

Tackling Poverty Board – Logic Model and Evidence Review for ‘supporting those facing hardship as a result of energy prices’

1 What is energy used for in the home?

- 1.1 Within the home energy is required to heat space and hot water as well as to cook, power lights and power kitchen and home entertainment appliances. The amount of energy required to heat space and water will depend on the type and efficiency of the heating system alongside the amount of insulation to the loft, walls, floor, windows, pipes and tanks. The amount of energy required to power lights and appliances will depend on the efficiency rating of the appliances. In general, over time energy efficiency standards of homes have improved, energy efficiency standards of lights and appliances have also improved but households own more lights and appliances so energy usage has remained relatively stable.
- 1.2 Gas and electricity are the most common fuels in the home but some are also heated by oil, coal, smokeless fuel or through district heating systems.
- 1.3 There is an increasing move towards renewable energy sources. This does not decrease the amount of energy required but takes it from a renewable source. Depending on the energy source and the related tariff this can in itself reduce monthly bills in some cases however the cost of installation of many technologies would be outwith the resources of lower income households.

2 What is the past and future trend for energy prices?

- 2.1 Energy trends are difficult to predict. During the 1990s there was a cross European trend of falling prices as cheaper fuels were introduced for electricity production and competition rose in the electricity markets¹. In 2004 energy prices were lower than they had been in 1970 in real terms. For gas, end user prices started to rise sharply from 2004 following rising world oil prices. However, despite price rises, by 2008 energy prices in the UK remained below average when considered against other European countries².
- 2.2 More recent times have seen continued significant price rises³. 2009 figures show the average standard credit bill for gas in Scotland increased by £147 from prices in 2008, whereas direct debit and prepayment bills increased by £131 and £142 respectively. This represents an increase of around 25% on all

¹ European Environment Agency

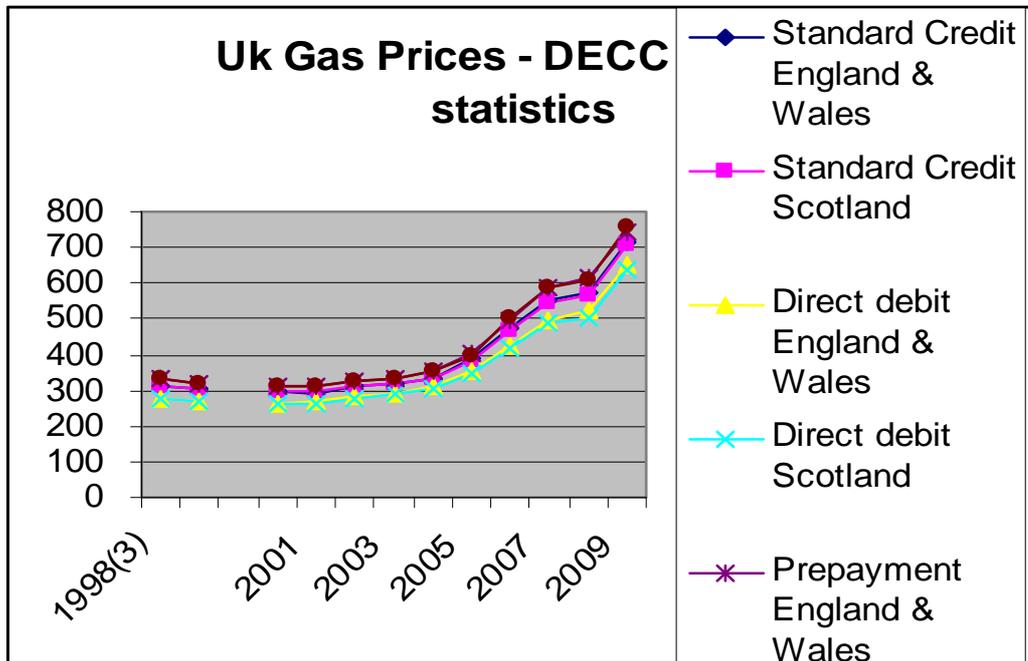
<http://www.eea.europa.eu/data-and-maps/indicators/en31-energy-prices-1#toc-1>

² Europe’s Energy Portal <http://www.energy.eu/#Domestic>

³ <http://www.decc.gov.uk/en/content/cms/statistics/source/prices/prices.aspx>

types of gas bill in Scotland between 2008 and 2009 and a 75% increase in real terms for the 20 year period from 1999 to 2009 (see Fig 1).

Fig 1 Average annual UK domestic gas bills (£ annual) 1998-2010

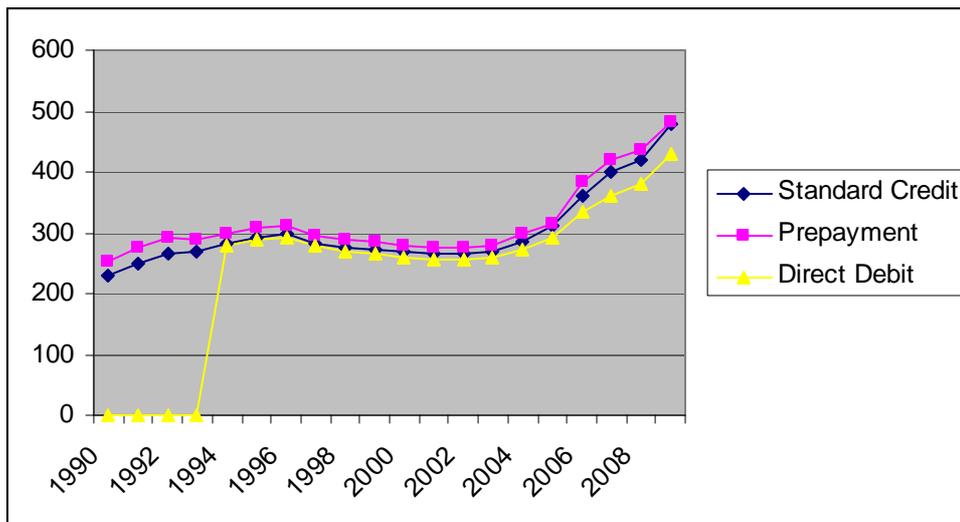


Source: DECC Energy Statistics

2.3 DECC Energy Statistics show a similar pattern for electricity with an average standard credit bill increasing by £58 between 2008 and 2009, whereas direct debit and pre-payment bills increased by £51 and £45 respectively. The average standard credit Economy 7 bill increased by £78 over the same period, whereas direct debit and pre-payment Economy 7 bills increased by £76 and £81 respectively. This represents a 13% increase between 2008 and 2009, and a real increase of around 35% in the period 1999-2009 (see Fig 2).

2.4 In all cases the pre-payment bills are slightly higher than standard payment and generally increased at a faster rate than other types of bills. Over one in five L3 households use prepayment meters (22% compared to 14% of other households). Increased prices in this area therefore has a disproportionate impact on lower income households.

Fig 2 Average annual Scottish domestic electricity bills (£ annual) 1998-2009



NB: Direct Debit was only recorded from 1994.

- 2.5 With rising concerns about climate change requiring additional expenditure on renewable energy infrastructure, as well as the long term security of energy supplies, and rising gas and oil prices on the global markets it is highly likely that energy prices will continue to increase over the next decade.

3 Who is at risk of facing hardship as a result of energy prices?

3.1 Scottish Government has a longstanding aim to 'eradicate fuel poverty as far as is reasonably practical by 2016'. Many households within the L3 income group will fall within the current definition of fuel poverty, but due to the complex nature of fuel poverty there are households with higher levels of income who are seen as fuel poor and therefore potentially facing hardship because of energy prices, and households within the L3 group who are not seen as fuel poor despite being on very low incomes. The presence of this fuel poverty target is key to understanding activity to support households facing hardship due to energy prices in Scotland because much of it has been driven by the longstanding declared aim of reducing fuel poverty.

3.2 The definition of fuel poverty is that a person is living in fuel poverty if, in order to maintain a satisfactory heating regime, they would be required to spend more than 10 per cent of their household income (including Housing Benefit or Income Support for Mortgage Interest) on all household fuel use. Three factors therefore can cause fuel poverty;

- **Low household income.** The costs of heating a property take a greater proportion of total income for those on low incomes (fuel poverty threshold is 10%).
- **Fuel costs.** Higher prices reduce the affordability of fuel. Prices of different types of fuels can vary considerably, as can the availability of

different fuels in different areas, and of different types of heating systems. This affects the ability of consumers to exercise choice.

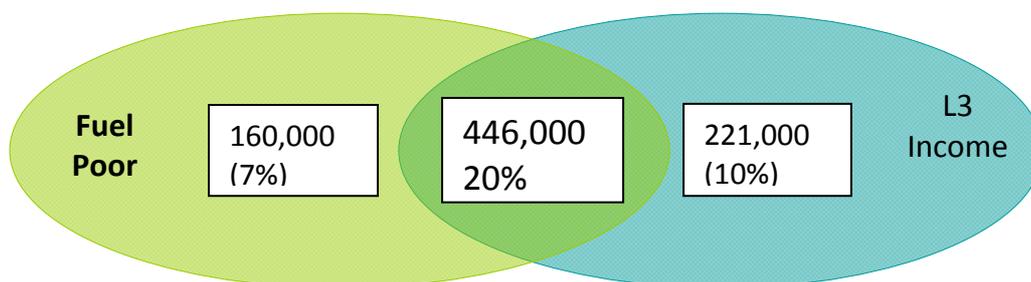
- **Energy efficiency.** The thermal quality of the building and the efficiency of the heating source determine the amount of energy that must be purchased to heat the home adequately. In Scotland this tends to be measured in terms of National Home Energy rating (NHER) and the Scottish House Condition Survey classifies dwellings as poor (0-2); moderate (3-7) and good (7-10).

Fuel poverty modelling in Scotland does not adjust for under-occupancy, assuming that all rooms will be heated to the standard heating regime. This may be a real problem in that older people continue to live in large, expensive-to-heat accommodation, or a modelling problem in that households may only heat parts of the accommodation⁴ that they continue to occupy on a daily basis.

3.3 As Fig 1 shows the majority, that is 446,000 households of L3 group are also considered to be fuel poor using the Scottish Government definition. In addition 160,000, that is 7% of all Scottish households are considered to be fuel poor despite having higher incomes, and 211,000, that is 10% of households are considered to not be fuel poor despite being in the L3 group.

3.4 Logically, the reasons for both high income households being fuel poor and lower income households not being fuel poor will primarily relate to the energy efficiency standard of their home.

Fig 1 Comparison of L3 and Fuel Poor Households in Scotland (SHCS, 2008)



⁴ The Scottish definition of fuel poverty also assumes that the main living area is heated to 23 degrees for older households.

Table 1 - The profile of L3 households compared to L4-10 for energy factors

| Factor | L3 | L4-L10 | All households |
|--|---------------|---------|----------------|
| Median Income | £8,300 | £23,400 | £18,000 |
| Living in flats | 52% | 30% | 36% |
| Living in pre-1945 housing | 33% | 33% | 33% |
| Living in social rented housing | 48% | 18% | 27% |
| Contain a pensioner | 55% | 27% | 35% |
| Dwelling is poor energy efficiency | 4% | 3% | 3% |
| Dwelling is good energy efficiency | 55% | 47% | 50% |
| Dwelling is on gas grid | 91% | 89% | 89% |
| Dwelling has no or partial heating | 7% | 5% | 5% |
| Dwelling is not hard to treat | 69% | 71% | 70% |
| Average energy efficiency score of dwellings occupied by fuel poor | 5.9 | 4.1 | 6.3 |

- 3.5 One way to examine the relationship between income and energy efficiency is to compare what would happen if dwellings are improved to meet a Scottish Housing Quality Standard which requires loft and cavity wall insulation, efficient central heating systems and a minimum energy standard. The answer is that the rate of fuel poverty for higher income groups halves with only 32,000 (20%) remaining fuel poor, partially because they are starting from a lower energy efficiency standard, while in the L3 group even when the dwelling is improved to meet SHQS 180,000 (40%) remain fuel poor.
- 3.6 However it is still quite difficult to isolate simple factors in the data (see Table 1). While L3 households are more likely to live in the social rented sector and more likely to live in flats where energy efficiency standards tend to be slightly higher, there are very few differences in other aspects which impact on energy efficiency such as numbers on and off the gas grid, numbers of hard to treat homes, and numbers without full central heating.
- 3.7 It is the relationship between the factors that defines fuel poverty, so any temporary or long term change in the three factors will cause a household's status as fuel poor or not fuel poor to change. The 10 per cent income spent on fuel limit is to an extent an arbitrary cut-off and given the fluctuations in

number of fuel poor over time it is sensible to suggest that if a household is in the L3 income bracket any increase in energy prices is likely to have a disproportionate impact on their ability to cope.

- 3.8 **Therefore for the purpose of this work it has been decided to restrict analysis to the L3 group whether or not they are currently seen as falling within the fuel poor bracket.** The reason for this is that they will be most affected by energy price rise assuming that income does not rise at a similar rate. Further we can perhaps argue that households in higher income brackets should be able to upgrade their home to reduce fuel bills, especially given the large amount of discounted products, grants and loans currently available. Specific property types such as detached homes in rural areas which are off-gas grid are more expensive to treat but there are still some low cost measures that can help. Hence unless they are occupied by L3 households they are not included in the analysis below.

4 Key activities to address energy price impact

- 4.1 The importance of fuel poverty targets have been noted above. However another policy area has recently arisen which has included activities which as a by-product may assist L3 households – these are the climate change targets at Scottish, UK and EU level. The desire to reduce carbon emissions from the domestic sector requires households to improve the energy efficiency of their dwellings which should reduce the household’s fuel bills. Over the last 8 years there have been numerous schemes to assist households to reduce emissions and fuel bills. The logic model (Annex B) outlines many of these schemes alongside those driven by fuel poverty and identifies the likely impacts on the L3 households.
- 4.2 The key EU,UK and Scottish policy and programme activities identified have been grouped together for the purpose of the logic model. However it must be remembered that energy is a complex area and other policies and programmes will drive change.

KEY CURRENT EU and UK POLICY

Regulation

EU product standards for lighting and appliances

EU Requirement for Energy Performance Certificates (EPC) for prospective buyers and tenants

Fabric upgrades

Carbon Emissions Reduction Tariff (CERT)

Financial assistance

Winter fuel payment

Cold weather payment

Green Deal funding – new policy area with little detail available at this stage.

Energy price assistance

Social tariffs
Renewable tariffs
Prepayment cards

Information

Improved bill information
SMART meters

CURRENT SCOTTISH GOVERNMENT POLICY

Regulation

Building Standards for new homes and major conversion or refurbishment
New energy efficiency regulation for the domestic sector

Fabric upgrades

Scottish Housing Quality Standard (SHQS)
Home Insulation Scheme (HIS)
Energy Assistance Package (EAP)
Incentives for private landlords (LESA)

Financial assistance

Benefits checks through EAP

Information

ESSACs and LA schemes
SCN Learning Network

- 4.3 The identified short to medium term outcomes (1-5 years) to support households have been identified as:
- Outcome 1 - L3 households are able to enjoy adequate thermal comfort
 - Outcome 2 - Energy bills present less hardship to L3 households
 - Outcome 3 – There is increased understanding by L3 households of energy usage in the home
- 4.4 The identified long term (5-10 years) outcomes to support households have been identified as:
- Increased long term income for L3 households
 - Dwellings occupied by L3 households emit lower carbon emissions

5 Evidence of activity working to meet outcomes (see templates in Annex A)

Fitting insulation and other measures to improve energy efficiency and contribute to Outcome 1 'thermal comfort'

5.1 There is an established evidence base for the beneficial impact of fitting basic energy efficiency measures to a home in terms of reduction in energy used and therefore reduced fuel bills and reduced carbon emissions⁵. There is also a range of evidence on the impact of specific programmes in delivering those measures⁶. However there are areas where there is still some uncertainty:

- Whether fuel bills actually reduce or whether household choose to take additional thermal comfort, known as **rebound**. For all households it is usually assumed that around 15% of any saving in energy used is actually lost by households taking greater thermal comfort, for households in fuel poverty where additional heating is often required to reach an adequate level of thermal comfort, it is thought that this figure could be nearer 40%. This may well be similar for the L3 group⁷.
- The **cost effectiveness of upgrades**. This will be a key issue for L3 households who will not be able to invest in upgrades that do not pay back within a short timescale. Only virgin loft insulation and cavity wall insulation currently pays back within 2 years, although the vast majority of L3 households would be eligible to receive a wider range of measures free through the current supplier obligation (CERT) programme.
- Whether switching central heating systems will always lead to reduction in fuel bills. This is thought to be a problem where households currently use low levels of energy or use energy at off-peak times, then switch to a different source which places them on a different **tariff structure**. For example switching from night storage heaters to an air source heat pump might not lead to reduced bills because of the switch from a night-time to a day-time tariff⁸. Likewise switching from oil fired central heating system to an air source heat pump may not lead to lower bills if the household takes increased thermal comfort. This may be an issue for L3 group because of the prevalence of L3 in social housing where renewable systems may be chosen by social landlords in order to meet their duties to bring homes up to a Scottish Housing Quality Standard and reduce emissions.
- The **cost effectiveness of programmes**. HIS and EAP have been established to tackle fuel poverty and reduce carbon emissions and have

⁵ Scottish Government, 2009, Conserve and Save <http://www.scotland.gov.uk/Publications/2009/10/16124856/7> or WWF, 2009 How Low report http://assets.wwf.org.uk/downloads/how_low_report.pdf backed by considerable academic literature

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⁷ Cambridge Econometrics, 2010, Modelling price elasticity of demand and direct rebound effects, <http://www.scotland.gov.uk/Topics/Built-Environment/Housing/supply-demand/chma/marketcontextmaterials/DEMSCOTfuelpricemodelling>

⁸ Energy Savings Trust report Field trials for Heat Pumps, 2010

had many positive impacts, however they are in their 2nd year of operation and there are many lessons to be learnt in delivery. A new HIS is being piloted this year which is free to all. Various reports have considered local and centrally run programmes but there is currently no consensus on the optimum way forward. This is important as the spending review is likely to lead to an increased requirement to improve and streamline Scottish programmes and maximise their interaction with UK programmes.

- Around one in ten L3 households are **private tenants** which means they sometimes have less power over their energy circumstances. Landlords, because they do not live in the homes have less incentive to make improvements leaving the tenant with large bills. There are schemes available to encourage private landlords although there is no evidence currently available on the level of take-up. Tenants also tend to move home faster than owners meaning that they are often ineligible for programmes (such as the Energy Assistance Package which requires residence of at least 12 months).
- Most households are in the **social rented** sector where the SHQS should be ensuring moderate standards of energy efficiency. There are many aspects of good practice and innovation in the sector with different forms of cladding and insulation; innovative district heating and heat pump schemes. However there are still half of all social rented properties that fail the social housing standard on the energy efficiency criteria, which suggests that more can be done to dwellings to cut fuel bills for these households.
- For many households the package of required cost effective measures is well known and available from various programmes; however with **hard to treat**s, or expensive to treat building types there is no clear consensus on the technical solution required.

Provision of benefit checks and government payments to **increase income** and contribute to Outcome 2 to make Energy bills more affordable

- 5.2 The Scottish Government's Energy Assistance Package, which takes referrals from the area based Home insulation Scheme as well as through many other agencies including the EESAC network, provides a benefit check to households. Programme statistics are published on the website where it is clear that the programme does assist some households to increase their income by accessing the full range of benefits to which they are entitled. The latest figures (April 09 to Feb 10) suggest that around 9,300 people took up income maximisation referrals with 143 people found to be eligible for additional benefits, gaining an average additional £1,586 per annum.
- 5.3 The UK Government also has 2 specific financial policies for households to help with energy bills; the winter fuel payment and the cold weather payment. All pensioners over 60 are granted a winter fuel payment of £250 whilst over 80s receive £400 and in extreme winter conditions there is an

additional cold weather payment⁹. These payments will increase income to L3 households.

5.4 However there are a number of issues with the UKs winter fuel payment and cold weather payment when applied to households in Scotland:

- They are targeted at all older people rather than lower income households who may potentially be in greater need of assistance. Just over half of L3 households contain a pensioner, the rest do not get any help with winter fuel costs.
- They are received as an income rather than a specific reduction in fuel bills. Hence while raising income they may not be used in the way intended, that is to reduce fuel bills.
- They are paid in December rather than when households receive their largest quarterly bill in March.
- They do not take any account of regional differences in weather, so a household in Devon would receive exactly the same fuel payment as a household in Grampian with a much colder climate and longer heating season.
- The cold weather payment is based on average temperatures whereas household fuel bills are severely influenced by wind chill effects rather than absolute temperature.

5.5 There are also disbenefits from current policies that mean that while they improve a dwelling's energy efficiency they may reduce income for L3 households. The key UK policy to improve energy efficiency is CERT whereby energy suppliers earn carbon points for providing energy measures to homes. This policy has substantial impact to assist lower income households who may get the measure for free, however the picture is not simple when considered through a L3 lens:

- The cost of the CERT scheme (figures quoted vary from £38-£42 per bill per household) increases energy bills. Current analysis by DECC suggests that domestic retail gas prices are estimated to be 18% higher and retail electricity prices 33% higher in 2020 due to energy and climate change policies (compared to prices in 2020 without policies)¹⁰.
- The average SAP in Scotland is around 8 SAP points better than in England. Carbon points are therefore often higher for measures installed

⁹ There was media speculation that the age limit for winter fuel payments may raise to 70 and that the level of payment may be reduced from £250 to £200 per household for the youngest eligible, and from £400 to £300 for the over-80s in the UK Spending Review. However this did not happen. The cold weather payment is an additional £25 paid to eligible low income households when the average temperature is recorded as, or forecast to be, zero degrees Celsius or below over seven consecutive days during the period from 1 November to 31 March. Specified Meteorological Office weather stations are used to obtain this information.

¹⁰ http://www.decc.gov.uk/en/content/cms/what_we_do/uk_supply/markets/impacts/impacts.aspx

in England. If climate was taken into account in carbon calculations then Scotland would probably receive a larger share of CERT and specifically CERT priority offers.

- In addition work to increase energy efficiency in the social rented and private rented sector may lead to increased rents which will have a detrimental impact on income for L3 households. There is no clear evidence on this issue yet.

Policies and programmes to encourage switching utility provider and/or tariff to **reduce bills** and contribute to outcome 2 'Energy bills are more affordable'

- 5.6 In Scotland the Energy Assistance Package will help households think about switching provider or tariff to reduce their bills. However tariff structures themselves are set by Energy Supply Companies and regulated by OFGEM. It is not a devolved responsibility¹¹.
- 5.7 **Prepayment meters** tend to be more prevalent amongst lower income households because they assist with budgeting and prevent households running up large utility debts. Information from the Scottish House Condition Survey, 2008 show that 22% of L3 households use a pre-payment meter. In 2005 OFGEM consulted on pre-payment meters following a recommendation from the National Audit Office that pre payment meters should be provided as cost effectively as possible. It was estimated by Ofgem in 2008 that households on prepayment meters could pay up to £88 more per year than those on standard meters. New rules were put in place by Ofgem such that prices charged must reflect differences in cost of provision to the utility companies. It is not yet known the impact of this on pre-payment meters although there was initial negative media reactions from the National Housing Federation that prepayment meters remain over-priced¹².
- 5.8 In 2007 energy companies began to introduce a new **social tariff** for more vulnerable households. This aims to help some households reduce bills. For example the British Gas website suggests that *"the tariff will mean a vulnerable dual fuel customer with a prepayment meter can save 24.6% (an average of £285 per year). Those who pay by cash or cheque will be £245 better off each year, on average¹³"*. It is not yet known the full impact on this change although in the first year of the Energy Assistance Package of the 3,787 households referred for consideration on a social tariff, only 331

¹¹ Scottish Government may be able to take a leadership/influencing role to ensure that energy providers have clear understanding of the expectations that they will provide fair and affordable pricing policies.

¹² <http://news.bbc.co.uk/1/hi/business/8383837.stm>

¹³ <http://www.energychoices.co.uk/british-gas-launches-social-tariff.html>

households were moved to a social tariff with an average annual reduction of £127¹⁴.

- 5.9 Although energy companies are required by OFGEM to provide free or low cost energy efficiency improvements to lower income households (see above), this work is funded by a pro rata **increase to all fuel bills**. It is not yet clearly evidenced that the savings in fuel bills due to energy efficiency measures will always outweigh the losses due to increased bill prices for L3 households.
- 5.10 Likewise some of the programmes to improve energy measures such as the Scottish Housing Quality Standard for social housing, changes to Building Regulations for new housing and improvements to homes by private landlords may increase the **cost of the housing product**. For L3 households that are tenants, again it is not clearly evidenced that the savings in fuel bills due to better energy efficiency measures will always outweigh the losses that might be incurred due to increased rents for L3 households.

Policies and programmes to advise households so that they better understand energy usage in the home and contribute to outcome 3 'Increased understanding of energy usage in home'

- 5.11 As noted above the development of policies and programmes based on fuel poverty, layered by policies and programmes based around carbon emissions has led to a plethora of advice and information agencies at local regional and national level. An independent review of energy efficiency found that the landscape for delivering advice was in need of simplification¹⁵.
- 5.12 In response, the Scottish Government established the Energy Saving Scotland advice network, providing a '**one-stop-shop**' for advice on a range of issues, including energy efficiency, microgeneration, personal transport and fuel poverty through the Energy Assistance Package. The network received around £4 million from the Scottish Government for advice provision in 2009/10, and plays a key role in helping to increase Scotland's share of CERT investment. It uses the single Energy Saving Scotland brand which aim to help to develop long-term relationships with consumers. In addition to this there is a range of locally run schemes.
- 5.13 There has been no further evaluation of how the ESSac network is settling down and whether it is now providing a clear and simple route to advice. There is some evidence that advice is generally more effective if given face to

¹⁴ Social tariffs are based on current bills so if a lower income household under-heats their home they may not be eligible for a social tariff. If the tariff was based on a standard heating regime more lower income households may become eligible.

¹⁵ Halcrow, 2008 Review of energy efficiency and microgeneration support in Scotland <http://www.scotland.gov.uk/Publications/2008/05/30140737/0>

face and by a known and trusted local source¹⁶. So there is a clear balance to be reached here between a suitably clear simple picture for low income households to navigate, and finding an approach where households are comfortable in approaching and acting on advice given. .

- 5.14 Research consistently reports that most people are **unaware of how much energy they use**, what tariff they are on (82% do not know this) (EST, Green Barometer 4, March 2008) and how they can reduce their personal carbon footprint. A literature review commissioned by Defra focuses on the effectiveness of feedback to householders, and specifically the literature on metering, billing and displays (Darby, 2006). “Domestic energy consumption is still largely invisible to millions of users and this is a prime cause of much wastage” (p17). In this review, Darby distinguishes between two types of feedback: direct and indirect, where the former is energy consumption information that is provided immediately at point of usage (e.g. a display monitor or ‘smart meter’), and the latter feedback that is processed and issued to the user after energy use (e.g. via billing). Approximately 85% of electricity consumers and 90% of gas consumers in the UK pay for their energy in arrears (NEA, 2004 cited in Darby, 2006). The minimum requirement for a meter reading in the UK is every 2 years, so most bills are based on estimated consumption. Most action that could influence feedback is in reserved areas.
- 5.15 Overall, the Defra review makes a strong case for feedback as an effective and necessary tool in reducing domestic energy consumption. It suggests that sustained behaviour change is likely to be most effective where immediate (direct) feedback e.g. via a smart meter display, is combined with frequent, accurate billing (a form of indirect feedback). The report concludes that smart metering has the potential to deliver energy savings quickly and at relatively low cost. These recommendations appear to be supported by other evidence sources which consistently report the proven effectiveness of feedback in encouraging consumers to save energy (e.g. Brandon & Lewis, 1999; Faruqui et al., 2009; Wood & Newborough, 2003). However more recent findings show that smart meters may not be as effective in reducing energy consumption as originally envisaged.
- 5.16 Two scientific papers recently published in the Building Research & Information journal, question earlier findings and show that smart metering does not automatically achieve a significant reduction in energy demand. In her paper, 'Smart metering: what potential for householder engagement?', Dr Sarah Darby (Environmental Change Institute, University of Oxford) suggests that there has to be a determined focus on designing customer interfaces for ease of understanding, and on guiding occupants towards

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appropriate action. Another study found that for most groups of people, any benefits from Smart meters were lost over time¹⁷.

- 5.17 The UK Government is requiring a programme of rolling-out smart meters across all homes in the UK as one way to try to provide households with greater feedback. This is in response to the *EU Energy End-use Efficiency and Energy Services Directive (2005)* which requires improved information for energy consumers¹⁸. There are also efforts to improve billing information for households. Some evidence suggests that savings from direct feedback could range from 5-15%, with savings from simple (electricity) displays typically in the order of 10%. However evidence also suggests that high energy users appear to be more likely to respond to direct feedback than lower users. Energy usage of the L3 group is little understood .
- 5.18 However as well as people not understanding energy usage in the home they may not know how to reduce energy usage. There is evidence¹⁹ that many households do not know how to manage their heating, especially if they are using newer forms of heating such as heat pumps.

Summary

6. As noted above there are many schemes in place to support households who may be facing hardship due to energy price changes. However many schemes have been developed from the perspective of reducing carbon emissions or reducing fuel poverty as well as assisting the range of lower income households. This paper has considered these activities through the specific lens of L3 households and has identified several challenging areas.
- How to make carbon saving energy efficiency improvements without further driving up fuel bills, rent or other payments for lower income households.
 - How to provide a clear path to advice which is also accessed and trusted by lower income and/or vulnerable households.
 - How to ensure L3 households in Scotland are treated equitably given the climatic differences to the UK.
 - How to ensure that there are clear expectation on energy suppliers to provide fair and affordable energy prices to Scottish households
 - How to ensure that L3 households understand how to operate their heating systems to provide them with adequate thermal comfort at lowest cost.

¹⁷ Relevant articles can be found at

<http://www.informaworld.com/smpp/title~content=g926280309~db=all>

¹⁸ See Articles 11 and 13 which promote improved metering and informative billing that provide actual energy consumption and, where appropriate, comparisons of consumption with previous years and with (other) benchmarked energy users.

¹⁹ <http://www.energysavingtrust.org.uk/Generate-your-own-energy/Heat-pump-field-trial>

ANNEX A – ACTIVITY TEMPLATES

REGULATION

| | |
|--|--|
| Activity | Regulation - Building Standards for new homes and major refurbishment or conversion |
| Description | Sets the standard that all homes should comply with. New standards were agreed in 2010 and further new standards will be considered in 2013 and 2016 in line with the Sullivan Report which set a road map for sustainable development. |
| Action | Compliance standards for housing when newly built or materially changed |
| Effect Positive and negative impact on L3 group | <p>Most L3 group will not be buying a new owner occupied home.</p> <p>The standards will improve the quality of new homes built in the social rented sector but numbers of new build are such that this will have limited impact on the group.</p> <p>For households that do live in a new social rented home the energy efficiency standard should be high enough to reduce fuel bills significantly.</p> <p>Increasing standards also increases costs of dwellings. Building Standards estimate that the 2010 standards cost £4,000 on average. This will reduce numbers of new social homes from a fixed budget</p> |
| Result | Beneficial for a few L3 households in new homes where will reduce fuel bills and increase disposable income |
| Short term Outcome | For small number of households Reduction in fuel bills Increased thermal warmth |
| Long term outcome | Reduction in long term poverty |

| | |
|--|---|
| Activity | Regulation – Climate Change Act proposed new regulation for energy efficiency of homes |
| Description | The Climate Change Act requires the Scottish Government to bring forward regulation to enforce energy efficiency upgrades. The nature and shape of this regulation will be developed over the next 2 years. |
| Action | Compliance will improve energy standards in homes but shape of regulation is not yet decided. |
| Effect Positive and negative impact on L3 group | <p>The standards could force improvements in quality of homes in the private rented sector which would influence some L3 households (around 9% live in the sector).</p> <p>Could have negative impact on owners within the L3</p> |

| | |
|--|---|
| | group if they are required to fund upgrades |
| Result Which working well, which not so well | For some households this should help reduce fuel bills and increase disposable income |
| Short term Outcome | For small number of households Reduction in fuel bills Increased thermal warmth |
| Long term outcome | Reduction in long term poverty |

POLICY AND PROGRAMMES TO PROMOTE FABRIC UPGRADES

| | |
|--|--|
| Activity | Scottish Housing Quality Standard |
| Description | Standard established for the social sector to meet where practicable by 2015 |
| Action | Compliance with quality standard for all social rented homes |
| Effect Positive and negative impact | Encourage planned improvements in the stock. Improvements may increase rents in some cases |
| Result | For households in the social rented sector whose homes are improved (50% of L3 live in this sector and 50% of homes currently not up to standard) this should help reduce fuel bills and increase disposable income. However it will depend whether social landlords increase rents in order to do the improvements. |
| Short term outcome | For around one quarter of L3 households Reduction in fuel bills Increased thermal comfort |
| Long term outcome | Reduction in long term poverty Reduction in carbon emissions |

| | |
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| Activity | Energy Assistance Package |
| Description | <p>Scottish Government has more closely co-ordinated its fuel poverty and energy efficiency programmes through the launching of its new four-stage Energy Assistance Package. As recommended by the Fuel Poverty Forum, a cross-sectoral group of stakeholders, this aims to help more households, and focus enhanced measures on the least energy efficient homes, lived in by the most fuel poor households. Current figures suggest that as of Feb 2010 around 11,000 households had accessed the package in 2009/10, with around 1,600 people referred on for benefit and tariff checks at Stage 2; 682 referred on for cavity and loft insulation through CERT at Stage 3; and 2,500 referred on for more enhanced energy efficiency measures at Stage 4. Stage 4 focuses on those in private sector homes who are most affected by fuel poverty and have the most energy inefficient homes. These are not only expensive to heat, but would have a higher carbon footprint if the householder could afford to pay the bills. Delivery will be assessed in Summer 2010, with adjustments made for subsequent year.</p> |
| Action | Households checked for eligibility and then offered energy advice at stage 1, tariff and benefit checks at stage 2, loft and cavity insulation at stage 3 and if eligible more enhanced measures at stage 4. |
| Effect Positive and negative impact | Programme is targeted specifically at lower income households and all aspects should have a positive impact on participating households. The EAP is in its second year of operation with published statistics available on the Energy Savings Trust website. One area which has been highlighted is the linkage between EAP, HIS and CERT |
| Expected Result | <p>Increased income through benefit checks</p> <p>Reduced fuel bills through better tariffs</p> <p>Reduced fuel bills through more energy efficient homes</p> <p>Increased economic activity if services are not displaced?</p> |
| Short term outcome | <p>Reduction in fuel bills</p> <p>Increased thermal comfort</p> |
| Long term outcome | <p>Reduction in long term poverty</p> <p>Reduction in carbon emissions</p> |

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| Activity | Home Insulation Scheme |
| Description | The area-based Home Insulation Scheme (HIS) is being supported with £15 million funding from Scottish Government funds, with matching funds from other sources, including energy companies, local authorities, housing associations and private householders. The scheme aims to improve the energy efficiency of houses through an intensive area-based approach to promoting and installing insulation and other energy saving measures in homes within a defined area. This area-based approach has been found to be effective in other schemes. Up to 400,000 households will be offered advice and assistance on energy efficiency in the first 2 phases, with many going on to receive the energy efficiency measures on offer, mostly loft and cavity wall insulation. The scheme will be administered by the Energy Saving Trust. In the first year it will operate in parts of 10 local authority areas representing a mix of geographic locations across Scotland, selected on the basis of bids invited from local authorities. These were assessed on the basis of criteria agreed with COSLA, including factors such as levels of fuel poverty and potential for emission reductions and uptake of measures. |
| Action | <p>The scheme is area based. Trained assessors knock on doors in a local area to offer energy checks and if the household is interested refer them for insulation measures.</p> <p>Insulation is free of charge for priority groups. The vast majority of L3 that are not in social rented housing should qualify for free insulation.</p> <p>Households that are likely to be priority groups are referred from HIS to EAP where they get a more holistic service.</p> |
| Effect Positive and negative impact on L3 group | <p>Will contact more households and make them aware of offers available.</p> <p>Should increase referrals to EAP.</p> <p>Still may not entice private landlords to improve their stock given that the cost will fall to them and the benefits to the tenant</p> |
| Result | For households who receive insulation this should help reduce fuel bills and increase disposable income |
| Short term Outcome | Reduction in fuel bills Increased thermal comfort |
| Long term outcome | Reduction in long term poverty Reduction in carbon emissions |

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| Activity | CERT (UK GOVERNMENT POLICY BUT INCLUDED BECAUSE OF ITS LINKS TO HIS AND EAP) |
| Description | Obligation of large electricity and gas suppliers to achieve a specified amount of carbon savings across homes in Great Britain. The scheme is set up to be as cost effective as possible because essentially it is paid for through household bills (average around £38 increase per bill). 40% of all measures must be targeted at priority groups that is low income households and households containing a person aged over 70. |
| Action | Energy suppliers required to reach a specified carbon emissions reduction by installing insulation and other measures in homes. |
| Effect Positive and negative impact | Has led to improved rate of take-up of loft and cavity wall insulation at cheaper rates than available before. This is a cost effective measure and will reduce fuel bills. This has been accompanied by an increase in fuel bills. Uptake in Scotland is lower than for the rest of the UK. |
| Effect Main and other beneficiaries | All households can benefit from CERT although it is more difficult for private tenants because they will have to get owners agreement. Half of households in L3 are in the social rented sector which are ineligible for CERT (CHECK) |
| Result | CERT data suggests that in densely populated areas where there is an easy to insulate built form CERT works well. However rates have been much lower in Scotland due to the number of flats, hard to treat properties and remote communities. Numbers in the private rented sector are also not known. The method for carbon counting does not take into account weather so there is no incentive to make considerable efforts in remoter areas of Scotland. |
| Evidence | EOIN LEES evaluation provided evidence on scale of upgrades. Further data collection is ongoing by EST but has not yet been published. It is thought that Scotland remains well below pro rata. Where measures are fitted there is good evidence that they will reduce the heating load required within a dwelling (reference DEMScot) and therefore reduce fuel bills. However this assumes that households continue to heat their home to a standard rate and do not take additional thermal comfort. |
| Short term outcome | For priority households More thermal comfort Cheaper fuel bills |
| Long term outcome | Reduced poverty Reduced carbon emissions |

POLICY AND PROGRAMMES TO PROMOTE ENERGY ADVICE AND OTHER RELATED ASSISTANCE

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| Activity | Provision of advice through ESSacs |
| Description | To provide advice to households to help households improve the energy efficiency of their home, access grants and loans and seek cheaper fuel bills through fuel switching etc. |
| Theory of Change | Giving households information and advice will help them to change their behaviour and reduce energy usage. |
| Positive and negative impact | Should assist L3 households to access support, primarily EAP, and receive information to change their energy behaviours. However there is little evidence that such action leads to reduction in energy usage. In general very difficult to assess. |
| Result | Not known |
| Short term Outcome | |
| Long term outcome | |

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| Activity | SCN Learning network |
| Description | Online network to exchange best practice and lessons learnt when trying to build new or retrofit existing social housing. |
| Theory of Change | To disseminate information particularly to social ,landlords on ways to improve the energy efficiency of their stock. |
| Positive and negative impact | Should assist landlords in new building and refurbishment, which may assist some L3 households, but very difficult to make a quantitative assessment. |
| Result | Not known |
| Short term Outcome | |
| Long term outcome | |

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| Activity | EPC |
| Description | Energy Performance Certificates (EPC) were introduced in May 2007 for new buildings as part of the building warrant process; in December 2008 accompanying the Home Report for sales of existing dwellings; and from January 2009 for all socially or privately rented new tenancies. EPCs fulfil a requirement of the Energy Performance of Buildings Directive for which the European Commission has now consulted on proposals for a recast. The EPC provides residents with information on energy rating of their home and average energy bills in their |

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| | home so that consumers can include this in the moving decision. |
| Action | Provides households with information on energy performance and likely energy bills |
| Effect Positive and negative impact | Aim is to assist choice by households when buying or renting. However given that half of L3s are in the social rented sector where there is very limited choice because of the lack of stock, and the rest will probably not have enough money to turn down housing on the basis of energy alone it is unlikely to have much impact for this group. |
| Result | Raised awareness of energy performance but probably a limited impact for L3 households |
| Short term outcome | If EPC helps household choose a better rated home then Improved thermal warmth Lower fuel bills |
| Long term outcome | |

ANNEX B – LOGIC MODEL

SITUATION: SUMMER 2010 – Many households in Scotland remain living in fuel poverty and rising fuel prices will only exacerbate this situation for those on lower incomes. Scotland has made, and can continue to make significant difference to the energy efficiency of dwellings but has less scope to impact either incomes or fuel prices.

