One possibility is to set a SAP level above which the household will not be eligible for a grant. The table below shows the effect had this criterion been in operation during the period covered by this study. A SAP threshold of 65 has been suggested in discussions around the future of Warm Front. If this had been in operation for the households examined in this study, the percentage of fuel-poor reached by HEES would only have gone up from 29% to 30%. For this to make a significant difference a lower SAP threshold would be required. If a threshold of SAP 50 was set, the percentage fuel-poor would rise from 29% to 37% (from the table below, the total HEES population would be 24,124 minus 7,882 and the total fuel poor would be 7,103 minus 1,020). Such a change would require quality assured SAPs, which are not currently produced. The SAP is also only a crude indicator of fuel poverty. For example 14% of the properties with a SAP of 50 or more in the study contained households deemed to be fuel-poor. A better measure would be running costs as a percentage of income.

SAP Minimum	Eligible households removed		Removed households that would be fuel-poor	
	Number	Percent of applicants	Number	Percent of fuel- poor
50	7,882	33	1,020	14
55	4,505	19	451	6
60	2,286	10	182	3
65	742	3	23	0

It should be noted that the current methodologies used for calculating the SAP are based upon a non-standardised reduced data set SAP. If the SAP is to be built in as an eligibility criterion, then this would require robust procedures for the SAP calculation, based upon a standardised methodology and a quality assurance framework.

The SAP is also not a good indicator of fuel poverty because:

- It is independent of dwelling size, which is a key factor in determining fuel poverty.
- It says nothing about the characteristics of the occupant, eg, income level, occupancy details.

### Adding ‘running costs as a percentage of income’ criterion

A better approach would be to use the SAP survey data to estimate fuel running costs. Combining running costs with household income would produce ‘running costs as a percentage of income’, which is more consistent with the objectives of this study.

Income data could be

- Inferred from benefit levels
- Collected directly from the householder during the application process
- Collected from the householder during the SAP survey.

Non fuel-poor households could be identified and directed towards other sources of help, eg, Energy Efficiency Commitment.

Again standardised procedures and a quality assurance framework would be required, if this criterion was to be used for determining eligibility.

This option is explored further in subsequent sections.

### **Broadening the Eligibility Criteria**

An approach based upon retaining “benefits” as the gateway to a HEES grant does nothing to reach the fuel-poor that are not on benefit. Adding a further criterion would also increase administration costs because more of the households surveyed would not receive any measures and so other changes would be needed to bring other households into the scheme.

### **A discretionary HEES budget for the ineligible fuel-poor**

Where there is evidence that a household is experiencing fuel poverty but they are still not eligible even after a Benefits Health Check, might it be possible to have a discretionary HEES budget to draw from for providing HEES measures? Eligibility could be on the basis of a doctor’s prescription or other documentary evidence from a health professional. This approach, although useful, would probably not reach a significant number of the ineligible fuel-poor but it would make a start at reaching the non-vulnerable fuel-poor.

#### **5.2.3 Reaching the fuel-poor who are not on benefits**

To reach a significant number of these households, the eligibility criteria must be changed completely. The criteria should be based on an assessment of fuel poverty, i.e. running costs as a percentage of income, rather than on receipt of benefits. This would mean replacing the current passport benefit criteria. Although this would solve the problem of how to reach fuel-poor household who are not claiming benefits, this approach has other problems:

- It requires a SAP survey and income interview for all applicants to determine who is eligible. Many of these applicants would turn out to be ineligible, and as home visits are expensive, administration costs would increase relative to the amount spent on measures.
- It requires an estimate of household income, which is more difficult than determining whether someone receives a benefit.

#### **5.2.4 Established and verifying household income**

An estimate of household income is essential in assessing fuel poverty. No effective proxy indicators for fuel poverty have been identified, despite numerous attempts. The Warm Zones Review 2002 – 2003 concludes that ‘There is no easy to measure, reliable indicator of fuel poverty at individual household level. While there is potential for intelligence based targeting, there is no substitute for income assessment, to ensure that fuel poverty is assessed cost-effectively’. Fuel poverty is due to a combination of high fuel running costs and low-incomes and can only be identified by measuring both factors.

Income assessment is not as straightforward as estimating running costs. National Energy Services have been routinely collecting income band data from householders for the past 18 months and are planning to assess the level of fuel poverty routinely on future Warm Front surveys. Procedures would however need to be much more formalised if income levels were a factor in determining eligibility. Procedures do exist for estimating and verifying income as part of the benefits claiming process, administered by the Department for Work and Pensions (DWP). These procedures could be adapted for use in assessing income for those in fuel poverty. The definition of what constitutes household income would also need to be clearly defined. It is important that the procedures are not so complicated as to deter potential applicants. A robust process for complaints and appeal would also need to be developed.

### **5.3 How might the assessment process work in practice in a modified HEES scheme?**

An Assessor would visit the applicant and carry out a rapid energy efficiency survey, and enter the information into a software package such as the Powergen Pocket Affordable Warmth Software (PAWS) running on a PDA or laptop computer. The software estimates the fuel running costs for the property required to achieve a specific comfort level. It then calculates the income bands that relate to the categories of fuel poverty; Not Fuel-poor, Moderate, Severe and Extreme. The householder would be asked which of these income bands corresponds to their household income. If the software indicates that the household is likely to be fuel-poor, the Assessor would:

- Provide the householder with an application form in which to detail their income for verification purposes;
- Help the householder to fill in the form and gather supplementary evidence, such as bank statements;
- Carry out a more detailed survey to assess the level of fuel poverty more accurately, decide which measures are needed to remove the household from fuel poverty and gather the information required to install these measures;
- Carry out a benefit health check to see if the household income can be increased, as income maximisation may be easier or more cost effective than installing certain measures, especially in hard to treat homes.
- Provide energy advice and low energy lightbulbs.

If the household was clearly not fuel-poor, the Assessor would:

- Provide the householder with details of other relevant schemes (eg, Energy Efficiency Commitment) and possibly complete an application form or get approval for the work;
- Refer them to other agencies offering benefit health checks, if relevant;
- Provide energy advice and low energy light bulbs.

This procedure for assessing fuel poverty should not take longer than the current HEES survey. However, additional time may be required for:

- assisting the householder to complete the income verification form
- defining a package of energy efficiency and fiscal measures to remove the household from fuel poverty.

### **5.3.1 Can the number of costly home visits be reduced?**

Home visits to non fuel-poor households must be minimised to reduce administration costs. Currently HEES applicants are checked against eligibility criteria, i.e. passport benefits, to determine if they receive a home visit.

It may be possible to define a set of pre survey questions for applicants to answer, to determine whether a home visit is appropriate. Questions could include:

- Approximate age of property
- Built form (eg, end terraced, bungalow, flat )
- Number of rooms
- Main heating fuel and system
- Hot water fuel and type
- Income band.

The answers would indicate whether the household is likely to be fuel-poor. Applicants would be given the results and those unlikely to be fuel-poor could be discouraged from having a survey. A banding system could apply, so applicants with an average likelihood of being fuel-poor would only be surveyed if they requested a visit. Otherwise, the applicant could be:

- Sent free low energy lightbulbs
- Offered an energy advice pack and / or visit
- Referred to other government schemes that aim to improve energy efficiency rather than eradicate fuel poverty
- Given a Benefit Health Check by phone.

Despite this process, the percentage of home visits resulting in no measures is still likely to be significant and so the value generated from the home visits also needs to be increased.

### **5.3.2 Could the value arising from the home visits be increased?**

The scope and quality of the energy advice offered during the visit could be increased. Energy advice should ideally be provided both before and after installation, as in the Scottish Central Heating Programme. Advice after installation of measures is important because:

- Consistent repetition of key messages is required for advice to “stick”
- Advice is most important during the heating season, which can be some time after the measures were installed.

Indeed the whole emphasis of the scheme could be shifted from an eligible/ineligible orientation to a scheme that helps all applicants, but with varying degrees of help ranging from telephone advice to a full package of measures.

## **5.4 Conclusions**

HEES is currently targeted at vulnerable low-income households, with passport benefits being the only qualifying criteria. The immediate priorities are (a) to increase the number of fuel-poor households who are lifted out of fuel poverty by the HEES measures and (b) to reduce the number of non-fuel-poor households who receive HEES measures. The next priority is to find ways of reaching households who do not fall into the vulnerable household category. This will require broadening the eligibility criteria. The following is a summary of the actions that could be taken.

### ***Lifting vulnerable low-income households out of fuel poverty***

- This study suggests that there is no SAP level at which fuel poverty will be eradicated. To eradicate fuel poverty would require measures to supplement incomes as well as to increase SAP levels. A minimum SAP level of 65 would leave 25.4% of fuel-poor recipients in fuel poverty compared to 45.5% under the current scheme arrangements. The percentage would drop to 15.0% at SAP 80 but this is not a realistic target given that many properties are “hard to treat”.

### ***Reducing the number of non - fuel-poor households who receive HEES measures***

- Setting targets for scheme managers based on the average SAP improvement as well as number of households reached. Consider also collecting income band data from householders during the survey, to enable quarterly monitoring of fuel poverty data.
- Restricting measures to households where the SAP rating is below a specified level, as these households are more likely to suffer from fuel poverty. If the SAP level is set at 65, it is estimated that this would reduce the number of eligible recipients by only 3%. It may be more effective to set a target based upon running costs as a percent of income. Both options would require the establishment of quality approval procedures.
- Making more use of community networks, GPs, District Nurses and organisations such as Age Concern, to locate households with symptoms of fuel poverty, with a fast track system for treating these homes. This would bring more households suffering fuel poverty but many of these may not be eligible given the current eligibility criteria. Consider therefore the option of a discretionary HEES budget for urgent cases.
- Providing all applicants with enhanced advice covering switching suppliers, payment methods for fuel and optimum use of heating and hot water systems and appliances.

### ***Reaching households who do not fall into the vulnerable household category***

These households can only be reached if the eligibility criteria are broadened or radically changed.

Such changes could include:

- Shifting the emphasis of the scheme from an eligible/ineligible orientation to a scheme that helps all applicants but with varying degrees of help, ranging from telephone advice to a full package of measures.
- Extending the pre-survey vetting process to better target surveys at the fuel-poor, by gathering information on key indicators. During the vetting process, information on key indicators would be collected, such as:
  - Approximate age of property
  - Built form

- Number of rooms
  - Main heating fuel and system
  - Hot water fuel and type
  - Income band.
- Collecting income band data during the SAP survey, to assess the level of fuel poverty.
  - Providing fuel-poor households with energy efficiency and fiscal measures to take them out of fuel poverty and refer non fuel-poor households to other agencies.

## 5.5 Recommendations

### Scheme Managers:

- Be set targets based on the average SAP improvement as well as number of households reached.
- To collect income band data from householders during the survey, and report quarterly on the numbers of fuel-poor households reached and the extent to which they were removed from fuel poverty. The methodology for this will need to be agreed, including the definition of household income.
- Use SAP 2001 for SAP calculations at the earliest opportunity.
- Review their methodology for SAP surveys to establish if the procedures adopted are sufficiently robust to enable the SAP calculation to be used as an additional criterion for eligibility and for estimating total running costs; this to include looking at the reduced SAP data items collected, the heating standards assumed, methodology for dealing with under occupied dwellings, surveyor training and quality assurance framework.

### Further work be undertaken to:

- Assess the viability of extending the range of measures and budget available to apply in dwellings that are deemed eligible for HEES.
- Review promotional activities for HEES to see if more use can be made of community networks, GPs, District Nurses and organisations such as Age Concern, to locate households with symptoms of fuel poverty. Look into the possibility of a fast track system for treating these homes.
- Consider the option of a discretionary HEES budget for cases where there is clear evidence that a household is experiencing fuel poverty but which is not eligible for HEES under the current eligibility criteria. This would need to consider what form this evidence could take, eg, doctors prescription.
- Assess the viability of using fuel poverty assessment as an alternative to SAP assessment, in (a) setting targets for scheme managers (b) as an eligibility criterion instead of the SAP.
- Assess the viability of changing the eligibility criterion to be based solely on assessing the level of fuel poverty. This would involve (a) the development

and testing of a procedure to filter out non fuel-poor households via a telephone call or application form (b) work to determine how best to carry out the on-site fuel poverty assessment and income verification procedures (c) assessing what complaints and appeal procedures would be required (d) work to establish the impact of such an approach on administration costs.

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## Appendix 1 – Issues surrounding Fuel Poverty and Income

### Definition of Fuel Poverty

There is a long history of concern about fuel poverty in the UK and attempts at its scientific study using modern social science methodology date back to the mid-1970s (for example, Department of Energy, 1978). Fuel poverty is considered to be one of the causes of an estimated 40,000 excess winter deaths per year in Britain (see Wilkinson *et al*, 2001 for discussion).

A fuel-poor household is one that cannot afford to keep adequately warm at reasonable cost. For the purposes of the *UK Fuel Poverty Strategy*, which the government launched in November 2001, a fuel-poor household has been operationalised as one which needs to spend more than 10% of its income on all fuel use, to heat the home to a satisfactory standard and for lighting, cooking and running domestic appliances (DEFRA & DTI, 2001).

Income is defined as including Housing Benefit or Income Support for Mortgage Interest (ISMI) and fuel use is defined as total fuel uses for both heating and non-heating purposes. The definition of a ‘satisfactory standard of heating’ varies depending upon household type (DETR, 2000):

- For households in work or fulltime education it is considered to be 21°C in the living room and 18°C in the other occupied rooms for the whole house for 9 hours a day (morning & evening) – this is termed the *Standard* heating regime.
- For households likely to be at home all day it is considered to be 21°C in the living room and 18°C in the other occupied rooms for the whole house for 16 hours a day (all day) – this is termed the *Full* heating regime.
- For under-occupied households<sup>1</sup> it is considered to be 21°C in the living room and 18°C in the other occupied rooms for half of the house for 16 hours a day (all day) – this is termed the *Partial* heating regime.

Total running costs are calculated using BREDEM-12 (Building Research Establishment Domestic Energy Model) algorithms (Anderson *et al*, 1996). The SAP calculation uses BREDEM 9.

The 10% fuel poverty income threshold has a long history. The 1988 Family Expenditure Survey (FES) showed that households in the lower three income deciles spent, on average, 10% of their income (not including Housing Benefit or ISMI as part of income) on fuel for all household uses (DEFRA & DTI, 2001). It was assumed that this could be taken as representing the maximum amount that low-income households could reasonably be expected to spend on fuel.

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<sup>1</sup> Under-occupancy is defined in terms of the 1968 Parker Morris standard which set building regulations on the minimum floor area for a home depending on the number of occupants (DTI & DEFRA, 2002a,b).

### **Definition of Income**

Income is a key concept in almost all definitions of, and studies of, poverty - including all definitions of fuel poverty. The term income is sometimes used loosely to refer only to the main component of monetary income for most households - *ie* wages and salaries or business income. Others use the term more widely to include all receipts including lump sum receipts and receipts that draw on the household's capital. Much of the debate has centred on whether:

- income should include only receipts that are recurrent (that is, exclude large and unexpected, typically one-time, receipts);
- income should only include those components which contribute to current economic well-being, or extend also to those which contribute to future well-being;
- whether the measure of income should allow for the maintenance of the value of net worth. (Canberra Group, 2001)

### **Income definitions used in fuel poverty studies in Wales**

The extent and depth of fuel poverty is dependent on the definitions used of both income and heating regime. An agreed definition of fuel poverty is essential so that the extent of the problem can be estimated, and progress on tackling it can be monitored. The Welsh Assembly Government and the *Ministerial Group on Fuel Poverty* considered the definition of fuel poverty in Wales and England, taking account of the results of the public consultation carried out for new HEES/WF. As part of the consultation the following question was asked:

*In calculating the household income, should housing costs met by Housing Benefit (or ISMI), but not paid by the household directly, be excluded from income? Or would it be better to include housing costs met by Housing Benefit or ISMI as part of income when calculating whether a household is fuel-poor?*

The consultation responses on this issue were mixed with 40% abstaining; 34% feeling that housing costs met by housing benefit (or ISMI) should be included when calculating household incomes; 20% felt the opposite; and 6% suggesting that either approach was acceptable but that the percentage figure used to determine fuel poverty should reflect the latest figure from the Family Expenditure Survey.

It has now been agreed to use two definitions of fuel poverty in Wales and England (DEFRA & DTI, 2001):

#### **i) Definition to be focussed on for target setting**

A household is in fuel poverty if, in order to maintain a satisfactory heating regime, it would be required to spend more than 10% of its income (including Housing Benefit or Income Support for Mortgage Interest (ISMI)) on all household fuel use under standard occupancy conditions.

## ii) **Additional definition**

A household is in fuel poverty if, in order to maintain a satisfactory heating regime, it would be required to spend more than 10% of its income (not including Housing Benefit or Income Support for Mortgage Interest ISMI) on all household fuel use.

The UK governments 'official' analysis of low-income households is published annually in the Households Below Average Income (HBAI) statistics. These provide estimates of patterns of personal disposable income in Great Britain, and of changes in income over time in the United Kingdom. The HBAI statistics concentrate on the lower part of the income distribution, but provides comparisons with the upper part where appropriate. Income in HBAI refers to disposable household income: that is income (from earnings, self employment, benefits, occupational pensions, investments and other flows) after the deduction of income tax, National Insurance contributions, local government taxes and certain other deductions. Each person's income is aggregated across the household and adjusted to reflect the composition of the household. This process is known as equivalisation and reflects the relative needs of households of varying size and composition (Frosztega, 2000). HBAI presents income analyses on two bases: Before Housing Costs (BHC) and After Housing Costs (AHC).

***Income Before Housing Costs*** (BHC) includes the following main components:

- usual net earnings from employment;
- profit or loss from self-employment (losses are treated as a negative income);
- all Social Security benefits (including Housing Benefit, Social Fund, maternity, funeral and community care grants but excluding Social Fund loans) and Tax Credits;
- income from occupational and private pensions;
- investment income;
- maintenance payments, if a person receives them directly;
- income from educational grants and scholarships (including, for students, top up loans and parental contributions);
- the cash value of certain forms of income in kind (free school meals, free welfare milk, free school milk and free TV licence for those 75 and over).

**Income is net of the following items:**

- income tax payments;
- National Insurance contributions;
- domestic rates / council tax;
- contributions to occupational pension schemes (including all additional voluntary contributions (AVCs) to occupational pension schemes, and any contributions to personal pensions);
- all maintenance and child support payments, which are deducted from the income of the person making the payment;
- parental contributions to students living away from home.

***Income After Housing Costs*** (AHC) is derived by deducting a measure of *housing costs* from the above income measure (DWP, 2003).

***Housing costs*** include the following:

- rent (gross of housing benefit);
- water rates, community water charges and council water charges;
- mortgage interest payments (net of tax relief);
- structural insurance premiums (for owner occupiers);
- ground rent and service charges.

The fuel poverty ‘Target Setting’ measure, used in both England and Wales, approximates to the Before Housing Costs definition used in the Households Below Average Income (HBAI) statistics. The Additional Definition used (i.e. the after housing costs definition) is however quite different from the After Housing Costs definition of income used in HBAI. The HBAI definition is net of ALL housing costs, whereas the fuel poverty definition excludes only those housing costs met by Housing Benefit or ISMI. This approach is not consistent with the income measures used by either the Office for National Statistics (ONS) or the Department for Work and Pensions (DWP) for wider analysis of low-income.

The essential differences between the HBAI approach and that adopted in the English definition of income is that:

1. The elements making up income in HBAI are clearly defined and documented and there are tried and tested procedures for collecting this information via questionnaires
2. HBAI is based upon Household Income rather than upon the income of the Head of Household and their Partner (partner is a term not clearly defined)
3. Income is net of the following items as well as of Income Tax and National Insurance:
  - Council Tax
  - Contributions to pension schemes
  - Maintenance & child support payments
  - Parental contribution to students living away from home

The HBAI approach also allows the estimation of income after housing costs, defined as:

- Rent (gross of Housing Benefit)
- Mortgage Interest Payments (net of tax relief)
- Water costs
- Structural Insurance Premiums (for owner occupiers)

The second of these definitions is the one used in the official UK and EU definition of poverty ie, households below 60% of median income after housing costs.

## **Measuring Household Income**

Obtaining accurate and complete information on income from households has long been considered to be one of the most intractable problems facing British social survey researchers. Survey researchers often claim that:

*"people are more willing to talk about their sexual behaviour than about their financial affairs and even if they are willing to talk they may not have the necessary knowledge to answer the questions"* (Martin, 1990)

This perception may in part be a historical truth resulting from class based differences within British society to discussing financial affairs. In the past, financial matters were only considered to be a 'proper' topic of conversation between a suitor and his prospective father-in law in 'upper' and 'upper middle' class families. However, 'working' class households were often more forthcoming and indeed the Welfare State required disclosure of financial matters in order to claim means-tested benefits.

A summary of research shows that banded income questions achieve a much higher response rate for all types of households than detailed income questions (references). Banding has also been shown to be successful in providing measures of individual and household income that compared well with measures based on longer and more detailed questions.

### **Income measures calculated from the HEES survey**

Two different income estimates were calculated from the responses to the HEES survey to try to overcome some of the problems discussed previously;

1) **Full Income** – total net household weekly income from all sources after deducting Income Tax, National Insurance and any contribution towards a pension. This definition approximates the 'target setting' definition of income discussed above.

2) **Basic Income** - total net household weekly income from all sources after deducting Income Tax, National Insurance, any contribution towards a pension and housing benefit. This definition approximates the 'additional' definition of income discussed above.

It is also possible to take account of extra expenditure associated with disabilities and single parent families, as below, although these definitions have not been considered in this report.

3) **Equivalised Residual Income (HBAI AHC Income)**- total net household weekly income from all sources after deducting Income Tax, National Insurance, any contribution towards a pension and housing costs. Income is then equivalised by household size and type using the modified OECD scale. This definition approximates the Households Below Average Income After Housing Costs definition of income used by the Department of Work and Pensions.

4) **PSE Equivalised Residual Income (PSE Income)** - total net household weekly income from all sources after deducting Income Tax, National Insurance, any contribution towards a pension and all housing costs. Income is then equivalised by household size and composition and disability status using the modified Poverty and

Social Exclusion Survey of Britain (PSE) scale. The PSE scale is based on Budget Standards research into the comparable costs for different types of households, undertaken by research teams at the Universities of London, Loughborough and York. It includes income adjustments to allow for the additional costs of lone parent families and the additional costs associated with disability (see Gordon *et al* 2003 for discussion).

## Summary and Conclusions

The English definition of Fuel Poverty deals with heating patterns in a complex way, with the hours of heating varying according to whether or not the person is likely to be at home all day or not. It also varies the proportion of the house that gets heated if the dwelling is under occupied. It was decided to carry out the base calculations of the numbers in fuel poverty in a variety of ways in order to assess the degree to which the assumptions made affect the resulting numbers estimated to be in fuel poverty. Three approaches were used are as follows:

- All occupants were assumed to require heating for 16 hours per day – the Extended Heating Regime
- All occupants were assumed to require heating for 9 hours per day – the Standard Heating Regime
- The heating pattern was varied with the category of occupant in a similar way to that done for producing the English and Welsh fuel poverty statistics. Households with someone at home all day were assumed to have the Extended Heating pattern, those at work to have the Standard Heating pattern and those classified as “under – occupying” were taken to have a Partial Heating Regime - the Mixed Heating Regime

The definition of the term “income” in the UK Fuel Poverty Strategy is vague, is not thoroughly documented and was therefore difficult to duplicate. The approach to income estimation adopted in this study builds from the approach used by government for poverty estimation (as distinct from fuel poverty estimation) and used for HBAI statistics. The following factors were omitted from the HBAI approach to give a similar basis to the English approach – council tax, pension contributions, maintenance payments and parental contributions to students living away from home. The resulting fuel poverty estimates produced are therefore based upon:

- Approximation to English Definition of Income including Housing Costs (termed Full Income)
- Approximation to English Definition of Income excluding Housing Benefit & ISMI (termed Basic Income)

## Appendix 2 – The questionnaire

### Home Energy Efficiency Scheme

This survey is for people who have received a grant during the past few years to improve the heating and insulation of their homes. This information is needed to help stop people in Wales suffering from cold and damp housing.

A Freepost envelope is enclosed so that you can return your completed form to the independent survey team. This survey is completely voluntary. Please complete as much of the form as you can and please think carefully about your answers. If you have any questions about the form or would like any further information, please phone 01908 442250.

*If you reply by 21st July 2004 you will be entered into a prize draw! See cover letter for more details.*

<p>If any details of address are wrong, please amend the details above</p> <p>Name <input type="text"/></p> <p>Tel No <input type="text"/></p>	<p>Our records show that you received a Home Energy Efficiency Scheme grant in the last few years. Is this correct?</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p>
	<p><b>Section 1: Household Accommodation</b></p>
	<p><b>1</b> How many people live in your household? <b>Include</b> yourself and babies <input type="text"/> <input type="text"/></p>
	<p><b>2</b> How many are adults aged 18 or over? <input type="text"/> <input type="text"/></p>
	<p><b>3</b> How many are children younger than 18? <input type="text"/> <input type="text"/></p>
	<p><b>4</b> Has the number of people living in your household changed since you got the grant?</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p>

Page 1

## Home Energy Efficiency Scheme

**5** How many bedrooms are there in your house?

**6** How satisfied are you with your home?

Very satisfied

Fairly satisfied

Neither satisfied nor dissatisfied

Slightly dissatisfied

Very dissatisfied

**7** Would you describe the state of repair of your home as...

Good

Adequate

Poor

Don't know

**8** Do you have any of the following problems with your home? (Please tick all that apply)

Shortage of space

Too dark/not enough light

Lack of adequate heating facilities

Problems with draughts

Leaky roof, gutters or windows

Damp walls, floors or foundations

Rot in window frames or floors

Mould

No place to sit outside, e.g. terrace or garden

Other

None of these problems

(Please see page 8 for complaints procedure)

**9** Has your health or the health of anyone in your household been made worse by your housing situation?

Yes  No

**10** What is your household's MONTHLY payment towards any mortgage or loan?

None

Less than £50

£50 - £99

£100 - £149

£150 - £199

£200 - £249

£250 - £299

£300 - £399

£400 - £499

£500 - £749

£750 - £999

£1000 - £1249

£1250 - £1499

£1500 or more

**11** What is your household's total WEEKLY rent? **Include** any Housing Benefit or Rent Rebate you receive. **Exclude** any payments to pay off arrears.

None

Less than £50

£50 - £74

£75 - £99

£100 - £149

£150 - £199

£200 - £299

£300 or more

**12** Do you receive any Housing Benefit or Rent Rebate?

Yes. Please state how much you receive each week £

No

## Home Energy Efficiency Scheme

### Section 2: Heating and Heating Cost Problems

**1a** In winter, are you able to keep your home warm enough?  
 Yes (Go straight to question 2)  No

**1b** Which parts of your home are not warm enough?  
(Please tick all that apply)

- Children's bedrooms
- Adults' bedrooms
- Living rooms
- Kitchens
- Bathrooms, toilets, shower rooms
- Halls, landings
- Other rooms
- All rooms

**1c** Why is it difficult to keep this room/these rooms warm?  
(Please tick all that apply)

- Heating is inefficient/broken
- Not enough radiators
- Poor insulation/draughts
- Too expensive
- Some other reason

**2** Does your home have central heating? (Include storage heaters)

- Yes
- Yes but it doesn't work
- No. I/We would like it but cannot afford it at the moment
- No. I/We do not need/want it at the moment

**3** Would you say that since getting the HEES grant your home is...

- Much warmer
- A little warmer
- About the same
- Colder

**4** Would you say that since getting the HEES grant your fuel bills are...

- Much lower
- A little lower
- About the same
- A little more
- Much more

**5** In the past five years, have you been disconnected from electricity, gas, water, or telephone services because you couldn't afford it?  
(Please tick all that apply)

- None of these
- Electricity
- Gas
- Telephone
- Water

**6** In the past five years, have you used less electricity, gas, water, or telephone services than you needed because you couldn't afford it?  
(Please tick all that apply)

- None of these
- Electricity
- Gas
- Telephone
- Water

**The next two questions ask about the cost of living in Wales today.**

**7** How many pounds a week, after tax, do you think are necessary to keep a household, such as the one you live in, out of poverty?

£

## Home Energy Efficiency Scheme

**8** How far above or below that level would you say your household is?

Far above that level of income  
 A little above that level of income  
 About the same  
 A little below that level of income  
 Far below that level of income  
 Don't know

### Section 3: About Yourself

**1** Gender. Please indicate whether you are

Male     Female

**2** What is your date of birth?

/   /

**3** What is your marital status?

Married  
 Living as married  
 Widowed  
 Divorced  
 Separated  
 Single  
 Living with same sex partner

**4** Which of the following statements best describes your working status?

Working full-time  
 Working part-time  
 Waiting to take up job  
 Seeking work  
 Unable to work due to long-term illness/disability  
 Retired from paid work  
 Looking after the home/family  
 Student/in training  
 Other. Please state

### Section 4: About Your Income

**1** Benefit Question: How many people in your home currently receive... (Please tick all that apply)

Do not wish to answer

	None	1	2	3 or more	
Family Credit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Income Support	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Job Seekers Allowance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Housing Benefit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Council Tax Benefit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Widow's Benefit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tax Credits	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sick Pay/Benefit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Incapacity Benefit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Attendance Allowance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Disability Living Allowance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other Disability Benefit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A State Retirement Pension	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Occupational/Private Pension	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**2 Sources of Income Question:**  
Which of the following sources of income do a) you and b) your household receive

(Please tick all that apply)

	You	Others In Your Household
Earnings from employment or self-employment	<input type="checkbox"/>	<input type="checkbox"/>
Child Benefit	<input type="checkbox"/>	<input type="checkbox"/>
Maintenance/Child Support	<input type="checkbox"/>	<input type="checkbox"/>
Interest from savings/dividends	<input type="checkbox"/>	<input type="checkbox"/>
Student loan/grant	<input type="checkbox"/>	<input type="checkbox"/>
Social Fund Loan	<input type="checkbox"/>	<input type="checkbox"/>
Other type of regular allowance from outside the household	<input type="checkbox"/>	<input type="checkbox"/>
A state benefit listed in the previous question	<input type="checkbox"/>	<input type="checkbox"/>
A pension listed in the previous question	<input type="checkbox"/>	<input type="checkbox"/>
Other benefits/pensions	<input type="checkbox"/>	<input type="checkbox"/>
Other sources of income, e.g. rent	<input type="checkbox"/>	<input type="checkbox"/>

**3 Individual Income Question:** Which band represents your **WEEKLY** own total income from all these sources after taking off Income Tax, National Insurance and any contribution towards a pension?

ENTER BAND NUMBER FOR YOUR OWN INCOME

BAND	WEEKLY INCOME
1	Less than £10
2	£10 less than £20
3	£20 less than £30
4	£30 less than £40
5	£40 less than £50
6	£50 less than £60
7	£60 less than £70
8	£70 less than £80
9	£80 less than £90
10	£90 less than £100
11	£100 less than £120
12	£120 less than £140
13	£140 less than £160
14	£160 less than £180
15	£180 less than £200
16	£200 less than £220
17	£220 less than £240
18	£240 less than £260
19	£260 less than £280
20	£280 less than £300
21	£300 less than £320
22	£320 less than £340
23	£340 less than £360
24	£360 less than £380
25	£380 less than £400
26	£400 less than £450
27	£450 or more

**4 Household Income Question:** Which band represents the total income of you and your spouse/partner taken together and any people in the household who have an income, after any deductions?  
(This is the total income of your household)

ENTER BAND NUMBER FOR YOUR HOUSEHOLD'S INCOME

## Home Energy Efficiency Scheme

**5a** Since you received the HEES grant, has the amount **you** receive in income, benefits or pensions...

- Increased
- Decreased
- Stayed the same

(Go straight to question 6a)

**6a** Since you received the HEES grant, has the amount **your household** receives in income, benefits or pensions...

- Increased
- Decreased
- Stayed the same

(Go straight to section 5)

**5b** If **your** income has increased or decreased, by how much has it changed?

- Less than £10
- £10 less than £20
- £20 less than £30
- £30 less than £40
- £40 less than £50
- £50 less than £60
- £60 less than £70
- £70 less than £80
- £80 less than £90
- £90 less than £100
- £100 less than £120
- £120 less than £140
- £140 less than £160
- £160 less than £180
- £180 less than £200
- £200 less than £220
- £220 less than £240
- £240 less than £260
- £260 less than £280
- £280 less than £300
- £300 less than £320
- £320 less than £340
- £340 less than £360
- £360 less than £380
- £380 less than £400
- £400 less than £450
- £450 or more

**6b** If **your household's** income has increased or decreased, by how much has it changed?

- Less than £10
- £10 less than £20
- £20 less than £30
- £30 less than £40
- £40 less than £50
- £50 less than £60
- £60 less than £70
- £70 less than £80
- £80 less than £90
- £90 less than £100
- £100 less than £120
- £120 less than £140
- £140 less than £160
- £160 less than £180
- £180 less than £200
- £200 less than £220
- £220 less than £240
- £240 less than £260
- £260 less than £280
- £280 less than £300
- £300 less than £320
- £320 less than £340
- £340 less than £360
- £360 less than £380
- £380 less than £400
- £400 less than £450
- £450 or more

# Home Energy Efficiency Scheme

## Section 5: About Your Own Health State Today

**1** Which of the following statements best describes your own health state today?  
(Please tick one statement in each group)

**1) Mobility**

- I have no problems in walking about
- I have some problems in walking about
- I am confined to bed

**2) Self-care**

- I have no problems with self-care
- I have some problems washing or dressing myself
- I am unable to wash or dress myself

**3) Usual Activities** (e.g. work, study, housework, family or leisure activities)

- I have no problems performing my usual activities
- I have some problems performing my usual activities
- I am unable to perform my usual activities

**4) Pain/Discomfort**

- I have no pain/discomfort
- I have moderate pain/discomfort
- I have extreme pain/discomfort

**5) Anxiety/Depression**

- I am not anxious or depressed
- I am moderately anxious or depressed
- I am extremely anxious or depressed

**2** Please evaluate the state of your health

To help people say how good or bad a health state is, we have drawn a scale (rather like a thermometer) on which the best state you can imagine is marked 100 and the worst state you can imagine is marked 0.



We would like you to indicate on this scale how good or bad your own health is today, in your opinion. Please do this by drawing a line from the box below to whichever point on the scale indicates how good or bad your health state is.

**3** Would you say that in the past 12 months your health has been...

- Good    Fairly Good    Not Good

**4** Do you have any long-term illness, health problem or disability which limits your daily activities or the work you can do?

**Include** problems which are due to old age

- Yes    No    Don't know

**5** Does anyone else in your home have any long-term illness, health problem or disability which limits their daily activities or the work they can do?

**Include** problems which are due to old age

- Yes, another adult    Yes, a child  
 No    Don't know

## Home Energy Efficiency Scheme

All households who received a central heating system through the Home Energy Efficiency Scheme between April 2003 and March 2004 should also either have had, or will shortly receive a customer satisfaction questionnaire. We would encourage you to use these opportunities to return feedback to the Welsh Assembly Government.

We are interested in anything else you would like to tell us about how the grant worked for you, however unimportant you think it is.

A large, empty rectangular box with a thin black border, intended for providing feedback. It is centered on the page below the introductory text.

## Appendix 3 – Cover Letter



**National Energy  
Services**



Llywodraeth Cynulliad Cymru  
Welsh Assembly Government

Dear,

### **YOUR OPINION COUNTS**

The Welsh Assembly Government is currently evaluating the problems some people have heating their homes, and the effectiveness of the heating and insulation measures offered as part of the Home Energy Efficiency Scheme. As someone who previously received a grant under the Home Energy Efficiency Scheme, you have been selected to take part in this survey. We would greatly value the views of all adults in your household on this subject. Therefore I have enclosed a questionnaire that should be completed by **each adult** in your household. The results of this survey will be used to improve the Home Energy Efficiency Scheme, so that it can be more effective in helping people heat their homes.

The Assembly Government has employed an independent research company to carry out the survey. The enclosed fair data protection statement explains how this data will be used.

Please fill in the form. This is your opportunity to shape the future and help us prevent people in Wales suffering from cold and damp homes. All you have to do is to fill in the form that comes with this letter and send it off in the FREEPOST envelope provided. If your reply is received before July 21, you will be entered into a prize draw and you will have the chance of winning one of 20, £30 supermarket vouchers.

Please do not hesitate to contact me if you have any further questions about the survey.

Thank you for your help; it really can make a difference.

Yours sincerely,

**Dawn Homer**

The prize draw will take place on 7<sup>th</sup> July 2004. All winners will be notified, by post, during July 2004. If you would like a list of winners names please contact Dawn Homer, National Energy Services, MK5 8NA

## **Appendix 4 – Fair processing notice**

### **Fair Processing Notice: What the National Assembly for Wales does with Information it holds on Households Participating in Home Energy Efficiency Scheme Follow up Survey**

#### ***Subject***

The National Assembly for Wales is currently evaluating the problems some people have heating their homes, and the effectiveness of the heating and insulation measures offered as part of the Home Energy Efficiency Scheme. The Assembly Government has employed an independent research company, National Energy Services to carry out the survey.

This leaflet tells you about the National Assembly for Wales processing of households' personal data.

#### ***What is personal data?***

Personal data means data from which a living individual can be identified, or from those data and other information which is in, or likely to come into, the possession of the National Assembly for Wales.

#### ***Purpose for processing personal data***

The Home Energy Efficiency Scheme exercises the powers delegated to the National Assembly for Wales under the Social Security Act 1990 to make grants towards the cost of carrying out work for the purpose of improving the thermal insulation of dwellings and reducing or preventing wastage of energy. The Warm Homes and Energy Conservation Act 2000 requires the National Assembly for Wales to set out a strategy to eradicate fuel poverty as far as reasonably practical in Wales.

#### ***The use made of this personal information***

In order to assist in carrying out its statutory duties and regulating standards, the National Assembly for Wales uses the household information to:

- provide information to Welsh Assembly Government Ministers, which will inform decisions relating to policy changes and funding;
- update Welsh Assembly Government Ministers on households helped and measures installed under the Home Energy Efficiency Scheme;
- improve the scheme to better meet the needs of the grant recipients, and contribute to eradicating fuel poverty;
- produce Welsh Assembly Government statistics on household income and house condition in Wales to assess the impact of the scheme on fuel poverty;
- monitor the contract performances of the managing agents and installers under the scheme.

## ***Organisations who may share personal information***

Information held by the National Assembly for Wales on households, may be shared with other organisations when the law allows, for example with;

- bodies doing research for the National Assembly for Wales;
- bodies doing research for scientific and academic purposes;
- central and local government for the planning and provision of services;
- social services and other health and welfare organisations, where there is a need to share information to protect and support members of households;
- various regulatory bodies, such as ombudsmen and inspection authorities, where the law requires that information be passed on so that they can do their work.

## ***Data recorded***

The sort of data held by the National Assembly for Wales includes;

- Personal details such as name, address and age, details of benefits received, marital and working status of members of households receiving the grant.
- Details of the property, including number of occupants, number of bedrooms, and state of repair of the property.
- Payments towards mortgage, or rent on the property.
- Household income, before and after receipt of grant.
- Adequacy of heating systems in the property, and comfort ex comfort experienced by householders before and after receipt of grant.
- Any difficulties households have experienced in paying utility bills.
- State of health of householders.

Whilst the processing of personal data, for the above purposes, is necessarily detailed and inherently intrusive, the National Assembly for Wales will endeavour to ensure that information is accurate and secure and treated in accordance with the Data Protection Act. Within the National Assembly, your details will only be used by those whom it is necessary for the purposes of the processing as described above, other than when the law allows, and to those organisations identified above.

## ***Other information***

Personal data held on students will not be sent outside the United Kingdom.

## ***Your rights under the Data Protection Act 1998***

The Data Protection Act 1998 gives individuals certain rights in respect of personal information held on them by any organisation. These rights include:

- the right to ask for and receive copies of the personal data held on **you**, although some information can sometimes be legitimately withheld;
- the right, in some circumstances, to prevent the processing of personal information if doing so will cause damage or distress;

- the right to ask for wrong information to be put right;

You also have the right to ask the Information Commissioner, who enforces and oversees the Data Protection Act 1998, to assess whether or not the processing of personal information is likely to comply with the provisions of the Act.

### ***Seeking further information***

For further information about the personal data collected and its use, or if you have concerns about the accuracy of the personal data, or wish to exercise your rights under the Data Protection Act 1998, you should contact;

- National Energy Services.
- The National Assembly's Data Protection officer at, The National Assembly for Wales, Cathays Park, Cardiff, CF10 3NQ;
- The Information Commissioner's office help line can be contacted on 01625 545 745;
- *information is also available from [www.informationcommissioner.gov.uk](http://www.informationcommissioner.gov.uk)*

## Appendix 5: Validation of the Measurement of Income in the HEES Survey

### *The Theory of Measurement*

It is important to this research to establish that the income variables are ‘good’ measures of the inability to ‘afford to keep adequately warm at reasonable cost’. In order to establish this it is necessary to understand measurement theory. Classical test theory dates back to the pioneering work of Spearman (1904) and others at the turn of the century and much of the modern theoretical work has been developed by educationalist and psychologists since the Second World War. Classical test theory distinguishes between the observed score (measurement) on any test and the ‘true’ score. Since all attempts to measure anything will inevitably result in some random errors creeping in to the measurement, the observed score is comprised of two components - the true score and random error:

$$O = T + RE$$

where:

O = Observed score

T = True score

RE = Random error

The true score (in this case the true level of income and fuel poverty) is of course a hypothetical quantity. It can never be measured directly, only estimated from the observed score and a knowledge of the size of the random measurement errors. If the size of the random errors is large relative to the observed score, then the measurement is unreliable by definition. Conversely, if the random errors are small, the measurement is reliable. The concept of reliability in this sense is equivalent to the concept of precision used in the natural sciences.

There are a large number of sources of random error that have been catalogued in the literature in relation to social surveys, such as Censuses and deprivation studies. These range through mis-codings, ambiguous instructions, different emphasis on different words during an interview, interview fatigue, etc. This means that “*the amount of chance error may be large or small, but it is universally present to some extent. Two sets of measurements of the same features of the same individual will never exactly duplicate each other*” (Stanley, 1971)

Thus, all measurements are, to some extent, unreliable. What is important is the degree of unreliability.

However, random errors are not the only type of errors present during measurement (of deprivation or anything else). In addition, there are always systematic errors or biases present. There are many sources of bias recorded in the literature which include, for example, people giving incorrect information because they are embarrassed by their standard of living or income, response-set (where a person repeatedly answers ‘yes’ or ‘no’ to a series of questions because they have lost concentration), or the tendency for the elderly to over-estimate their level of good health, etc.

Thus, Spector (1994) has argued that classical test theory can be extended so that the observed scores can be considered to be comprised of the true scores plus random and systematic errors:

$$O = T + RE + SE$$

where:

O = Observed score

T = True score

RE = Random error

SE = Systematic error

A valid measurement is one where the size of the systematic error is small. The concept of validity is analogous to the concept of accuracy used in the natural sciences. However, this mathematical formulation of validity to some extent begs the question. A measurement cannot be generally valid - it must be valid for something, for example, a driving test may be a valid test of the driver's ability to control the car but it is probably not a valid test of the driver's ability to tap dance or get a degree in mathematics. Validity can only be assessed in relation to a theoretical framework.

There are several types of validity measures.

#### *Face Validity*

The method used to measure income in the HEES survey has a reasonable degree of face validity. Anastasi (1988) describes the concept of face validity as follows:

*"Content validity should not be confused with face validity. The latter is not validity in the technical sense; it refers, not to what the test actually measures, but to what it appears superficially to measure. Face validity pertains to whether the test "looks valid" to the examinees who take it, the administrative personnel who decide on its use, and other technically untrained observers (p.144)."*

Therefore, face validity is concerned with how a measure or procedure appears. Unlike content validity, face validity does not depend on established theories for support (Fink, 1995). The Office for National Statistics carried out a number of cognitive interview studies to explore respondents understanding and reaction to banded income questions, similar to those used in the HEES survey (Sykes and Manners, 1998; Sykes, 1998). This research showed that in general respondents understood the question and the concept of net individual and household income ie, the questions had face validity.

#### *Construct Validity*

There are many types of validation procedures, however the most commonly applicable to the social sciences is construct validation. Construct validation is based on assessing how well a *"particular measure relates to other measures consistent with theoretically derived hypotheses concerning the concepts (or constructs) that are being measured."* (Carmines and Zeller, 1994).

Low income has been shown to be causally related to 'poor health' and a range of other social ills, such as 'objective' and 'subjective' poverty. The analyses in this report demonstrate the construct validity of the income measure.

**Appendix 6: Results From survey weighted by the number of households in the total HEES population**

**Table A6.1 Pre intervention: Different income and heating definitions**

		Not fuel-poor	Moderate fuel poverty	Severe fuel poverty	Extreme fuel poverty	Total
Full income/mixed heating	%	70.6	25.8	2.4	1.2	100.0
	No.	17,022	6,228	583	291	24,124
	±	551	529	186	132	
Basic income/mixed heating	%	65.8	27.8	3.8	2.5	100.0
	No.	15,883	6,703	923	599	24,124
	+	574	542	232	188	
Extended heating/full income	%	62.4	30.8	4.9	1.9	100.0
	No.	15,053	7,430	1,182	458	24,124
	±	522	560	266	162	
Standard Heating/full income	%	65.6	29.7	3.6	1.1	100.0
	No.	15,825	7,165	868	265	24,124
	+	590	562	235	130	
Mixed Heating/full income	%	70.6	25.8	2.4	1.2	100.0
	No.	17,022	6,228	583	291	24,124
	±	551	529	186	132	

% - percent of total HEES recipients - 24,124

± - 95% Confidence limit

**Table A6.2 Post intervention: Different income and heating definitions**

		Not fuel-poor	Moderate fuel poverty	Severe fuel poverty	Extreme fuel poverty	Total
Full income/mixed heating	%	86.6	12.0	0.5	0.8	100.0
	No.	20,892	2,908	130	194	24,124
	+	411	393	88	108	
Basic income/mixed heating	%	81.0	16.2	1.2	1.6	100.0
	No.	19,542	3,918	291	389	24,124
	+	474	446	132	152	
Extended heating/full income	%	81.9	15.5	1.6	1.0	100.0
	No.	19,757	3,379	385	241	24,124
	±	460	431	155	118	
Standard Heating/full income	%	84.6	14.0	1.0	0.4	100.0
	No.	20,409	3,377	241	96	24,124
	±	412	452	118	70	
Mixed Heating/full income	%	86.6	12.0	0.5	0.8	100.0
	No.	20,902	2,908	130	194	24,124
	+	411	393	98	108	

% - percent of total HEES recipients - 24,124

± - 95% Confidence limit

**Table A6.3 Post intervention: Fuel price increases**

		Not fuel-poor	Moderate fuel poverty	Severe fuel poverty	Extreme fuel poverty	Total
5%	%	84.7	13.6	0.8	0.8	100.0
	No.	20,433	3,287	194	194	24,124
	±	435	415	108	108	
10%	%	82.3	16.0	0.9	0.8	100.0
	No.	19,850	3,853	210	194	24,124
	±	462	443	112	108	
20%	%	76.7	21.3	1.1	0.9	100.0
	No.	18,506	5,149	259	210	24,124
	±	511	496	125	112	
30%	%	70.7	26.6	1.6	1.1	100.0
	No.	17,065	6,411	389	259	24,124
	±	550	534	152	125	

% - percent of total HEES recipients - 24,124

± - 95% Confidence limit

**Table A6.4 Post intervention: Target SAPs**

		Not fuel-poor	Fuel-Poor	Total
SAP 50	%	89.8	10.2	100.0
	No.	21,663	2,461	24,124
	+	421	421	
SAP 55	%	90.7	9.3	100.0
	No.	21,880	2,244	24,124
	+	416	416	
SAP 60	%	91.4	8.6	100.0
	No.	22,049	2,075	24,124
	±	404	404	
SAP 65	%	92.5	7.5	100.0
	No.	22,314	1,810	24,124
	±	387	387	
SAP 70	%	93.0	7.0	100.0
	No.	22,435	1,689	24,124
	±	368	368	
SAP 80	%	95.6	4.4	100.0
	No.	23,062	1,062	24,124
	±	252	252	
SAP 90	%	98.1	1.9	100.0
	No.	23,665	459	24,124
	±	178	178	
SAP 100	%	99.0	1.0	100.0
	No.	23,884	240	24,124
	±	155	155	

% - percent of total HEES recipients - 24,124

± - 95% Confidence limit

**Table A6.5 Fuel poverty by the SAP of property at the time of the HEES survey**

		Pre intervention		Post intervention		Total
		Not fuel-poor	Fuel poor	Not fuel-poor	Fuel-poor	
<20	%	3.7	9.5	9.6	3.6	13.2
	No.	899	2,286	2,310	875	3,185
	±	216	363	353	231	409
20- 30	%	4.5	3.9	6.8	1.6	8.4
	No.	1,090	936	1,635	391	2,026
	±	245	240	302	156	335
30- 40	%	10.5	5.0	13.1	2.4	15.5
	No.	2530	1,209	3,164	575	3,739
	±	368	271	407	189	439
40 – 50	%	23.0	6.9	246.7	3.1	29.9
	No.	5,554	1,653	6,447	760	7,207
	±	507	313	535	216	554
50- 55	%	11.6	2.4	12.7	1.3	14.0
	No.	2,808	569	3,052	325	3,377
	±	384	189	401	142	420
55 – 60	%	8.1	1.1	8.5	0.8	9.2
	No.	1,950	269	2,031	188	2,219
	±	328	132	335	108	350
60 - 65	%	5.7	0.7	5.9	0.5	6.4
	No.	1,385	159	1,426	118	1,544
	±	283	101	285	121	296
>65	%	3.0	0.1	3.1	0..	3.1
	No.	719	23	742	0	742
	±	206	70	210	70	210
Total	%	70.6	29.4	86.6	13.9	100.0
	No.	17,021	7,103	20,892	3,232	24,124
	±	560	560	422	422	

% - percent of total HEES recipients - 24,124

± - 95% Confidence limit

**Table A6.6 Pre Intervention: Level of Fuel Poverty & Household Type**

		Not fuel-poor	Moderate fuel poverty	Severe fuel poverty	Extreme fuel poverty	Total
1 Adult	%	2.3	2.1	0.2	0.1	4.6
	No.	550	502	49	16	1,116
	+ ±	181	173	70	70	254
1 Adult, 1 Child	%	2.4	2.6	0.1	0.1	5.2
	No.	582	631	32	16	1,262
	+ ±	186	193	70	70	269
1 Adult, 2+ Children	%	4.8	2.7	0.2	0.2	7.9
	No.	1,149	663	49	49	1,909
	+ ±	258	198	70	70	326
1 Pensioner	%	17.6	10.0	1.1	0.5	29.1
	No.	4,239	2,411	259	113	7,022
	+ ±	460	363	125	83	549
2 Adults, 1 Child	%	4.5	1.4	0.0	0.0	5.9
	No.	1,084	340	0	0	1,424
	+ ±	251	143	70	70	285
2 Adults, 2+ Children	%	7.3	0.7	0.1	0.0	8.1
	No.	1,764	178	16	0	1,958
	+ ±	315	103	70	70	330
2 Pensioners	%	16.8	3.4	0.3	0.1	20.7
	No.	4,061	825	81	32	5,000
	+ ±	453	220	70	70	490
Other	%	14.9	2.8	0.4	0.3	18.4
	No.	3,592	680	97	70	4,433
	+ ±	431	200	77	70	468
Total	%	70.6	25.8	2.4	1.2	100.0
	No.	17,021	6,228	583	291	24,124
	+ ±	551	529	186	132	0

% - percent of total HEES recipients - 24,124

± - 95% Confidence limit

**Table A6.7 Post Intervention: Level of Fuel Poverty & Household Type**

		Not fuel-poor	Moderate fuel poverty	Severe fuel poverty	Extreme fuel poverty	Total
1 Adult	%	3.3	1.2	0.1	0.1	4.6
	No.	792	292	16	16	1,116
	+ ±	216	132	70	70	254
1 Adult, 1 Child	%	3.8	1.4	0.0	0.1	5.2
	No.	905	341	0	16	1,262
	+ ±	230	143	70	70	269
1 Adult, 2+ Children	%	6.4	1.3	0.0	0.2	7.9
	No.	1,536	325	0	49	1,909
	+ ±	295	139	70	70	326
1 Pensioner	%	24.3	4.5	0.1	0.2	29.1
	No.	5,852	1,089	32	49	7,022
	+ ±	519	251	70	70	549
2 Adults, 1 Child	%	5.2	0.7	0.0	0.0	5.9
	No.	1,261	163	0	0	1,424
	+ ±	269	99	70	70	285
2 Adults, 2+ Children	%	7.7	0.3	0.1	0.0	8.1
	No.	1,861	81	16	0	1,958
	+ ±	323	70	70	70	330
2 Pensioners	%	19.0	1.4	0.3	0.0	20.7
	No.	4,585	336	65	0	5,000
	+ ±	474	143	70	70	490
Other	%	17.0	1.1	0.0	0.3	18.4
	No.	4,101	268	0	65	4,433
	+ ±	455	128	70	70	469
Total	%	86.7	12.0	0.5	0.8	100.0
	No.	20,892	2,908	130	194	24,124
	+ ±	411	393	88	108	0

% - percent of total HEES recipients - 24,124

± - 95% Confidence limit

**Table A6.8 Pre Intervention: Level of Fuel Poverty & Qualifying Benefit**

		Not fuel-poor	Moderate fuel poverty	Severe fuel poverty	Extreme fuel poverty	Total
Attendance Allowance	%	10.7	2.2	0.1	0.1	13.1
	No.	2,589	537	15	30	3,171
	+	374	178	70	70	409
Council Tax Benefit	%	4.0	2.0	0.3	0.3	6.6
	No.	971	490	63	78	1,602
	+	238	170	70	70	301
Disability Living Allowance	%	21.7	6.6	0.7	0.1	29.2
	No.	5,226	1,607	175	30	7,038
	±	498	301	103	70	550
Housing Benefit	%	1.1	0.7	0.1	0.0	1.8
	No.	259	164	15	0	437
	±	125	99	70	70	161
Income Support	%	11.1	7.4	0.9	0.5	19.9
	No.	2,686	1,787	224	109	4,805
	±	380	316	117	83	483
Working Family Tax Credit	%	6.6	1.2	0.0	0.1	7.8
	No.	1,586	292	0	15	1,893
	±	300	132	70	70	325
Other	%	1.1	0.4	0.2	0.0	1.7
	No.	275	99	47	0	421
	±	128	77	70	70	158
Unknown	%	14.2	5.2	0.2	0.1	19.7
	No.	3,430	1,248	47	30	4,757
	±	422	268	70	70	481
Total	%	70.6	25.7	2.5	1.3	100.0
	No.	17,022	6,228	583	291	24,124
	±	551	528	188	136	0

% - percent of total HEES recipients - 24,124

± - 95% Confidence limit

**Table A6.9 Post Intervention: Level of Fuel Poverty & Qualifying Benefit**

		Not fuel-poor	Moderate fuel poverty	Severe fuel poverty	Extreme fuel poverty	Total
Attendance Allowance	%	12.1	0.9	0.1	0.1	13.1
	No.	2,919	220	15	17	3,171
	+	394	112	70	70	408
Council Tax Benefit	%	5.5	0.8	0.1	0.3	6.6
	No.	1,329	195	14	64	1,602
	+	276	108	70	70	301
Disability Living Allowance	%	26.1	2.8	0.2	0.1	29.2
	No.	6,298	684	38	18	7,038
	±	531	200	70	70	550
Housing Benefit	%	1.4	0.3	0.0	0.0	1.7
	No.	350	87	0	0	437
	±	142	70	70	70	158
Income Support	%	16.4	3.3	0.1	0.3	20.0
	No.	3,936	787	20	62	4,805
	±	447	216	70	70	484
Working Family Tax Credit	%	6.8	0.9	0.1	0.0	7.8
	No.	1,651	228	14	0	1,893
	±	305	117	70	70	325
Other	%	1.5	0.3	0.1	0.0	1.8
	No.	354	56	11	0	421
	±	146	63	70	70	161
Unknown	%	16.8	2.7	0.1	0.1	19.7
	No.	4,055	651	19	32	4,757
	±	452	195	70	70	481
Total	%	86.5	12.0	0.7	0.8	100.0
	No.	20,892	2,908	130	194	24,124
	±	413	393	99	108	0

% - percent of total HEES recipients - 24,124

± - 95% Confidence limit

**Table A6.10 Pre Intervention: Level of Fuel Poverty & Tenure**

		Not fuel-poor	Moderate fuel poverty	Severe fuel poverty	Extreme fuel poverty	Total
Council	%	9.2	3.8	0.2	0.1	13.4
	No.	2,216	925	70	70	3,222
	+ ±	349	232	54	44	411
Housing Association	%	4.4	1.6	0.2	0.1	6.2
	No.	1,050	391	49	16	1,506
	+ ±	247	152	70	70	293
Owner Occupier	%	55.1	19.5	1.9	0.9	77.4
	No.	13,287	4,700	470	227	18,668
	+ ±	602	479	167	117	506
Private Rented	%	1.9	0.9	0.1	0.1	3.0
	No.	469	211	16	16	712
	+ ±	167	112	70	70	205
Total	%	70.6	25.8	2.4	1.2	100.0
	No.	17,022	6,228	583	291	24,124
	+ ±	551	529	186	132	0

% - percent of total HEES recipients - 24,124

± - 95% Confidence limit

**Table A6.11 Post Intervention: Level of Fuel Poverty & Tenure**

		Not fuel-poor	Moderate fuel poverty	Severe fuel poverty	Extreme fuel poverty	Total
Council	%	11.3	1.8	0.1	0.1	13.3
	No.	2,741	445	14	13	3,222
	+ ±	383	161	70	70	410
Housing Association	%	5.5	0.7	0.0	0.1	6.2
	No.	1,327	164	0	15	1,506
	+ ±	276	99	70	70	292
Owner Occupier	%	67.4	9.0	0.5	0.6	77.4
	No.	16,259	2,170	104	149	18,684
	+ ±	567	346	83	94	506
Private Rented	%	2.4	0.5	0.1	0.0	3.0
	No.	565	129	12	16	712
	+ ±	186	88	70	70	207
Total	%	86.7	12.0	0.6	0.7	100.0
	No.	20,892	2,908	130	194	24,124
	+ ±	411	393	94	103	0

% - percent of total HEES recipients - 24,124

± - 95% Confidence limit

**Table A6.12 Pre Intervention: Level of Fuel Poverty & Heating Fuel**

		Not fuel-poor	Moderate fuel poverty	Severe fuel poverty	Extreme fuel poverty	Total
Gas	%	52.9	14.3	0.4	0.7	68.3
	No.	12,750	3,462	97	170	16,483
	±	604	424	77	99	563
LPG	%	0.7	0.8	0.1	0.1	1.6
	No.	158	197	16	18	389
	±	99	108	70	70	152
Oil	%	2.8	1.1	0.0	0.0	3.9
	No.	680	261	0	0	941
	±	200	125	70	70	234
House Coal	%	8.9	3.0	0.3	0.0	12.2
	No.	2,156	716	70	70	2,936
	±	345	205	63	0	395
Smokeless Coal	%	0.1	0.2	0.1	0.0	0.5
	No.	32	49	32	0	114
	±	44	70	70	70	83
Direct Electric	%	3.0	5.6	1.5	0.3	10.5
	No.	710	1,365	373	83	2,531
	±	205	279	149	70	371
Off Peak	%	2.2	0.7	0.0	0.1	3.0
	No.	532	179	0	18	730
	±	178	104	70	70	207
Total	%	70.7	25.8	2.4	1.1	100.0
	No.	17,022	6,228	583	291	24,124
	±	551	529	186	129	0

% - percent of total HEES recipients - 24,124

± - 95% Confidence limit

**Table A6.13 Post Intervention: Level of Fuel Poverty & Heating Fuel**

		Not fuel-poor	Moderate fuel poverty	Severe fuel poverty	Extreme fuel poverty	Total
Gas	%	60.3	7.0	0.3	0.6	68.2
	No.	14,577	1,697	58	151	16,483
	±	592	308	70	94	563
LPG	%	0.9	0.6	0.1	0.0	1.6
	No.	210	147	32	0	389
	±	112	94	70	70	152
Oil	%	3.4	0.5	0.0	0.0	4.2
	No.	816	125	0	0	941
	±	220	88	70	70	241
House Coal	%	10.3	1.9	0.0	0.0	11.6
	No.	2,481	455	0	0	2,936
	±	367	164	70	70	387
Smokeless Coal	%	0.3	0.2	0.1	0.0	0.7
	No.	58	44	13	0	115
	±	63	70	70	70	99
Direct Electric	%	8.9	1.4	0.1	0.1	10.3
	No.	2,133	342	28	28	2,531
	±	345	142	70	70	368
Off Peak	%	2.5	0.4	0.0	0.1	3.4
	No.	617	97	0	16	730
	±	191	77	70	70	220
Total	%	86.6	12.0	0.6	0.8	100.0
	No.	20,892	2,908	130	194	24,124
	±	412	393	94	108	0

% - percent of total HEES recipients - 24,124

± - 95% Confidence limit

**Table A6.14 Pre Intervention: Level of Fuel Poverty & Heating System**

		Not fuel-poor	Moderate fuel poverty	Severe fuel poverty	Extreme fuel poverty	Total
Boilers and radiators	%	55.3	15.0	0.7	0.7	71.7
	No.	13,338	3,616	162	182	17,299
	±	601	432	99	104	545
Warm air	%	0.2	0.1	0.0	0.0	0.3
	No.	49	32	0	0	81
	±	54	70	70	70	70
Room heaters	%	13.0	9.9	1.7	0.3	25.0
	No.	3,124	2,400	422	85	6,031
	±	406	362	158	70	524
Storage heaters and underfloor heating	%	2.2	0.7	0.0	0.1	3.0
	No.	512	178	0	23	713
	±	175	104	70	70	205
Total	%	70.6	25.8	2.4	1.1	100.0
	No.	17,022	6,228	583	291	24,124
	±	551	529	186	129	0

% - percent of total HEES recipients - 24,124

± - 95% Confidence limit

**Table A6.15 Post Intervention: Level of Fuel Poverty & Heating System**

		Not fuel-poor	Moderate fuel poverty	Severe fuel poverty	Extreme fuel poverty	Total
Boilers and radiators	%	62.3	8.2	0.4	0.6	71.6
	No.	15,065	2,005	83	146	17,299
	±	586	333	77	94	545
Warm air	%	0.3	0.0	0.0	0.0	0.3
	No.	81	0	0	0	81
	±	70	70	70	70	70
Room heaters	%	21.4	3.4	0.2	0.1	25.1
	No.	5,151	801	47	32	6,031
	±	496	218	70	70	525
Storage heaters and underfloor heating	%	2.5	0.4	0.0	0.1	2.9
	No.	595	102	0	16	713
	±	188	77	70	70	205
Total	%	86.6	12.0	0.6	0.8	100.0
	No.	20,892	2,908	130	194	24,124
	±	412	393	94	108	0

% - percent of total HEES recipients - 24,124

± - 95% Confidence limit

**Table A6.16 Pre Intervention: Level of Fuel Poverty & Working Status**

		Not fuel-poor	Moderate fuel poverty	Severe fuel poverty	Extreme fuel poverty	Total
Working full time	%	6.1	0.7	0.1	0.0	6.9
	No.	1,473	180	19	0	1,672
	+	290	104	70	70	307
Working part time	%	7.0	2.1	0.0	0.1	9.2
	No.	1,683	505	0	13	2,208
	+	309	173	70	70	349
Waiting to start a job	%	0.2	0.2	0.0	0.1	0.5
	No.	49	49	0	13	114
	±	54	54	70	70	83
Seeking work	%	0.7	0.9	0.1	0.0	1.7
	No.	162	227	17	0	406
	±	99	117	70	70	156
Long Term Ill	%	13.1	5.4	0.4	0.3	19.1
	No.	3,144	1,301	105	60	4,611
	±	407	273	77	70	476
Retired	%	36.1	13.0	1.5	0.7	51.3
	No.	8,698	3,136	381	157	12,370
	±	581	407	149	99	605
Looking after the home	%	6.4	2.7	0.2	0.2	9.5
	No.	1,538	651	53	48	2,289
	+	296	196	70	70	354
Student	%	0.7	0.6	0.0	0.0	1.3
	No.	162	146	0	0	308
	±	99	94	70	70	136
Other	%	0.5	0.1	0.0	0.0	0.6
	No.	114	32	0	0	146
	±	83	70	70	70	94
Total	%	70.7	25.8	2.3	1.3	100.0
	No.	17,022	6,228	583	291	24,124
	±	551	529	181	136	0

**Table A6.17 Post Intervention: Level of Fuel Poverty & Working Status**

		Not fuel-poor	Moderate fuel poverty	Severe fuel poverty	Extreme fuel poverty	Total
Working full time	%	6.3	0.6	0.1	0.0	6.9
	No.	1,507	145	16	0	1,672
	+	293	94	70	70	307
Working part time	%	8.3	0.8	0.1	0.0	9.2
	No.	1,995	197	16	0	2,208
	+	334	108	70	70	350
Waiting to start a job	%	0.3	0.1	0.1	0.0	0.5
	No.	65	35	16	0	114
	±	70	70	70	70	83
Seeking work	%	1.1	0.6	0.0	0.0	1.7
	No.	260	146	0	0	406
	±	125	94	70	70	155
Long Term Ill	%	16.1	2.8	0.1	0.2	19.1
	No.	3,872	677	14	48	4,611
	±	444	198	70	70	475
Retired	%	44.9	5.6	0.3	0.5	51.2
	No.	10,819	1,368	68	115	12,370
	±	601	279	70	70	605
Looking after the home	%	8.3	1.1	0.0	0.1	9.5
	No.	1,985	274	0	30	2,289
	+	333	129	70	70	355
Student	%	1.0	0.3	0.0	0.0	1.3
	No.	243	65	0	0	308
	±	121	63	70	70	136
Other	%	0.5	0.0	0.0	0.0	0.5
	No.	1146	0	0	0	146
	±	88	70	70	70	88
Total	%	86.7	12.0	0.5	0.8	100.0
	No.	20,892	2,908	130	195	24,124
	±	411	393	88	108	0

**Table A6.18 Pre Intervention: Occupancy & Household Type**

		Under Occupied			Not Under Occupied			Total		
		Total	Fuel-poor	Non Fuel-poor	Total	Fuel-poor	Non Fuel-poor	Total	Fuel-poor	Non Fuel-poor
1 Adult	%	3.7	2.0	1.7	1.0	0.4	0.6	4.6	2.3	2.3
	No.	885	474	411	231	92	139	1,116	566	550
	±	220	177	151	89	82	89	254	181	181
1 Adult, 1 Child	%	1.4	0.8	0.6	3.8	2.0	1.8	5.2	2.8	2.4
	No.	334	189	145	927	490	437	1,262	680	582
	±	150	89	89	239	179	170	269	216	186
1 Adult, 2+ Children	%	0.4	0.3	0.2	7.5	2.9	4.6	7.9	3.1	4.8
	No.	108	65	43	1,800	695	1,105	1,909	760	1,149
	±	89	89	89	300	202	253	326	222	258
1 Pensioner	%	22.6	9.2	13.4	6.5	2.4	4.2	29.1	11.5	17.6
	No.	5,445	2,215	3,230	1,577	568	1,009	7,022	2,783	4,239
	±	505	339	406	295	181	244	549	351	460
2 Adults, 1 Child	%	0.5	0.1	0.4	5.4	1.3	4.1	5.9	1.4	4.5
	No.	121	25	96	1,303	315	988	1,424	340	1,084
	±	89	89	89	270	100	240	285	109	251
2 Adults, 2+ Children	%	0.3	0.1	0.2	7.8	0.7	7.1	8.1	0.8	7.3
	No.	65	21	44	1,893	173	1,720	1,958	194	1,764
	±	89	89	89	305	87	311	330	99	315
2 Pensioners	%	8.5	1.6	6.9	12.3	2.3	9.9	20.7	3.9	16.8
	No.	2,041	374	1,667	2,959	564	2,395	5,000	939	4,061
	±	339	143	291	388	181	265	490	238	453
Other	%	2.7	0.2	2.5	15.7	3.3	12.4	18.4	3.5	14.9
	No.	646	38	608	3,787	804	2,983	4,433	841	3,592
	±	191	89	188	431	217	377	468	227	431
Total	%	40.0	14.1	25.9	60.0	15.3	44.7	100.0	29.4	70.6
	No.	9,645	3,403	6,242	14,479	3,700	10,779	24,124	7,103	17,021
	±	556	394	500	556	409	563	0	551	551

**Table A6.19 Post Intervention: Occupancy & Household Type**

		Under Occupied			Not Under Occupied			Total		
		Total	Fuel-poor	Non Fuel-poor	Total	Fuel-poor	Non Fuel-poor	Total	Fuel-poor	Non Fuel-poor
1 Adult	%	3.7	1.1	2.5	1.0	0.2	0.8	4.6	1.3	3.3
	No.	885	271	614	231	52	179	1,116	324	792
	±	221	96	193	89	89	98	254	122	216
1 Adult, 1 Child	%	1.3	0.3	1.0	3.8	1.2	2.7	5.2	1.4	3.8
	No.	334	73	261	927	284	643	1,262	357	905
	±	150	89	101	239	107	193	269	137	230
1 Adult, 2+ Children	%	0.4	0.2	0.2	7.5	1.3	6.2	7.9	1.5	6.4
	No.	108	66	42	1800	37	1493	1,909	373	1,536
	±	89	89	89	300	111	283	326	137	295
1 Pensioner	%	22.6	3.6	19.0	6.5	1.3	5.2	29.1	4.8	24.3
	No.	5445	858	4587	1577	311	1266	7,022	1,169	5,852
	±	505	220	471	295	113	271	549	266	519
2 Adults, 1 Child	%	0.5	0.1	0.4	5.4	0.6	4.8	5.9	0.7	5.2
	No.	121	23	98	1303	139	1164	1,424	163	1,261
	±	89	89	89	270	89	253	285	90	269
2 Adults, 2+ Children	%	0.3	0.1	0.2	7.8	0.3	7.5	8.1	0.4	7.7
	No.	65	20	45	1893	77	1816	1,958	97	1,861
	±	89	89	89	305	89	320	330	89	323
2 Pensioners	%	8.5	0.8	7.7	12.2	1.0	11.3	20.7	1.7	19.0
	No.	2041	187	1854	2959	227	2732	5,000	415	4,585
	±	339	89	323	388	98	381	490	155	474
Other	%	2.7	0.2	2.5	15.7	1.2	14.5	18.4	1.4	17.0
	No.	646	37	609	3787	295	3492	4,433	332	4,101
	±	191	89	188	431	109	433	469	125	455
Total	%	40.0	6.4	33.6	60.0	7.0	53.0	100.0	13.3	86.7
	No.	9,645	1,535	8,110	14,479	1,693	12,786	24,124	3,232	20,892
	±	556	278	539	556	333	400		411	411

**Table A6.20 Post Intervention: Satisfaction with Home**

		Total	Fuel-poor	Non fuel-poor
Very satisfied	%	72.9	4.2	38.7
	No	10,344	1,017	9,327
	+ ±	609	246	599
Fairly satisfied	%	40.3	6.0	34.3
	No	9,716	1,442	8,272
	+ ±	603	291	584
Neither satisfied or dissatisfied	%	7.8	1.4	6.4
	No	1,884	334	1,549
	+ ±	330	143	302
Slightly dissatisfied	%	6.4	1.2	5.2
	No	1,553	300	1,253
	+ ±	302	136	273
Very dissatisfied	%	2.6	0.5	2.1
	No	628	135	493
	+ ±	196	91	174
Total	%	100.0	13.4	86.7
	No	24,124	3,232	20,892
	+ ±		417	417

% - percent of total HEES recipients - 24,124  
 ± - 95% Confidence limit

**Table A6.21 Post Intervention: Comfort of home since intervention**

		Total	Fuel-poor	Non fuel-poor
Much Warmer	%	50.5	5.5	44.9
	No	12,172	1,357	10,815
	±	619	283	616
Little warmer	%	31.3	4.7	26.6
	No	7,552	1,154	6,398
	±	574	262	547
About the same	%	17.4	2.5	14.9
	No	4,198	597	3,601
	±	469	194	441
Colder	%	0.8	0.3	0.5
	No	202	94	108
	±	113	73	86
Total	%	100.0	13.4	86.6
	No	24,124	3,232	20,892
	±		417	417

% - percent of total HEES recipients - 24,124

± - 95% Confidence limit

**Table A6.22 Post Intervention: Perception of poverty – level above a satisfactory standard of income**

		Total	Fuel-poor	Non fuel-poor
Far above	%	3.0	0.3	2.7
	No	729	73	656
	±	212	68	201
Little above	%	15.2	1.5	13.7
	No	3,662	362	3,300
	±	444	151	425
About the same	%	19.9	2.3	17.6
	No	4,810	563	4,243
	±	495	187	472
Little below	%	25.8	2.7	23.0
	No	6,213	656	5,557
	±	541	201	521
Far below	%	24.2	5.0	19.3
	No	5,849	1,198	4,651
	±	531	269	488
Don't Know	%	11.9	1.6	10.3
	No	2,861	381	2,480
	±	400	155	376
Total	%	100.0	13.4	86.6
	No	24,124	3,232	20,892
	±		422	422

% - percent of total HEES recipients - 24,124

± - 95% Confidence limit

## Appendix 7: Results From Postal Survey

Table A7.1 Pre Intervention: Different income and heating definitions

		Not fuel-poor	Moderate fuel poverty	Severe fuel poverty	Extreme fuel poverty	Total
Full income/Mixed heating	No.	1030	407	39	18	1494
	%	68.9	27.2	2.6	1.2	100
Basic income/Mixed heating	No.	997	454	69	22	1494
	%	66.7	30.4	4.6	1.5	100
Extended heating/full income	No.	920	477	61	36	1494
	%	61.6	31.9	4.1	2.4	100
Standard Heating/full income	No.	967	439	60	28	1494
	%	64.7	29.4	4.0	1.9	100
Mixed Heating/full income	No.	1030	407	39	18	1494
	%	68.9	27.2	2.6		100

% - percent of survey returns

**Table A7.2 Post Intervention: Different income and heating definitions**

		Not fuel-poor	Moderate fuel poverty	Severe fuel poverty	Extreme fuel poverty	Total
Full income/Mixed heating	No.	1283	191	10	10	1494
	%	85.9	12.8	0.7	0.7	100.0
Basic income/Mixed heating	No.	1199	250	22	23	1494
	%	80.2	16.7	1.5	1.5	100.0
Extended heating/full income	No.	1212	210	42	30	1494
	%	81.1	14.0	3.0	2.0	100.0
Standard Heating/full income	No.	1251	203	27	13	1494
	%	83.7	13.5	1.8	0.1	100.0
Mixed Heating/full income	No.	1283	191	10	10	1494
	%	85.9	12.8	0.6	0.7	100.0

% - percent of survey returns

**Table A7.3 Post Intervention: Fuel Price Increases**

		Not fuel-poor	Moderate fuel poverty	Severe fuel poverty	Extreme fuel poverty	Total
5%	No	1251	219	13	11	1494
	%.	83.7	14.7	0.9	0.7	100.0
10%	No	1215	254	14	11	1494
	%.	81.3	17.0	0.9	0.7	100.0
20%	No	1126	338	18	12	1494
	%.	75.4	22.6	1.2	0.8	100.0
30%	No	1029	424	26	15	1494
	%.	68.9	28.4	1.7	1.0	100.0

% - percent of survey returns

**Table A7.4 Post Intervention: Target SAPs**

		Not fuel-poor	Fuel-Poor	Total
SAP 50	No.	1,333	162	1,494
	%	89.2	10.8	100.0
SAP 55	No.	1,347	147	1,494
	%	90.1	9.9	100.0
SAP 60	No.	1,358	136	1,494
	%	90.9	9.2	100.0
SAP 65	No.	1,376	119	1,494
	%	92.0	7.9	100.0
SAP 70	No.	1,384	111	1494
	%	92.5	7.4	100.0
SAP 80	No.	1,425	68	1,494
	%	95.3	4.7	100.0
SAP 90	No.	1,464	30	1,494
	%	97.9	2.0	100.0
SAP 100	No.	1,479	16	1,494
	%	98.9	1.1	100.0

% - percent of survey returns

**Table A7.5 Fuel poverty by SAP of the property at the time of the HEES survey**

		Pre intervention		Post intervention		Total
		Not fuel-poor	Fuel poor	Not fuel-poor	Fuel-poor	
<20	No.	49	149	141	57	198
	%	3.3	10.0	9.4	3.8	13.2
20- 30	No.	64	62	100	26	126
	%	4.3	4.1	6.7	1.7	8.4
30- 40	No.	154	79	195	38	233
	%	10.3	5.3	13.0	2.5	15.6
40 – 50	No.	341	108	399	50	449
	%	22.8	7.2	26.7	3.3	30.0
50- 55	No.	171	38	188	21	209
	%	11.4	2.5	12.6	1.4	14.0
55 – 60	No.	119	18	125	12	137
	%	8.0	1.2	8.4	0.8	9.2
60 - 65	No.	87	10	89	8	97
	%	5.8	0.7	5.9	0.5	6.4
>65	No.	45	1	46	0	46
	%	3.0	0.0	3.1	0.0	3.1
Total	No.	1030	465	1283	212	1495
	%	68.9	31.1	85.8	14.1	100.0

% - percent of survey returns

**Table A7.6 Pre Intervention: Level of Fuel Poverty & Household Type**

		Not fuel-poor	Moderate fuel poverty	Severe fuel poverty	Extreme fuel poverty	Total
1 Adult	No.	40	37	5	1	83
	%	2.7	2.5	0.3	0.1	5.6
1 Adult, 1 Child	No.	31	34	2	1	68
	%	2.1	2.3	0.1	0.1	4.6
1 Adult, 2+ Children	No.	53	31	2	2	88
	%	3.5	2.1	0.1	0.1	5.9
1 Pensioner	No.	348	200	20	10	578
	%	23.3	13.4	1.3	0.7	38.7
2 Adults, 1 Child	No.	46	14	0.	0	60
	%	3.1	0.9	0.0	0.0	4.0
2 Adults, 2+ Children	No.	109	11	1	0	121
	%	7.3	0.7	0.1	0.0	8.1
2 Pensioners	No.	323	62	6	2	393
	%	21.6	4.1	0.4	0.1	26.3
Other	No.	80	18	3	2	103
	%	5.4	1.2	0.2	0.1	6.9
Total	No.	1030	407	39	18	1494
	%	68.9	27.2	2.6	1.2	100.0

% - percent of survey returns

**Table A7.7 Post Intervention: Level of Fuel Poverty & Household Type**

		Not fuel-poor	Moderate fuel poverty	Severe fuel poverty	Extreme fuel poverty	Total
1 Adult	No.	58	23	2	0	83
	%	3.9	1.5	0.1	0.0	5.6
1 Adult, 1 Child	No.	49	18	0	1	68
	%	3.3	1.2	0.0	0.1	4.6
1 Adult, 2+ Children	No.	71	15	0	2	88
	%	4.8	1.0	0.0	0.1	5.9
1 Pensioner	No.	481	90	2	5	578
	%	32.2	6.0	0.1	0.3	38.7
2 Adults, 1 Child	No.	53	7	0	0	60
	%	3.5	0.5	0.0	0.0	4.0
2 Adults, 2+ Children	No.	115	5	1	0	121
	%	7.7	0.3	0.1	0.0	8.1
2 Pensioners	No.	362	26	5	0	393
	%	24.2	1.7	0.3	0.0	26.3
Other	No.	94	7	0	2	103
	%	6.3	0.5	0.0	0.1	6.9
Total	No.	1283	191	10	10	1494
	%	85.9	12.8	0.7	0.7	100.0

% - percent of survey returns

**Table A7.8 Pre Intervention: Level of Fuel Poverty & Qualifying Benefit**

		Not fuel-poor	Moderate fuel poverty	Severe fuel poverty	Extreme fuel poverty	Total
Attendance Allowance	No.	179	40	1	2	222
	%	12.0	2.7	0.1	0.1	14.9
Council Tax Benefit	No.	68	37	5	3	113
	%	4.6	2.5	0.3	0.2	7.6
Disability Living Allowance	No.	310	101	9	2	422
	%	20.7	6.8	0.6	0.1	28.2
Housing Benefit	No.	18	11	1	0	30
	%	1.2	0.7	0.1	0.0	2.0
Income Support	No.	174	130	17	8	329
	%	11.6	8.7	1.1	0.5	22.0
Working Family Tax Credit	No.	79	14	0	1	94
	%	5.3	0.9	0.0	0.1	6.3
Other	No.	16	7	3	0	26
	%	1.1	0.5	0.2	0.0	1.7
Unknown	No.	186	67	3	2	258
	%	12.4	4.5	0.2	0.1	17.3
Total	No.	1030	407	39	18	1494
	%	68.9	27.2	2.6	1.2	100.0

% - percent of survey returns

**Table A7.9 Post Intervention: Level of Fuel Poverty & Qualifying Benefit**

		Not fuel-poor	Moderate fuel poverty	Severe fuel poverty	Extreme fuel poverty	Total
Attendance Allowance	No.	204	16	1	1	222
	%	13.7	1.1	0.1	0.1	14.9
Council Tax Benefit	No.	96	14	1	2	113
	%	6.4	0.9	0.1	0.1	7.6
Disability Living Allowance	No.	375	43	3	1	422
	%	25.1	2.9	0.2	0.1	28.2
Housing Benefit	No.	24	6	0	0	30
	%	1.6	0.4	0.0	0.0	2.0
Income Support	No.	262	61	2	4	329
	%	17.5	4.1	0.1	0.3	22.0
Working Family Tax Credit	No.	82	11	1	0	94
	%	5.5	0.7	0.1	0.0	6.3
Other	No.	20	5	1	0	26
	%	1.3	0.3	0.1	0.0	1.7
Unknown	No.	220	35	1	2	258
	%	14.7	2.3	0.1	0.1	17.3
Total	No.	1283	191	10	10	1494
	%	85.9	12.8	0.7	0.7	100.0

% - percent of survey returns

**Table A7.10 Pre Intervention - Level of Fuel Poverty & Tenure**

		Not fuel-poor	Moderate fuel poverty	Severe fuel poverty	Extreme fuel poverty	Total
Council	No.	130	57	3	2	192
	%	8.7	3.8	0.2	0.1	12.9
Housing Association	No.	63	23	4	1	91
	%	4.2	1.5	0.3	0.1	6.1
Owner Occupier	No.	809	314	31	14	1168
	%	54.1	21.0	2.1	0.9	78.2
Private Rented	No.	28	13	1	1	43
	%	1.9	0.9	0.1	0.1	2.9
Total	No.	1030	407	39	18	1494
	%	68.9	27.2	2.6	1.2	100.0

% - percent of survey returns

**Table A7.11 Post Intervention: Level of Fuel Poverty & Tenure**

		Not fuel-poor	Moderate fuel poverty	Severe fuel poverty	Extreme fuel poverty	Total
Council	No.	161	29	1	1	192
	%	10.8	1.9	0.1	0.1	12.9
Housing Association	No.	79	11	0	1	91
	%	5.3	0.7	0.0	0.1	6.1
Owner Occupier	No.	1009	143	8	8	1168
	%	67.5	9.6	0.5	0.5	78.2
Private Rented	No.	34	8	1	8	43
	%	2.3	0.5	0.1	0.0	2.9
Total	No.	1283	191	10	10	1494
	%	85.9	12.8	0.7	0.7	100.0

% - percent of survey returns

**Table A7.12 Pre Intervention: Level of Fuel Poverty & Heating Fuel**

		Not fuel-poor	Moderate fuel poverty	Severe fuel poverty	Extreme fuel poverty	Total
Gas	No.	780	223	8	8	1019
	%	52.2	14.9	0.5	0.5	68.2
LPG	No.	9	14	1	1	25
	%	0.6	0.9	0.1	0.1	1.7
Oil	No.	43	19	0	0	62
	%	2.9	1.3	0.0	0.0	4.1
House Coal	No.	121	49	3	0	176
	%	8.1	3.3	0.2	0.0	11.6
Smokeless Coal	No.	3	4	3	0	10
	%	0.2	0.3	0.2	0.0	0.7
Direct Electric	No.	37	86	24	7	154
	%	2.5	5.8	1.6	0.5	10.3
Off Peak	No.	37	12	0	2	51
	%	2.5	0.8	0.0	0.1	3.4
Total	No.	1030	407	39	18	1494
	%	68.9	27.2	2.6	1.2	100.0

% - percent of survey returns

**Table A7.13 Post Intervention: Level of Fuel Poverty & Heating Fuel**

		Not fuel-poor	Moderate fuel poverty	Severe fuel poverty	Extreme fuel poverty	Total
Gas	No.	899	109	5	6	1019
	%	60.2	7.3	0.3	0.4	68.2
LPG	No.	12	11	2	0	25
	%	0.8	0.7	0.1	0.0	1.7
Oil	No.	53	9	0	0	62
	%	3.5	0.6	0.0	0.0	4.1
House Coal	No.	142	31	0	0	173
	%	9.5	2.1	0.0	0.0	11.6
Smokeless Coal	No.	5	4	1	0	10
	%	0.3	0.3	0.1	0.0	0.07
Direct Electric	No.	129	21	2	2	154
	%	8.6	1.4	0.1	0.1	10.3
Off Peak	No.	43	6	0	2	51
	%	2.9	0.4	0.0	0.1	3.4
Total	No.	1283	191	10	10	1494
	%	85.9	12.8	0.7	0.7	100.0

% - percent of survey returns

**Table A7.14 Pre Intervention: Level of Fuel Poverty & Heating System**

		Not fuel-poor	Moderate fuel poverty	Severe fuel poverty	Extreme fuel poverty	Total
Boilers and radiators	No.	812	237	11	9	1069
	%	54.4	15.9	0.7	0.6	71.6
Warm air	No.	4	2	0	0	6
	%	0.3	0.1	0.0	0.0	0.4
Room heaters	No.	178	157	28	7	370
	%	11.9	10.5	1.9	0.5	24.8
Storage heaters and underfloor heating	No.	36	11	0	2	49
	%	2.4	0.7	0.0	0.1	3.3
Total	No.	1030	407	39	18	1494
	%	68.9	27.2	2.6	1.2	100.0

% - percent of survey returns

**Table A7.15 Post Intervention: Level of Fuel Poverty & Heating System**

		Not fuel-poor	Moderate fuel poverty	Severe fuel poverty	Extreme fuel poverty	Total
Boilers and radiators	No.	923	133	7	6	1069
	%	61.8	8.9	0.5	0.4	71.6
Warm air	No.	6	0	0	0	6
	%	0.4	0.00	0.0	0.0	0.4
Room heaters	No.	313	52	3	2	370
	%	21.0	3.5	0.2	0.1	24.8
Storage heaters and underfloor heating	No.	41	6	0	2	49
	%	2.7	0.4	0.0	0.1	3.3
Total	No.	1283	191	10	10	1494
	%	85.9	12.8	0.7	0.7	100.0

% - percent of survey returns

**Table A7.16 Pre Intervention: Level of Fuel Poverty & Working Status**

		Not fuel-poor	Moderate fuel poverty	Severe fuel poverty	Extreme fuel poverty	Total
Working full time	No.	69	10	1	0	80
	%	4.6	0.7	0.1	0.0	5.3
Working part time	No.	86	24	0	1	111
	%	5.7	1.6	0.0	0.1	7.4
Waiting to start a job	No.	2	3	0	1	6
	%	0.1	0.2	0.0	0.1	0.4
Seeking work	No.	8	12	1	0	21
	%	0.5	0.8	0.1	0.0	1.4
Long Term Ill	No.	165	83	7	4	259
	%	11.0	5.5	0.5	0.3	17.3
Retired	No.	605	232	27	9	873
	%	40.4	15.5	1.8	0.6	58.3
Looking after the home	No.	80	35	3	3	121
	%	5.3	2.3	0.2	0.2	8.1
Student	No.	9	8	0	0	17
	%	0.6	0.5	0.0	0.0	1.1
Other	No.	6	2	1	0	9
	%	0.4	0.1	0.1	0.0	0.6
Total	No.	1030	49	40	18	1497
	%	68.8	27.3	2.7	1.2	100.0

**Table A7.17 Post Intervention: Level of Fuel Poverty & Working Status**

		Not fuel-poor	Moderate fuel poverty	Severe fuel poverty	Extreme fuel poverty	Total
Working full time	No.	71	8	1	0	80
	%	4.7	0.5	0.1	0.0	5.3
Working part time	No.	101	9	1	0	111
	%	6.7	0.6	0.1	0.0	7.4
Waiting to start a job	No.	3	2	1	0	6
	%	0.2	0.1	0.1	0.0	0.4
Seeking work	No.	13	8	0	0	21
	%	0.9	0.5	0.0	0.0	1.4
Long Term Ill	No.	211	43	2	3	259
	%	14.1	2.9	0.1	0.2	17.3
Retired	No.	760	103	5	5	873
	%	50.7	6.9	0.3	0.3	58.3
Looking after the home	No.	105	15	0	2	122
	%	7.0	1.0	0.0	0.1	8.1
Student	No.	13	4	0	0	17
	%	0.9	0.3	0.0	0.0	1.1
Other	No.	7	1	1	0	9
	%	0.5	0.1	0.1	0.0	0.6
Total	No.	1284	193	11	10	1498
	%	85.7	12.9	0.7	0.7	100.0

**Table A7.18 Pre Intervention: Occupancy & Household Type**

		Under Occupied			Not Under Occupied			Total		
		Total	Fuel-poor	Non Fuel-poor	Total	Fuel-poor	Non Fuel-poor	Total	Fuel-poor	Non Fuel-poor
1 Adult	No.	65	36	29	17	7	10	82	43	39
	%	4.4	2.4	1.9	1.1	0.5	0.7	5.5	2.9	2.6
1 Adult, 1 Child	No.	18	10	8	50	27	23	68	37	31
	%	1.2	0.7	0.5	3.4	1.8	1.5	4.6	2.5	2.1
1 Adult, 2+ Children	No.	5	3	2	83	32	51	88	35	53
	%	0.3	0.2	0.1	5.6	2.1	3.4	5.9	2.3	3.6
1 Pensioner	No.	449	184	265	130	47	83	579	231	348
	%	30.1	12.3	17.8	8.7	3.2	5.6	38.8	15.5	23.3
2 Adults, 1 Child	No.	5	1	4	54	13	41	59	14	45
	%	0.3	0.1	0.3	3.6	0.9	2.7	4.0	0.9	3.0
2 Adults, 2+ Children	No.	4	1	3	116	10	106	120	11	109
	%	0.3	0.1	0.2	7.8	0.7	7.1	8.0	0.7	7.3
2 Pensioners	No.	160	28	132	232	42	190	392	70	322
	%	10.7	1.9	8.9	15.6	2.8	12.7	26.3	4.7	21.6
Other	No.	15	1	14	88	22	66	103	23	80
	%	1.0	0.1	0.9	5.9	1.5	4.4	6.9	1.5	5.4
Total	No.	721	264	457	770	200	570	1491	464	1027
	%	48.4	17.7	30.7	51.6	13.4	38.2	100.0	31.1	68.9

% - percent of survey returns

**Table A7.19 Post Intervention: Occupancy & Household Type**

		Under Occupied			Not Under Occupied			Total		
		Total	Fuel-poor	Non Fuel-poor	Total	Fuel-poor	Non Fuel-poor	Total	Fuel-poor	Non Fuel-poor
1 Adult	No.	65	21	44	17	4	13	82	25	57
	%	4.4	1.4	3.0	1.1	0.3	0.9	5.5	1.7	3.8
1 Adult, 1 Child	No.	18	4	14	50	15	35	68	19	49
	%	1.2	0.3	0.9	3.4	1.0	2.3	4.6	1.3	3.3
1 Adult, 2+ Children	No.	5	3	2	83	14	69	88	17	71
	%	0.3	0.2	0.1	5.6	0.9	4.6	5.9	1.1	4.8
1 Pensioner	No.	449	72	377	130	26	104	579	98	481
	%	30.1	4.8	25.3	8.7	1.7	7.0	38.8	6.6	32.3
2 Adults, 1 Child	No.	5	1	4	54	6	48	59	7	52
	%	0.3	0.1	0.3	3.6	0.4	3.2	4.0	0.5	3.5
2 Adults, 2+ Children	No.	4	1	3	116	4	112	120	5	115
	%	0.3	0.1	0.2	7.8	0.3	7.5	8.0	0.3	7.7
2 Pensioners	No.	160	14	146	232	17	215	392	31	361
	%	10.7	0.9	9.8	15.6	1.1	14.4	26.3	2.1	24.2
Other	No.	15	1	14	88	8	80	103	9	94
	%	1.0	0.1	0.9	5.9	0.5	5.4	6.9	0.6	6.3
Total	No.	721	117	604	770	94	676	1491	211	1280
	%	48.4	7.8	40.5	51.6	6.3	45.3	100.0	14.2	85.8

**Table A7.20 Post Intervention: Satisfaction with Home**

		Total	Fuel-poor	Non fuel-poor
Very satisfied	No.	653	69	584
	%	44.5	4.7	39.8
Fairly satisfied	No.	574	91	483
	%	39.1	6.2	32.9
Neither satisfied or dissatisfied	No.	111	21	90
	%	7.6	1.4	6.1
Slightly dissatisfied	No.	95	20	75
	%	6.5	1.4	5.1
Very dissatisfied	No.	36	8	28
	%	2.5	0.5	1.9
Total	No.	1469	209	1260
	%	100.0	14.2	85.8

% - percent of survey returns

**Table A7.21 Post Intervention: Comfort of home since intervention**

		Total	Fuel-poor	Non fuel-poor
Much Warmer	No.	734	82	652
	%	51.1	5.7	45.4
Little warmer	No.	442	72	370
	%	30.8	5.0	25.8
About the same	No.	248	40	208
	%	17.3	2.8	14.5
Colder	No.	12	5	7
	%	0.8	0.3	0.5
Total	No.	1436	199	1237
	%	100.0	13.9	86.1

% - percent of survey returns

**Table A7.22 Post Intervention: Perception of poverty - level above a satisfactory standard of income**

		Total	Fuel-poor	Non fuel-poor
Far above	No.	38	4	34
	%	2.9	0.3	2.6
Little above	No.	200	21	179
	%	15.2	1.6	13.6
About the same	No.	277	37	240
	%	21.1	2.8	18.3
Little below	No.	323	37	286
	%	24.6	2.8	21.8
Far below	No.	303	69	234
	%	23.1	5.3	17.8
Don't Know	No.	172	23	149
	%	13.1	1.8	11.3
Total	No.	1313	191	1122
	%	100.0	14.5	85.5

% - percent of survey returns