

# Fuel Poverty- A Connected Solution



**The Energy & Utilities Alliance**  
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Fuel Poverty is a problem policy makers in the UK have, to date been unable to solve or find an effective policy mechanism. For the last two decades policies have been developed and implemented to reduce or eliminate fuel poverty. Yet the rate of fuel poverty is still unacceptably high and estimates are that it could take decades to address.

Those at most risk of being trapped by fuel poverty are not just the elderly or those in absolute poverty. Our analysis shows that families with children or who may be looking after an elderly relative, who rent or own a modest home and have a low to average income are equally as likely to be in fuel poverty.

Our report outlines how by simplifying government processes these households could be saving approximately £900 a year on their energy bills. Additionally this would not necessitate any government spending or new policies.

We have identified three changes to government policy that would help take homes out of fuel poverty:

- 1. Amend the Energy Company Obligation scheme to focus on first time central heating systems for the fuel poor. This could save 139,130 homes a minimum of £922 per year<sup>1</sup>**
- 3. Fuel poverty schemes would be more effective if they operate on a street by street approach**
- 4. Better cross departmental data sharing to help identify fuel poor households**

These changes would require a rethink of current initiatives however we believe this is necessary because previous schemes have not been effective in tackling fuel poverty.

This has not been helped by the frequently changing objectives and measurements. England, Scotland and Wales all use different methods to calculate fuel poverty and all have different schemes to tackle it. England has rolled out a number variants based on energy suppliers providing funding for energy efficiency work, whilst the Scottish and Welsh Governments have opted to provide more direct Government money.

Analysis of these approaches shows that there is no one silver bullet and none of the schemes introduced to date have been able to demonstrate an effective ability to tackle the problem.

One of the obvious difficulties with tackling fuel poverty is the link to absolute poverty. Our analysis in this report shows that being in poverty is the single biggest link to being in fuel poverty. Obviously energy policy is not designed to tackle overall poverty in society and nor will it ever be able to do so.

With this in mind fuel poverty policy should be designed to maximise returns. What measures can be installed into people's homes that provides the biggest reductions in their energy bills.

This report will show that the simple act of connecting homes to the existing gas grid can reduce average energy bills by £922 for homes currently using electricity as their principal means of heating. This can be delivered cost effectively and could provide upwards of two million homes with affordable heating.

However this would require joined up energy policy. Currently the RIIO framework only allows for up to 91,203 homes to be connected in the eight years of the settlement, with four years still to run. RIIO does not allow companies to help residents with the cost of a new central heating system, which a home in fuel poverty is unlikely to be able to afford.

Therefore we are asking that the new ECO 3 scheme due to start in 2018 obligates suppliers to fund the installation of a complete new heating system on those newly connected homes. A variation of this was trialled by the limited Central Heating Fund.

**EUA believes that by taking these two simple steps the number of fuel poor homes could be reduced by approximately half a million.**

This report will analyse the current status of fuel poverty legislation, in particular the differing calculation methodologies that are in use. It will look at the underlying causes of fuel poverty and likely indicators. It will then outline cost effective solutions to tackle this problem.

We have included a number of case studies of cities in England that clearly show that there are many inner city homes that are within 23 meters of the gas main and yet are still using expensive electric heating for their heating.

Finally we will detail our recommendations to government on how we believe energy policy should be designed in order to bring those with some of the highest bills out of fuel poverty.

And why is this action necessary? Because in one of the 6 richest countries in the world it is unacceptable that 1,500 people die every day in the winter months because of a cold home, and it is even more unacceptable that this occurs even though solutions are there to prevent this. In 2014/15 with a mean temperature of 4.8°C this led to an estimated preventable 43,850 deaths linked to cold homes. Policies aimed at tackling fuel poverty are clearly not working effectively enough, more needs to be done, but it needs to be effective and to address those most at need, not just the easiest and cheapest to help. We believe this report offers a route to better policy making.

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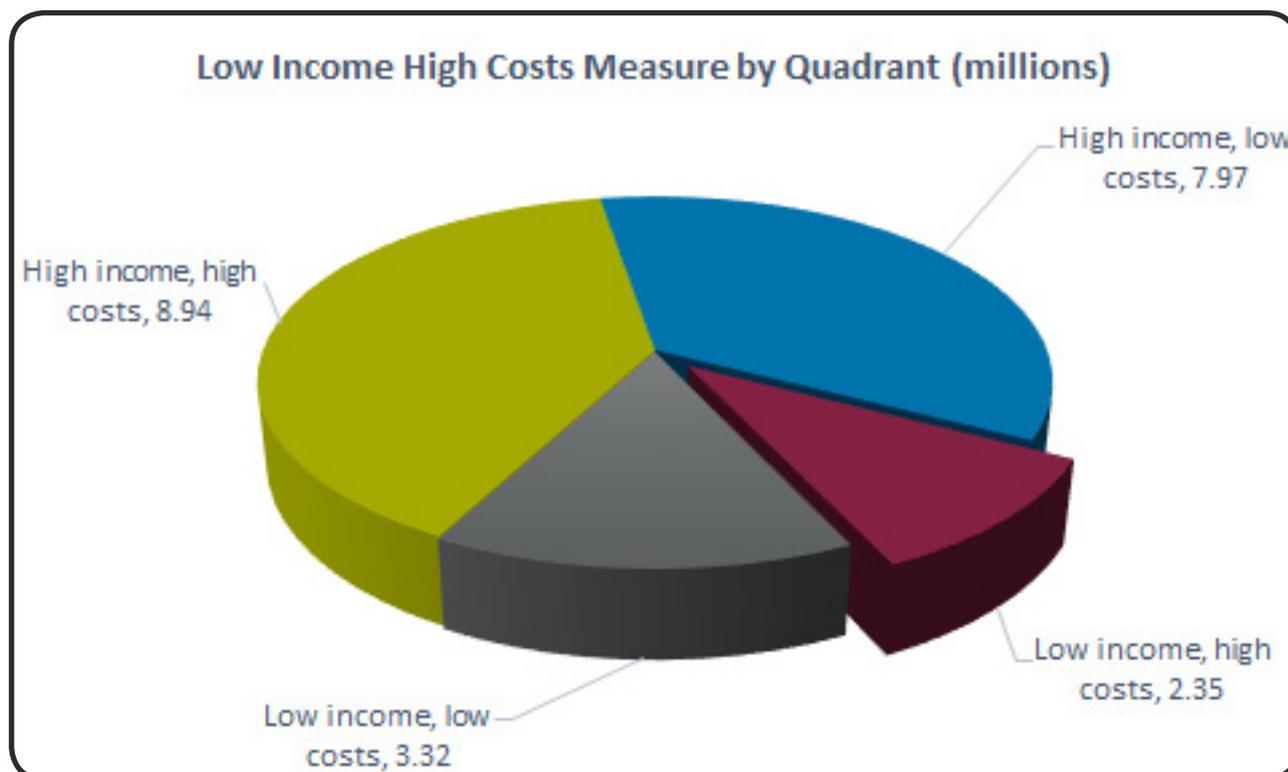
Before exploring some of the drivers of fuel poverty, it is first necessary to understand fully what is meant when somebody is deemed to suffer from fuel poverty. An official definition of “fuel poverty” was set out in the 2000 Warm Homes and Energy Conservation Act:

“For the purposes of this Act, a person is regarded to be living “in fuel poverty” if he is a member of a household living on a lower income in a home which cannot be kept warm at reasonable cost”

Under the “Low Income High Costs” (LIHC) measure, a household is deemed to be in fuel poverty if two requirements are met [reference – Fuel Poverty Methodology Handbook 2016]:

- the household has required (modelled) fuel costs that are greater than national median level
- if they were to spend that amount, their residual income would be below the official poverty line, which is defined as 60% of median “equivalised” income

Under the 10% indicator of fuel poverty, a household is deemed to be fuel poor if their required fuel costs are greater than 10% of their income. The pie chart below shows the number of households in the UK that fall into each “quadrant” of the LIHC measure:



Before the adoption of the LIHC measure in England, fuel poverty was estimated using the “10% indicator”, whereby a household was considered to be in fuel poverty if it spent more than 10% of its income on meeting its energy requirements.

Although intuitively straightforward, the 10% indicator has a number of drawbacks. Firstly, despite a veneer of objectivity, the 10% ratio is an arbitrarily defined threshold.

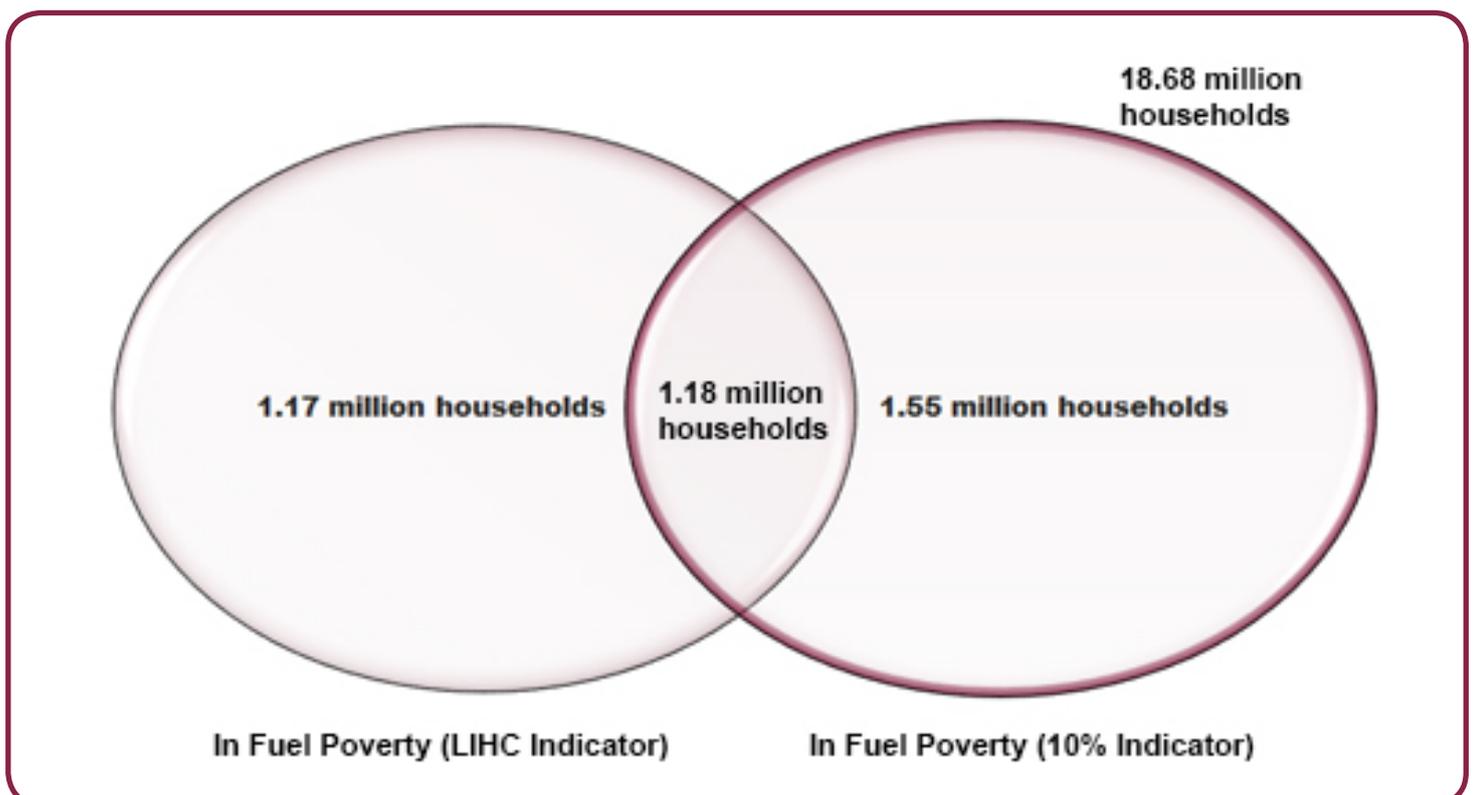
According to the 2011 Hills Interim Report, the 10% threshold is derived from a study that demonstrated “that in 1988 the median household spent 5 per cent of its net income on fuel and that twice this ratio might be taken as being ‘unreasonable.’” Secondly, under the 10% rule the classification of a household as fuel poor is sensitive to changes in energy prices. Between 1996 and 2015, annual domestic gas price growth ranged between -4.6% and 27.4%, while electricity prices varied from -7.2% to 18.2%. Allowing such volatility to affect the classification of the fuel poor is highly undesirable.

Finally, the 10% measure does not take into account household income. As a result, it is almost certain that some households with relatively high incomes will be classified as fuel poor – this is clearly at odds with the definition of fuel poverty that was expounded in the 2000 WHECA.

The LIHC measure goes a long way to correcting some of the deficiencies of the previous indicator: it excludes households with relatively high incomes; it is not sensitive to short term movements in energy prices; and it is objective. As a consequence, one of the primary recommendations of the 2012 Hills Review was a move away from the 10% indicator and the subsequent adoption of the LIHC measure.

However, this recommendation was only implemented in England. In Scotland and Wales, the extent of fuel poverty is still estimated using the 10% indicator. In order to understand why this is problematic, it is worth exploring the relationship between these two indicators. In 2013 (the most recent year for which detailed data are available), a total of 2.35 million households were estimated to be in fuel poverty under the LIHC measure.

Using the 10% ratio, this figure rises to 2.73 million. Given that these two indicators purport to measure the same phenomenon, it would be logical to presume that the intersection – i.e. households deemed to be in fuel poverty under the LIHC measure and the 10% indicator – would be large. However, the data show that only 1.18 million households fall into both categories. This is shown below:



Clearly, the measurement of fuel poverty that is used makes a substantial difference to which households are considered to be fuel poor.

Given the importance of reducing fuel poverty, a lack of consistency between England and Scotland and Wales seems unwise. **EUA recommends that the devolved administrations adopt the LIHC measure in order to allow for meaningful comparisons and consistent policy making across the board.**

Policies designed to tackle fuel poverty occupy such a prominent place in any Government's energy agenda precisely because of the copious negative consequences that it causes. In recent years, the concept of many thousands of families choosing whether to "heat or eat" has entered the national press and with it mainstream political discourse.

Whilst many of the causes and effects of fuel poverty can be said to be similar or identical to poverty more generally, there are a number of negative outcomes which are unique to fuel poverty, particularly in the field of health. This is due to the fact that a cold home can easily exacerbate pre-existing health complications, often leading to more chronic or unremitting conditions as well as preventable deaths.

At no time of the year is this effect more prominent than in the winter months. The latest figures from the Office for National Statistics show that an inability of households to adequately heat their homes lead to an estimated 24,300 preventable deaths in the winter months of 2014 and 2015<sup>2</sup>. This equates to a more than 1,500 deaths per day, a figure which remains largely unchanged from statistics dating back nearly 20 years. The figures from the winter of 2014/15 are more staggering; a particularly cold winter with a mean temperature of 4.8°C led to an estimated 43,850 deaths, the highest figure since 1999.

New trends in preventable winter deaths have also begun to develop in recent years. Whilst the vast majority of these winter deaths occur amongst the elderly, the latest figures indicate that preventable winter deaths are increasing in those under the age of 65 whilst decreasing amongst those aged 85 and over. Additionally, the number of preventable deaths is increasing in the later winter months of January and February whilst also extending into March and April, indicating that especially cold weather is not the only factor in causing these deaths. In 2016, preventable winter deaths in March were higher than in February whilst April's figures were higher than those of December 2015.

The most prominent underlying cause of preventable winter deaths remains respiratory illnesses. This category also showed there were 41% more deaths from respiratory deaths in the winter months of 2015/16 than there were in non-winter months; the figure for 2014/15 was far higher at 78%. Respiratory illnesses are widely known to be exacerbated by excessively cold living conditions which is one of the primary reasons that the elderly, who are one of the groups most susceptible to fuel poverty, are particularly affected.

Another factor to be considered is that it is not only short-term, aggressive illnesses such as influenza, aggravated by cold homes, which contribute to preventable deaths. Long-term, chronic conditions are also of particular concern given the weakening effect they typically have on sufferers. One such condition is chronic obstructive pulmonary disease (COPD), a serious respiratory condition with over 3 million sufferers and 25,000 associated premature deaths a year which is made worse by living in cold homes<sup>3</sup>.

A study and pilot scheme entitled 'Boilers on Prescription' recently conducted in Sunderland by the Gentoo group and local Clinical Commissioning Groups found that it is possible to simultaneously

2 Office of National Statistics Excess winter mortality in England and Wales: 2015/16 (provisional) and 2014/15 (final) (<http://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/deaths/bulletins/excesswintermortalityinenglandandwales/2015to2016provisionaland2014to2015final>)

3 NHS information page on COPD (<http://www.nhs.uk/conditions/chronic-obstructive-pulmonary-disease/Pages/Introduction.aspx>)

improve the health outcomes of patients and address their fuel poverty whilst also reducing their long-term treatment costs to NHS. The group worked with sufferers of COPD and their families by monitoring their interactions with NHS services whilst improving the energy efficiency of their homes as well as their central heating system; the total cost of the improvements was, on average, £5000.

The initial results from the first year of the pilot scheme were very encouraging: GP appointments were reduced by 60%, outpatient appointments by 22% and attendances at A&E by 30%. This could represent enormous cost savings for the NHS if replicated on a large scale. Each single hospital emergency admission costs the NHS £2500, each GP appointment costs £45 and each prescription costs, on average, £41.35. The total annual cost of COPD is estimated to be in excess of £800 million. At the same time, the home improvements made during the pilot scheme demonstrated carbon reductions of around 25% emissions per property and saved each household around £125 per annum on their fuel bill.

Given the sheer number of people in Britain living with debilitating conditions that are made worse by living in fuel poverty, and consequently a cold home, it is surprising that we are yet to see a Government policy which recognises the link between the two. Instead, it is left to energy companies to pave the way with schemes such as npower's Health Through Warmth initiative under which anyone can refer someone with a long-term illness made worse by living in a cold home that cannot afford to repair or replace their heating system <sup>4</sup>.

**Recommendation: The concept of 'heating on prescription' should be adopted as a policy by the government, backed by funding for a new heating system to those in need.**

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<sup>4</sup> npower Health Through Warmth scheme ([http://www.npower.com/health\\_through\\_warmth](http://www.npower.com/health_through_warmth))

Fuel poverty is a major political and social issue which has permeated the agendas of successive Governments. Consequently, there have been a number of schemes in recent years aimed at reducing fuel poverty using various mechanisms:

## Warm Front Scheme

The Warm Front Scheme ran until January 2013 and offered households grants towards the cost of various domestic energy efficiency measures. Eligible measures included insulation, draught-proofing as well as improvements to gas, electric or oil central heating. Up to £3,500 was available per household, however this limit was raised to £6,000 for homes that required a connection to the gas grid. Grant payments were given directly to the contractor or tradesperson who carried out the work as opposed to householders. The total budget for Warm Front in its final year was £100 million.

As with many schemes targeted at fuel poor households, the scheme had several prerequisites. Applicants had to own their own home or privately rent and have the permission of their landlord, have a poorly insulated home or an inadequate central heating system as well as be in receipt of certain income-defined benefits.

## Affordable Warmth Scheme

The Affordable Warmth Scheme (AWS) was devised as a replacement for Warm Front and began in early 2013<sup>5</sup>. It is the customer-facing brand of the Home Heating Cost Reduction Obligation, one of the three targets of the Energy Companies Obligation (ECO). By bringing the scheme under the ECO umbrella, the Government ensured that the funding and responsibility for identifying and vetting applicants would be delivered by energy companies.

The concept behind the AWS is much the same as Warm Front: making energy saving home improvements such as new boilers and insulation available to people on low incomes and in receipt of certain benefits. The range of eligible measures was reduced to just new boilers, loft insulation and cavity wall insulation.

## Central Heating Fund

The Central Heating Fund (CHF) was the opposite of the Affordable Warmth Scheme in that only local authorities can apply for funding under it<sup>6</sup>. Local authorities are able to pass on funding to other social landlords and housing associations. The primary target of the scheme was fuel poor, off-gas grid households who needed a first time central heating system.

The main focus of allocated funds under the CHF is gaining the maximum bill savings per pound spent as well as the amount spent per installation compared with the Government's fuel poverty strategy. Additional considerations include the strength of local delivery plans, inclusion of rural properties and supporting households' use of new central heating systems.

Households identified by local authorities could not already have a mains gas central heating system being used as their primary heating source. An area-based approach to targeting was possible as long as councils could ensure that the households could be evidenced as being in fuel poverty in line with the Government's measure or their permitted proxy, the ECO AWS group.

5 Affordable Warmth Scheme FAQs (<http://www.affordablewarmthgrants.co.uk/questions-about-affordable-warmth>)

6 BEIS Central Heating Fund FAQs (<https://www.gov.uk/government/publications/central-heating-fund-local-authority-guidance/central-heating-fund-faqs>)

The range of eligible measures were much wider than the AWS as all parts of the heating system used to generate or distribute heat were eligible for funding including the heat source, pipework and radiators. Insulation was not eligible under the CHF as the Government anticipated that other funding streams, such as the AWS, would be used for this instead.

Any policy designed to combat fuel poverty should result from a firm understanding of its causes. The focus of this report is the relationship between a number of household and dwelling characteristics and fuel poverty as estimated by the LIHC measure. However, for completeness, the relationship between these characteristics and a number of alternative measures is also explored. In addition to the LIHC indicator, the following measures are included:

- 10% ratio (defined in the previous section).
- The 10% and LIHC intersection – households defined as fuel poor by both the LIHC and 10% measures.
- Households with incomes less than the national median who spend more than 10% of their income on energy.
- Households in poverty living in a dwelling with a SAP rating less than 60.

This analysis uses a dataset constructed by matching observations in the English Housing Survey dataset with characteristics from the detailed Fuel Poverty dataset published by DBEIS.

## Risk Ratios

Risk ratios are used in order to investigate the strength of the relationship between a variety of household and dwelling characteristics and fuel poverty.

Risk ratios express the probability that an “event” occurs for a particular group relative to the probability that it occurs in a comparison group. For instance, the probability that a household off the gas grid is in fuel poverty, relative to the probability that a household on the gas grid is in fuel poverty.

A risk ratio greater than 1 indicates that a household in a particular category is at greater risk of being in fuel poverty than other households. Conversely, a risk ratio less than 1 suggests that a household in a particular category is at less risk of being in fuel poverty than other households.

For ease of comparison, a colour gradient has been applied to the risk ratios in the following tables. Dark red shading indicates that a particular characteristic is strongly associated with being in fuel poverty, while a dark green shading indicates that fuel poverty is less frequently found in households exhibit a particular trait.

## Dwelling Characteristics

The following table illustrates the relationship between a number of dwelling characteristics and the Low Income High Costs measure of fuel poverty (as well as a range of other measures).

As a synthesis of a variety of household characteristics, the Energy Efficiency Bands provide an overview of the likelihood of being in fuel poverty. However, it is useful to dig a little deeper into the data and investigate the relationship between fuel poverty and some of the constituent parts of the Energy Efficiency Bands.

		LIHC	10% Ratio	LIHC 10% Ratio	Low Income and 10% Ratio	Poverty and SAP <60
<b>Energy Efficiency Band</b>	A/B	0.00	0.36	0.00	0.45	0.00
	C	0.16	0.33	0.07	0.40	0.00
	D	0.77	0.64	0.41	0.79	0.89
	E	2.47	1.80	5.32	1.66	2.79
	F	2.17	3.51	3.33	2.44	1.77
	G	3.03	5.01	5.29	3.72	2.59
<b>Dwelling Age</b>	pre 1919	2.23	2.03	2.03	1.81	2.54
	1919-1944	1.26	1.03	1.03	1.04	1.40
	1945-1964	0.92	0.96	0.96	1.04	0.80
	1965-1980	0.75	0.82	0.82	0.84	0.63
	post 1980	0.36	0.49	0.49	0.53	0.33
<b>Dwelling Type</b>	End terrace	1.71	1.41	1.67	1.38	1.73
	Mid terrace	1.35	1.00	1.32	1.09	1.35
	Semi detached	1.08	0.76	0.94	0.75	0.88
	Detached	0.83	0.95	0.92	0.71	0.43
	Bungalow	0.58	1.17	0.76	1.05	0.69
	Converted flat	1.45	1.70	1.76	1.91	2.71
	Low rise flat	0.47	0.85	0.40	1.02	0.78
	High rise flat	0.61	1.13	0.77	1.41	0.93
<b>Boiler Type</b>	No boiler	1.33	2.10	2.01	2.02	1.75
	Non-condensing boiler	1.43	1.39	1.55	1.28	1.42
	Condensing boiler	0.62	0.48	0.43	0.54	0.53
<b>Grid Status</b>	Off grid	1.49	2.09	2.20	1.83	1.58
	On grid	0.67	0.48	0.45	0.55	0.63
<b>Wall type</b>	Cavity with insulation	0.44	0.61	0.42	0.67	0.33
	Cavity uninsulated	1.08	0.89	0.92	0.88	0.99
	Solid with insulation	0.67	1.09	0.92	1.26	0.59
	Solid uninsulated	2.20	1.87	2.53	1.71	2.99
	Other	0.46	0.70	0.45	0.87	0.13
<b>Extent of Double Glazing</b>	No double glazing	1.44	1.59	1.69	1.46	1.80
	Less than 50%	1.15	1.33	1.41	1.07	1.21
	More than 50%	1.40	1.38	1.43	1.15	1.34
	Entire house	0.70	0.66	0.62	0.80	0.65

## **Energy Efficiency Band**

The energy efficiency rating of a property is one of the primary determinants of energy costs and will therefore have a significant impact on fuel poverty. This suspicion is borne out by the risk ratios in the table above; people living in Band E, F and G properties are significantly more likely to be in fuel poverty than those living in more energy efficient homes.

## **Dwelling Age**

Energy efficiency requirements of new homes have become much more stringent over time. As a consequence, households living in older properties are more likely to be in fuel poverty than those living in newer homes.

The risk ratios indicate that people living in pre-1919 properties are 123% more likely to be in fuel poverty than those living in newer properties.

## **Dwelling Type**

The relationship between dwelling type and fuel poverty is multifaceted. As an example, detached homes are typically larger than terraced properties and will typically have higher energy costs as a consequence. However, larger properties are more expensive, meaning the typical detached house owner (or tenant) is likely to be wealthier than the average owner (or tenant) of a terraced home.

The data indicates that people living in end terraced homes are at greatest risk of fuel poverty. Conversely, and quite surprisingly, those living in low rise flats are least likely to be living in fuel poverty.

## **Boiler Type**

The type of central heating boiler that a property uses is likely to be a significant factor in determining whether a household is in fuel poverty. Non-gas heating fuels are typically more expensive than gas, so will lead to relatively high heating bills. Given the discrepancy in efficiency between condensing and non-condensing boilers (90% compared with 70%), homes with non-condensing boilers will be more expensive to heat.

People living in homes with a non-condensing boilers are 43% more likely to be in fuel poverty than the rest of the population.

## **Grid Status**

Homes that aren't connected to the gas grid are commonly heated using electric heaters, oil or LPG central heating. Heating a home using LPG, oil or electricity is typically more expensive than mains gas. As a result, it is to be expected that homes off the gas grid have higher heating bills than similar properties on the gas grid and therefore are more likely to be in fuel poverty than their on grid counterparts.

Households without a connection to the gas grid have 1.5 times the risk of being in fuel poverty than those with a mains gas connection.

## **Wall Type**

Homes without sufficient insulation will lose more heat than well insulated homes. As a consequence, they will cost more to heat. Therefore, the incidence of fuel poverty is expected to be higher in homes in uninsulated homes than those with adequate insulation.

People living in homes with uninsulated solid walls have 2.2 times the risk of being in fuel poverty than those in homes with other types of wall.

## **Extent of Double Glazing**

Double glazing is an effective way of reducing the amount of heat lost from a house. Consequently, people living in a home with no double glazing are 44% more likely to be in fuel poverty than those with some (or full) double glazing.

## Household Characteristics

The table below illustrates the relationship between a number of household socio-economic characteristics and fuel poverty.

		LIHC	10% Ratio	LIHC and 10% Ratio	Low Income and 10% Ratio	Poverty and SAP <60
<b>Tenure</b>	Owner occupied	0.51	0.84	0.58	0.60	0.33
	Private rented	2.24	1.26	2.00	1.57	3.19
	Local Authority	1.13	1.08	1.06	1.36	1.23
	RSL	1.00	0.97	0.97	1.22	1.17
<b>Region</b>	North East	1.15	1.57	1.37	1.60	0.96
	Yorkshire	1.02	1.08	1.21	0.96	0.88
	North West	1.06	1.21	1.14	1.24	0.88
	East Midlands	1.00	1.14	1.22	1.26	1.02
	West Midlands	1.39	1.32	1.79	1.45	1.26
	South West	1.12	1.25	1.20	1.02	0.88
	East England	0.83	0.86	0.86	0.85	0.95
	South East	0.75	0.64	0.54	0.63	0.69
	London	0.93	0.60	0.46	0.67	1.53
<b>Poverty Status</b>	Not in poverty	0.06	0.16	0.04	0.08	N/A
	In poverty	15.74	6.15	24.90	12.47	N/A
<b>Length of Residence in Current Dwelling</b>	less than 1 year	1.14	1.14	1.33	1.43	1.83
	one year	1.13	0.87	0.96	1.09	1.37
	two years	1.14	0.99	1.21	1.10	1.19
	3-4 years	1.07	0.67	0.80	0.71	1.20
	5-9 years	1.02	0.57	0.75	0.66	0.85
	10-19 years	0.90	0.83	0.82	0.84	0.85
	20-29 years	0.96	1.21	1.07	1.02	0.72
	30+ years	0.67	1.96	1.32	1.44	0.60
<b>Household size (No. of occupants)</b>	1	0.66	2.91	1.24	2.27	0.93
	2	0.56	0.64	0.82	0.73	0.61
	3	1.44	0.60	1.16	0.72	1.23
	4	1.46	0.40	0.73	0.47	1.28
	5	2.17	0.64	1.07	0.80	1.98
	6	3.23	0.70	1.59	0.87	1.90
	7	4.52	0.58	1.35	0.72	3.07
	8	4.65	0.00	0.00	0.00	0.57
	9	2.12	0.00	0.00	0.00	2.27
	10 or more	9.65	0.00	0.00	0.00	0.00
<b>Sex</b>	Male	0.91	0.67	0.83	0.73	0.89
	Female	1.10	1.48	1.21	1.37	1.12
	No answer	2.44	0.83	1.82	1.02	1.31
<b>HRP Illness</b>	Yes	1.18	1.32	1.38	1.33	1.15
	No	0.84	0.76	0.72	0.75	0.87

## Tenure

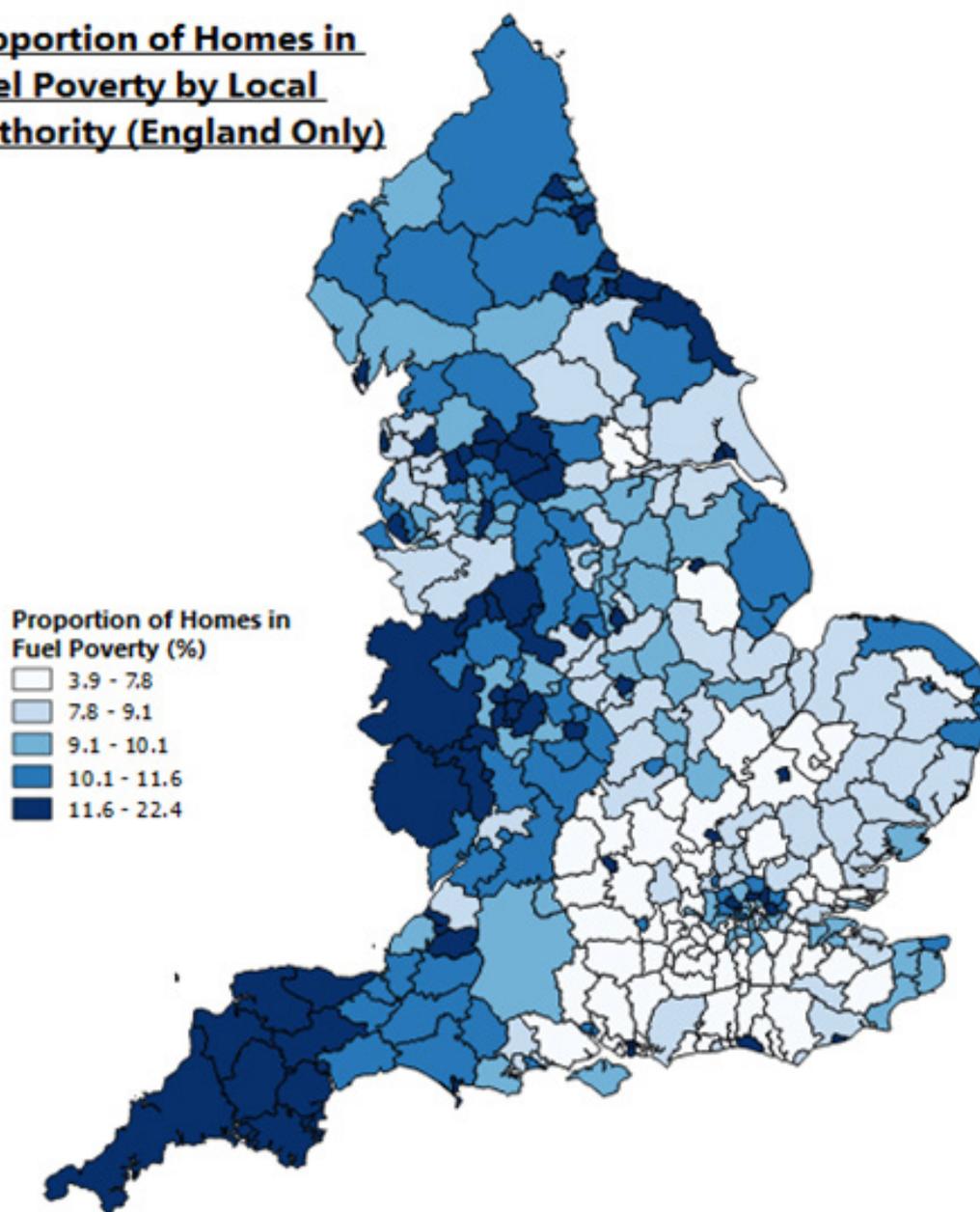
It is well known that homes in the private rented sector are less energy efficient than privately owned homes. People living in privately rented homes are 124% more likely to be in fuel poverty than those in other types of housing.

Local authority and registered social landlord properties are required to meet more stringent energy efficiency than privately owned or rented properties. As a result, they are the most energy efficient homes in the UK building stock (source EHS). However, by their nature, occupants of these homes are likely to have lower disposable incomes than people in owner occupied homes.

## Region

There is significant variation in the prevalence of fuel poverty in different regions of England. Those in the West Midlands face 1.4 times the risk of fuel poverty than those in other areas of the country. The map below demonstrates the regional discrepancies in fuel poverty at a more detailed level:

### Proportion of Homes in Fuel Poverty by Local Authority (England Only)



### Poverty Status

Unsurprisingly, the relationship between poverty and fuel poverty is very strong. Those in poverty are nearly 1500% more likely to be in fuel poverty than those not in poverty.

### Length of Tenure

The prevalence of fuel poverty declines the longer the householder’s tenure in a property. One potential reason for this is that people intending to live in a property for a long period have a greater incentive to invest in energy efficiency measures than others.

### Household Size

Larger households are at greater risk of fuel poverty than smaller households. This is likely due to the fact that the income levels used in the calculation of fuel poverty status are “equivalised” to take into account the fact that smaller households can obtain the same standard of living for less money than larger ones.

### Logistic Regression

One of the drawbacks of the approach in the previous section (and the approach in DBEIS’ annual fuel poverty report) is that it considers each characteristic in isolation of others.

However, many of the characteristics are in fact related to each other. For example, the age of a property is highly correlated with the type of wall insulation. The table below demonstrates that uninsulated solid walls are found in 83% of pre-1919 properties, yet only 1.6% of post-1980 homes.

	pre 1919	1919 - 1944	1945 - 1964	1965 - 1980	post 1980
<b><i>Cavity with insulation</i></b>	3.70%	31.00%	63.77%	58.87%	47.48%
<b><i>Cavity uninsulated</i></b>	10.83%	23.53%	22.49%	33.72%	41.99%
<b><i>Solid with insulation</i></b>	2.04%	1.55%	2.80%	1.25%	1.92%
<b><i>Solid uninsulated</i></b>	83.09%	43.89%	10.74%	4.80%	1.60%
<b><i>Other</i></b>	0.33%	0.04%	0.21%	1.36%	7.01%

The analysis above does not take into account these inter-correlations, therefore caution must be exercised when interpreting the risk ratios. For example, the risk ratios imply that people living in pre-1919 properties are at greater risk of fuel poverty than those living in newer properties. However, this is not a causal relationship – the age of a house does not itself directly influence fuel poverty status. However, other factors that are correlated with the age of the property – e.g. wall type and insulation – do have a direct impact on the likelihood of fuel poverty.

Regression techniques can be employed to control for confounding factors and allow for more meaningful conclusions to be drawn about the true magnitude of the relationship between household characteristics and fuel poverty.

Specifically, in circumstances where the “dependent variable” (fuel poverty status) is “categorical” (i.e. it can take one of a limited number of possible values) logistic regression techniques can be used to investigate the relationship in question.

The results of the logistic regression are shown in the table below:

		Odds	Odds increase/Decrease vs Reference
<b>Poverty Status</b>	In Poverty	59.06	5851%
	Not in Poverty		Reference
<b>Grid Status</b>	On Grid	0.364	-64%
	Off Grid		Reference
<b>HRP Age</b>	Age	1.003	0%
	Age= Zero		Reference
<b>Loft Insulation</b>	Loft Insulation Depth	0.997	0%
	No loft Insulation		Reference
<b>Dwelling Age</b>	Pre 1919	4.361	336%
	1914 to 1944	3.215	221%
	1945 to 1964	3.713	271%
	1965 to 1980	3.15	215%
	Post 1980		Reference
<b>Property Type</b>	End terrace	1.007	1%
	Mid terrace	0.534	-47%
	Semi detached		Reference
	Detached	1.605	60%
	Bungalow	1.068	7%
	Converted flat	0.335	-66%
	Low rise flat	0.330	-67%
	High rise flat	2.144	114%
<b>Insulation</b>	Cavity with insulation	0.311	-69%
	Cavity uninsulated	0.886	-11%
	Solid with insulation	0.222	-78%
	Solid uninsulated		Reference
	Other	0.406	-59%
<b>Glazing</b>	No double glazing		Reference
	Less than half	0.761	-24%
	More than half	0.817	-18%
	Entire house	0.704	-30%
<b>Tenure</b>	Owner occupied		Reference
	Private rented	1.330	33%
	Local authority	0.742	-26%
	RSL	0.629	-37%
<b>Region</b>	North East	2.200	120%
	Yorkshire and Humber	1.725	73%
	North West	1.873	87%
	East Midlands	1.783	78%
	West Midlands	1.926	93%
	South West	2.127	113%
	East England	1.233	23%
	South East	1.440	44%
	London		Reference
<b>No. of occupants</b>	1		Reference
	2	1.179	18%
	3	2.167	117%
	4	1.996	100%
	5	2.081	108%
	6	3.648	265%
	7	7.486	649%
	8	13.813	1281%
	9	3.035	204%
<b>Sex of HRP</b>	Female	0.966	-3%
	Male		Reference
<b>Length of Occupancy</b>	Less than one year		Reference
	one year	1.020	2%
	two years	1.172	17%
	3-4 years	1.241	24%
	5-9 years	1.500	50%
	10-19 years	1.451	45%
	20-29 years	1.885	89%
	30+ years	1.526	53%
	Constant	0.016	-98%

## Interpretation of Logistic Regression Output

The coefficients from a logistic regression give an estimate of the degree of association between each of the characteristics and fuel poverty. The coefficients can be interpreted as follows: holding all other variables constant, the odds coefficient represents the increase or decrease in the odds of being in fuel poverty relative to the reference state for a set of characteristics. A coefficient larger than one is associated with an increase in the odds, while a coefficient less than one represents a decrease in odds.

For example, in the table below the odds of being in fuel poverty are 47% lower for households in mid-terrace homes than the odds for people in semi-detached homes. Similarly, the odds of being in fuel poverty are 114% higher for households in high rise flats than the odds of fuel poverty in the reference property type. A more detailed explanation and motivating examples can be found [here](#).

## Results

Many of the relationships that were found in the risk ratio analysis are also visible in the logistic regression analysis, although the size of the effects differ due to isolating the effects of each individual variable.

Poverty itself plays the largest role in determining who is in fuel poverty. Even when dwelling characteristics are taken into account, the odds of being in fuel poverty are nearly 6000% higher for those in poverty than people not in poverty.

Controlling for other factors, a connection to the gas grid is associated with a 64% reduction in the odds of being in fuel poverty. Cavity wall and solid wall insulation also reduce the odds of being in fuel poverty by a large degree. Conversely, those living in private rented accommodation are more likely to be in fuel poverty than those living in owner occupied, local authority or housing association homes.

### **Importance of Grid Status**

In order to fully comprehend the association between connections to the gas grid and fuel poverty, it is instructive to use the above logistic regression model to construct a few motivating examples.

#### **Example 1**

“Lara” lives in a 1970s semi-detached property in the West Midlands with insulated cavity walls, 125mm of cavity wall insulation and full double glazing. She is 40 years old, not in poverty and lives with four others. She has been living in their current property for three and a half years and owns the property.

According to the logistic regression model constructed above, these characteristics suggest that Lara has a 4.1% chance of being in fuel poverty if she isn’t connected to the gas grid. According to the model, a connection to the gas grid would reduce her chance of being in fuel poverty to 1.5%.

#### **Example 2**

Isaiah lives in a pre-1919 end terrace property in Yorkshire with uninsulated solid walls, no loft insulation and no double glazing. He is 55 years old, in poverty and lives alone. He has been living in their current property for one year and rents from a private landlord.

These characteristics suggest that Isaiah has a 92.1% chance of being in fuel poverty if he is not connected to the gas grid. According to the model, a connection to the gas grid would reduce the probability of being in fuel poverty to 80.9%.

#### **Example 3**

Josh lives in a 1950s detached property in the South East with insulated solid walls, 125mm of loft insulation and double glazing on more than half of his windows. He is 30 years old, not in poverty and live with two other people. He has been living in his current property for five years and own the property.

These characteristics suggest that Josh has a 20.0% chance of being in fuel poverty if he is not connected to the gas grid. According to the model, a connection to the gas grid would reduce the probability of being in fuel poverty to just 8.3%.

Reducing the incidence of poverty is well beyond the scope of any Government energy efficiency scheme. However, improvements to the fabric of a home as well as to the heating system are deliverable by Government. The next section of this report explores the costs and benefits of the solutions that are available to the Government for reducing the incidence of fuel poverty.

In this section, we explore the costs and benefits of four possible measures that could be (and are) used to reduce the prevalence of fuel poverty. These are:

- Solid wall insulation
- Cavity wall insulation
- Loft insulation
- First time central heating (including gas grid connection)

For each measure, an estimated cost of installation has been gathered from the Energy Saving Trust. Where this has not been possible, cost estimates have been produced from stakeholder discussions. The savings resulting from each measure have been taken from The Department for Business, Energy and Industrial Strategy's (DBEIS) annual National Energy Efficiency Data Framework (NEED) report. This report gathers real life usage data from households and tracks changes in usage in homes that install various energy efficiency measures.

## **Solid Wall Insulation**

The UK has some of the most poorly insulated homes in Western Europe ([Guardian](#), 2013), it is therefore unsurprising that insulation measures have been a focus of existing Government energy efficiency schemes. To the end of June 2016, 125,751 solid wall insulation measures have been installed through ECO.

The Department for Business, Energy and Industrial Strategy's (DBEIS) annual National Energy Efficiency Data Framework (NEED) estimates that the median energy saving for a household installing solid wall insulation is 15.5%.

## **Cavity Wall Insulation**

As demonstrated in the prior analysis, the presence of an uninsulated cavity wall is a strong predictor of fuel poverty.

Cavity wall insulation measures have formed the backbone of ECO, with 684,454 measures installed up to the end of June 2016. According to NEED, homes with cavity wall insulation experience a median energy saving of 8.4%.

## **Loft Insulation**

Loft insulation is also included within ECO, with 471,988 measures installed to the end of June 2016. 39% of these represented the installation of loft insulation where none was previously present, while 56% of these were the installation of top up loft insulation.

According to NEED, homes installing loft insulation experience a median energy saving of 2.1%

## **Grid Connection**

Electric heating is typically 100% efficient, but a unit of electricity is considerably more expensive than a unit of gas. According to the Energy Saving Trust, standard rate electricity costs 13.86 p/kWh while off-peak economy 7 electricity costs 7.21 p/kWh. By comparison, a unit of gas costs 4.18 p/kWh.

A new condensing boiler delivers heat at efficiencies of 90% and over. **Consequently, the use of gas heating costs 4.6 p/kWh of delivered heat, compared with 13.86 p/kWh of heat for a system using electric storage heaters.** The cost of electric heating could be reduced if the homeowner is able to take advantage of an Economy 7 tariff.

In this section, we consider the bill savings that would be experienced by a selection of off-grid, electrically heated households who install one of the aforementioned measures.

For the purpose of these calculations, it is assumed that the home currently uses electric storage to meet heat demand. Three heat demands are considered: 10,000 kWh, 15,000 kWh and 20,000 kWh. In the first instance, absent any energy efficiency measures or new heating systems, this results in heating bills of £1,386, £2,079 and £2,772 respectively.

The table below demonstrates the bill savings that would be experienced through the installation of each of the considered measures.

	Heat demand (kWh)		
	10,000	15,000	20,000
Initial bill	£1,386	£2,079	£2,772
	Savings		
Cavity wall insulation	£116	£175	£233
Solid wall insulation	£215	£322	£430
Loft insulation	£29	£44	£58
Gas grid connection	£922	£1,382	£1,843

**A connection to the gas grid leads to the most significant bill savings – providing a saving of £1,843 for a home with a heat demand of 20,000 kWh. By contrast, cavity wall insulation saves £233, solid wall insulation would save £430 and loft insulation would save just £58.**

## Solid Wall Insulation

The cost of solid wall insulation varies considerably, depending on the size and type of property that is to be insulated. Solid wall insulation is installed by fixing a layer of insulation to the outside of a property and covering it with render or cladding.

**The Energy Saving Trust (EST) estimates that the cost of external solid wall insulation ranges between £8,000 for a small flat to £22,000 for a large detached house.**

## Cavity Wall Insulation

Cavity wall insulation can often be installed quickly and with minimal disruption. However, many cavities are deemed to be “hard to treat” and can only be insulated at greater expense and disruption. The EST estimates that the cost of cavity wall insulation ranges between £330 for a small flat and £720 for a detached property.

## Loft Insulation

Many loft spaces can be easily insulated by the homeowner themselves, although factors such as inaccessibility, flat roofs, loft conversions and damp mean that it is often advisable for a professional to undertake the work. Many homes already have some level of loft insulation, in which case this can be topped up to a recommended depth of 270mm.

The cost of loft insulation varies depending on the depth of the existing insulation and the surface area of the loft. **The Energy Saving Trust estimate that loft insulation (going from 0 to 270mm) costs between £285 for a mid-terrace house to £395 for a detached property. Top up insulation (120 to 270mm) is estimated to cost between £240 and £310.**

### Gas Grid Connection

The installation of a new “wet” central heating system in a previously electrically heated, off grid home is a three stage process. Firstly, the household must be connected to the gas grid. Information provided by the Gas Distribution Networks indicate that the average cost of a connection to the gas grid is approximately £1,200. However, this average figure overstates the cost of connection for a significant proportion of UK homes. Homes that are closer to the existing grid can be connected at lower cost than those further away. The 2016 Committee on Climate Change “Next steps for UK heat policy” report estimated the following costs of connection:

Connection type	Cost per property
Single property to an existing gas grid (outside London)	£346
Single property to an existing gas grid (London)	£743
Small development of 10 properties	£988
New development of 100 properties	£1,076
Commercial/industrial estate (20 medium sized units)	£1,681

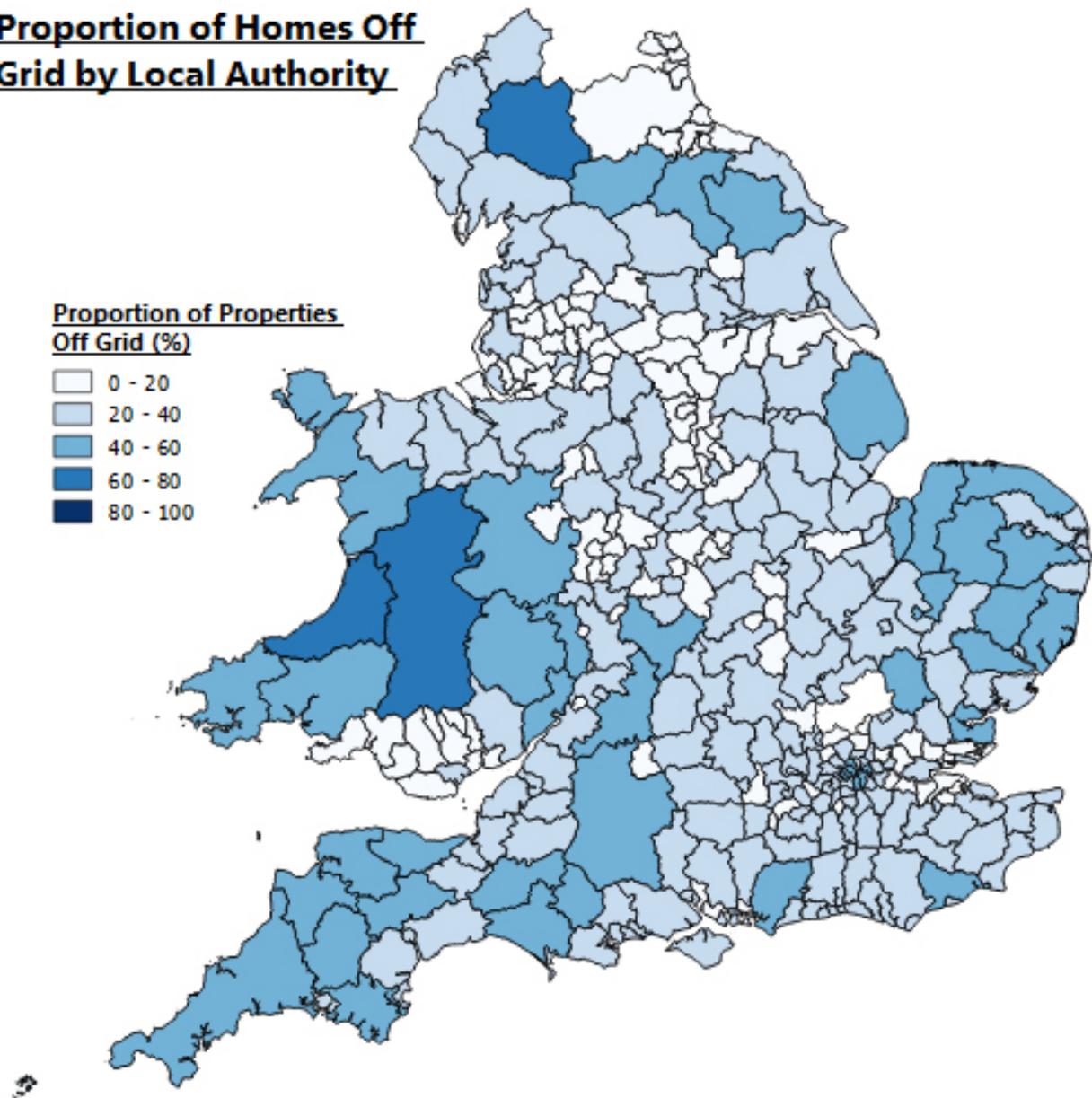
Source: CCC

NB. The single property cost estimates assume the property is located within 23 metres of the existing gas distribution system. For the purposes of this report we have used the higher average connection cost figure of £630, supplied by the GDNs rather than the <23m connection costs

The next step is the installation of a new gas boiler - this is estimated to cost approximately £2,000 including installation. For first time central heating, new radiators and associated pipe work need to be fitted alongside the boiler. Discussions with external stakeholders suggest that this is likely to cost in the region of £2000. **Overall, this brings the total cost of a gas connection and first time central heating system to £4,600 for properties outside London within 23m of the existing grid. (based on Baxi figures)**

In general, properties that are closest to the existing gas grid can be connected at lowest cost. Using figures from the Department for Business, Energy & Industrial Strategy (DBEIS) it is possible to identify areas in which a strategy of connecting homes to the gas grid could be most easily targeted. Firstly, it is useful to explore in which local authorities a gas grid connection is least prevalent.

## Proportion of Homes Off Grid by Local Authority



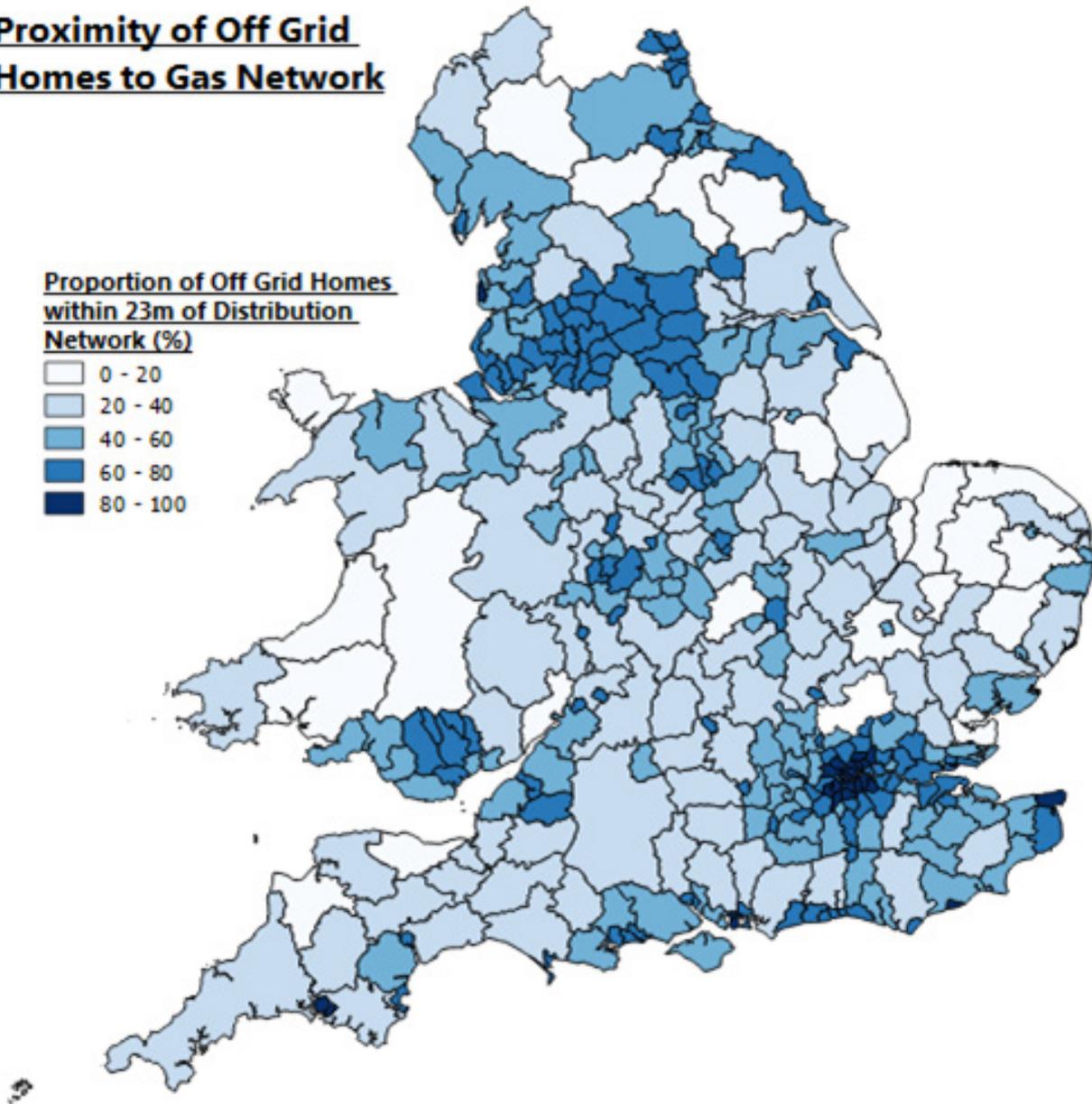
**Of all off-grid properties in Great Britain, it is estimated that 54% are within 23 metres of the distribution network. Overall, nearly 80% of properties are within half a kilometre of the distribution network.** Areas with a high proportion of homes in close proximity to the gas grid should be considered a priority for wide-scale connections to the gas grid.

The map below demonstrates the proportion of properties within each local authority that are within 23 metres of the distribution network:

**Proximity of Off Grid Homes to Gas Network**

**Proportion of Off Grid Homes within 23m of Distribution Network (%)**

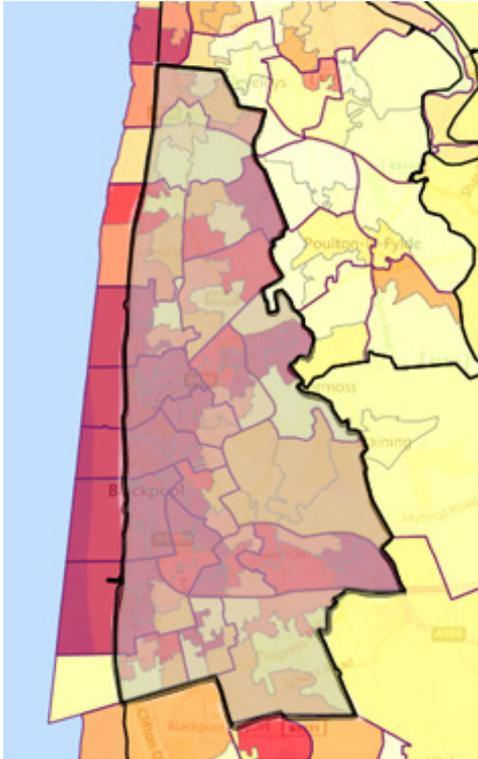
- 0 - 20
- 20 - 40
- 40 - 60
- 60 - 80
- 80 - 100



In much of Greater London, South Wales and the North West of England, over 60% of off grid homes are within 23 metres of the existing distribution network. In light of the analysis in the section above, it would seem logical to propose that homes in fuel poverty in close proximity to the gas grid would be most effectively helped by providing them with a connection to the grid and a first time central heating system.



Blackpool 2015 IMD Map



Local authority boundary

Blackpool is a town with high levels of deprivation, despite being a national tourist hotspot. As the IMD map to the left shows, there are substantial areas of deprivation (indicated by darker maroon shades) in the central and southern parts of the town and there are no areas that are classified within the 30% least deprived neighbourhoods in the country.

Overall, the Blackpool Borough ranks as the most deprived of all 330 local authorities in England; indeed, as the table on the right shows, six of the eleven most deprived LSOAs in Britain (numbering 32,844) are located in Blackpool<sup>7</sup>.

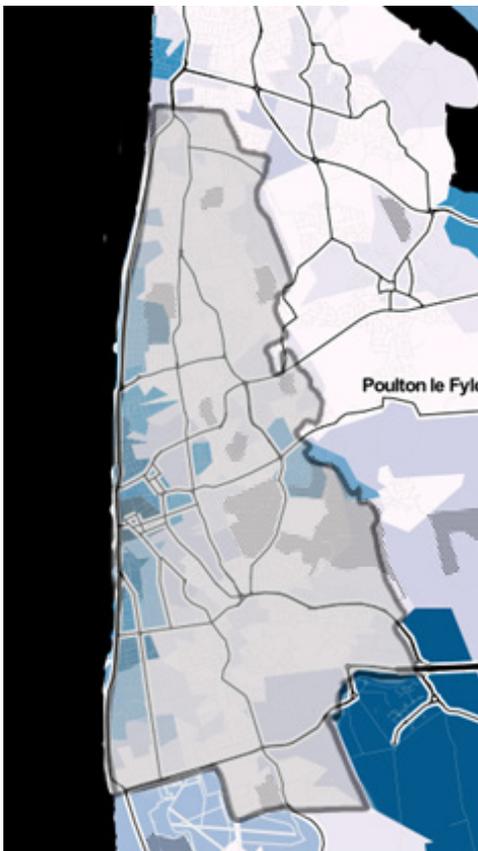
11 Most Deprived LSOAs	
1	Tendring 018A
2	Blackpool 010A
3	Blackpool 006A
4	Thanet 001A
5	Blackpool 013D
6	Tendring 016B
7	Blackpool 013A
8	Coventry 007E
9	Blackpool 011A
10	Waveney 007D
11	Blackpool 010E

High levels of income and employment inequality, in particular, are strong indicators of a prevalence of fuel poverty, which has been estimated some 9,288 households across Blackpool (14.1% of the total number). As with deprivation more broadly, fuel poverty in Blackpool is concentrated in certain areas with some neighbourhoods having fuel poverty rates in excess of 33%.

Meanwhile, the corresponding Non-Gas Map shows that there are high concentrations of off-gas grid properties (indicated by darker shades of blue) along the coast, particularly in the most deprived areas of the town. These areas are almost exclusively comprised of terraced houses, the vast majority of which are less than 23 metres from the gas grid. Examples of some specific LSOAs which fit this model can be found in the table below with their rank on the deprivation scale being compared to the proportion of off-gas grid properties as well as instances of fuel poverty.

These are the kind of deprived communities which could benefit from targeted connection to the gas grid at relatively low cost given their very close proximity to the existing gas grid.

Blackpool Non-gas Map



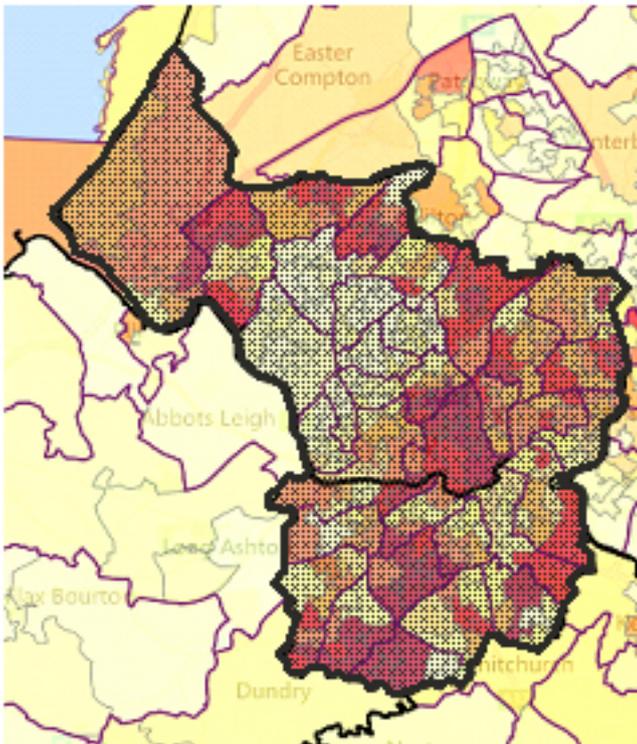
Local authority boundary

<sup>7</sup> DCLG 2015 Indices of Multiple Deprivation – Summaries at Local Authority level ([https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/467764/File\\_1\\_ID\\_2015\\_Index\\_of\\_Multiple\\_Deprivation.xlsx](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/467764/File_1_ID_2015_Index_of_Multiple_Deprivation.xlsx))

Blackpool: Comparison of Deprivation and Off-gas grid by LSOA

<i>LSOA code</i>	<i>National deprivation rank (1 to 32,844)</i>	<i>% of households that are fuel poor<sup>8</sup></i>	<i>% of properties off-gas grid</i>	<i>Proportion of off-gas grid within 23m of grid</i>	<i>Proportion of off-gas grid within 50m of grid</i>
006A	3	23.6%	82.8%	99.4%	100%
013D	5	32.0%	83.4%	74.9%	99.8%
013A	7	30.3%	67.7%	96.0%	100%
013B	17	33.8%	78.2%	98.5%	100%
006B	18	27.6%	64.9%	98.3%	100%
010D	83	26.5%	87.7%	96.6%	100%

Bristol 2015 IMD Map



— Local authority boundary

Bristol is one of the UK's major cities, having a population of approximately 450,000 with over 600,000 in its wider urban area. Although the IMD map shows that there are affluent communities in the west and north of the city, there are also pockets of deprivation to the east of the city centre as well as in the south of the city.

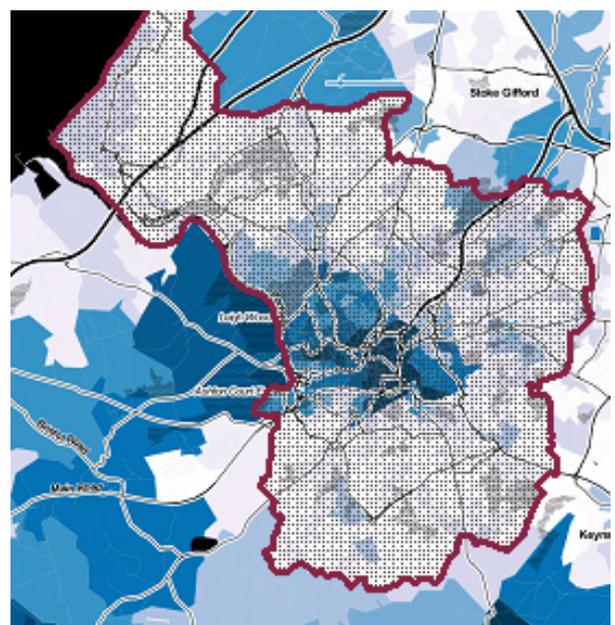
Overall figures of deprivation are not as high as in Blackpool, however Bristol still ranks highly at 33rd amongst England's 330 local authorities. The proportion of fuel poor households sits at 13.2% which represents 25,379, almost triple that of Blackpool. The extremes between different areas of the city are also stark; in some instances, neighbourhoods with fuel poverty rates in excess of 23% sit within a mile of ones with 5%.

The distribution of gas grid connections in Bristol is typical of many large cities; coverage is better in suburban areas but relatively poor in and around the city centre. As demonstrated by the Non-gas Map, deprived estates in the south of the city are fairly well served in terms of grid connections whereas poor inner city areas such as Lawrence Hill and St Paul's are not.

Overall instances of fuel poverty in these communities tend to be around 10% lower than in the most deprived communities of Blackpool, which at the very top of the scale in many respects. This may be due, in part, to the higher incomes and more plentiful job opportunities available to residents of a major southern city as opposed to a northern town.

Nevertheless, the rates of fuel poverty in these areas are typically 5% above the national average and therefore there are clearly many thousands of households in Bristol alone that could benefit hugely from being connected to the gas grid as opposed to having to rely on more expensive sources of heat.

Bristol Non-gas Map

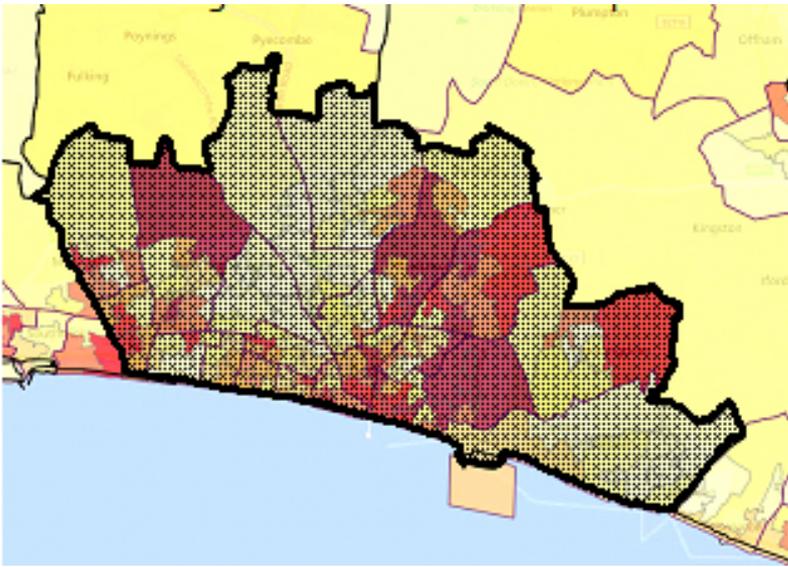


— Local authority boundary

Bristol: Comparison of Deprivation and Off-gas grid by LSOA

<i>LSOA code</i>	<i>National deprivation rank (1 to 32,844)</i>	<i>% of households that are fuel poor</i>	<i>% of properties off-gas grid</i>	<i>Proportion of off-gas grid within 23m of grid</i>	<i>Proportion of off-gas grid within 50m of grid</i>
056B	682	14.5%	71.6%	45.8%	96.7%
056C	949	9.5%	81.1%	87.8%	100%
025F	1,101	14.2%	85.8%	96.0%	100%
023G	1,385	15.6%	71.6%	99.5%	100%

Brighton & Hove 2015 IMD Map



— Local authority boundary

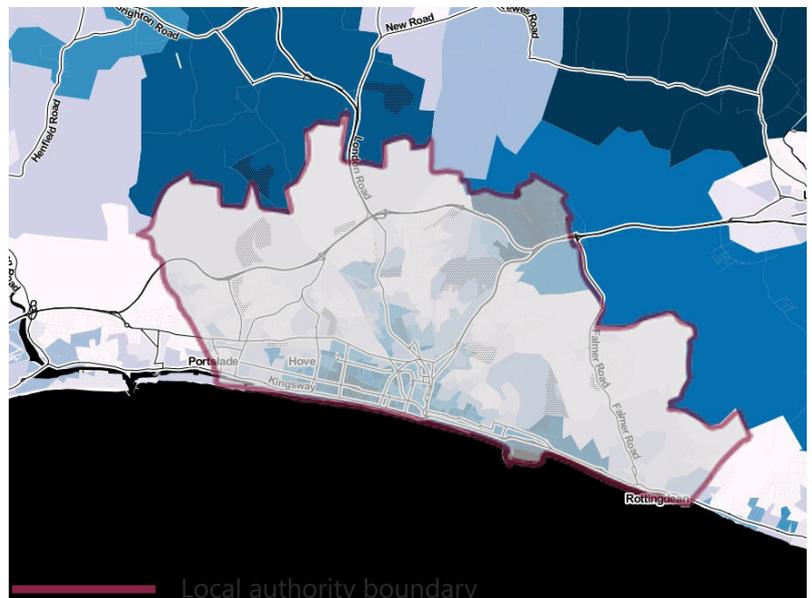
Being within commuting distance of London, Brighton and Hove are home to many affluent communities. However, high house prices and a general cost of living far greater than towns such as Blackpool means there are also plenty of instances of fuel poverty and deprivation.

As a local authority, Brighton and Hove is the 65th most deprived in Britain and the fourth most deprived in the South East region. As with Bristol, the densely populated nature of Brighton and Hove means neighbourhoods with fuel poverty rates of nearly 20% sit cheek-by-jowl with ones that are below 7%.

Brighton & Hove Non-gas Map

As a coastal city, Brighton's off-gas grid properties are found in a similar pattern to those in Blackpool. Most are concentrated along the coast in areas that are amongst the most densely populated in Britain. These areas of the city also suffer some of the highest rates of fuel poverty, typically between 15% and 20%.

Given the tightly packed nature of the city, the vast majority of fuel poor households are within 23 metres of the gas grid, making connections far less logistically difficult than rural connections, for example.



— Local authority boundary

Brighton & Hove: Comparison of Deprivation and Off-gas grid by LSOA

<i>LSOA code</i>	<i>National deprivation rank (1 to 32,844)</i>	<i>% of households that are fuel poor</i>	<i>% of properties off-gas grid</i>	<i>Proportion of off-gas grid within 23m of grid</i>	<i>Proportion of off-gas grid within 50m of grid</i>
030C	339	9.7%	82.4%	99.4%	100%
031C	458	6.5%	80.7%	96.1%	100%
027C	2,353	17.3%	78.2%	78.9%	100%
029C	5,080	14.8%	94.4%	96.7%	100%

As a result of the costs and benefits detailed above, EUA would recommend that **first time central heating should be a core feature of any future Government energy efficiency or fuel poverty reduction strategy.**

Unfortunately, first time central heating has often been overlooked as a tool for reducing fuel poverty. The Gas Distribution Networks (GDNs) are required by Ofgem to connect fuel poor customers to the gas grid.

Discussions with the GDNs have revealed that the main barrier to connecting fuel poor customers is finding a funding provider for the new heating system. By increasing the ambition of the regulatory requirement to connect homes and providing funding under a Government scheme for first time heating systems, a significant improvement could be made on the current state of affairs.

EUA are making the following recommendations that this report demonstrates can take households out of fuel poverty.

- 1. Amend the Energy Company Obligation scheme to focus on first time central heating systems for the fuel poor. This could save 139,130 homes a minimum of £922 per year.**

The Government's Spending Review in 2015 announced plans for a supplier obligation to run for 5 years from April 2017 at an estimated level of £640m per year. Based on whole central heating cost estimates of £4,600 approximately 139,130 homes could receive a first time central heating system every year through ECO. This would not be funded by general taxation and as it is already a commitment the energy companies have to meet it will not cause an increase in energy bills. We would argue that as it is easier to locate people off the gas grid it may reduce administration costs and so lead to slightly lower energy bills. For homes in fuel poverty the cost of a first time central heating system is too great for them to be able to afford without help. However the bill savings of £922 means it has a greater value for money than solid wall insulation and better annual bill savings than fabric measures such as cavity wall insulation and loft insulation. As our analysis shows having no boiler is a major indicator of fuel poverty.

Currently the major barrier to connecting homes to the grid is that a central heating system has to be agreed and funded before the connection can be signed off. As the FPNES is operated by Ofgem, and ECO by BEIS, there is a disconnect between government offices. EUA is calling for this to be simplified and that the two schemes operate together to identify fuel poor homes not on the gas grid, to arrange for the central heating system funding and then the connection. By making this simple change it could allow for approximately 139,130 homes be connected every year. Our discussion with the GDNs indicates that they would welcome the opportunity to connect more properties and that this would not cause an increase in costs that would be carried over onto household energy bills.

### **3. Fuel poverty schemes would be more effective if they operate on a street by street approach**

Currently ECO operates on a relatively isolationist basis. This means that properties are identified individually and not part of a neighbourhood approach. There have been schemes run in conjunction with local authorities and community groups but these are the exception and not the norm. We are calling on the government to look at ways to favour street by street approaches to tackling fuel poverty. With first time connections to the grid it will be more cost effective to connect a number of homes rather than on an individual basis. As our case studies show many of the inner city areas that are not connected are closely clustered. They would therefore benefit from a community approach. This would also allow people that are not in fuel poverty but that are also not on the grid to connect at the same time, if they are able to pay, but the overall costs should be lower making the cost very affordable. This would have the benefit of allowing households that are not officially in fuel poverty to benefit from the bill savings we have outlined. This would not only benefit the UK economy but also help those families that only have a limited amount of disposable income and any new economic downturn could be pushed into fuel and absolute poverty. EUA would ask that the new ECO scheme consult of measures that will improve and facilitate a street by street approach.

### **4. Better cross departmental data sharing to help identify fuel poor households**

For many years fuel poverty campaigners have been calling on the government to allow different departments to share data to enable fuel poor homes to be more easily identified. The benefit of focussing on first time gas grid connections is that the GDNs and energy suppliers should be easily able to locate properties that are not connected to the grid. However they would then have to identify those that are in fuel poverty. This would be simplified by allowing energy companies to cross reference connection data to data held by the Department for Work and Pensions (DWP). This one step could generate an accurate list of all properties that are eligible for the ECO scheme and without a gas boiler and therefore likely to be in fuel poverty as evidenced by the research in this report. This would reduce costs for the energy companies in delivering ECO allowing them to retrofit more homes, lower administration costs and potentially lower the pressure ECO has on domestic energy bills.

EUA believes that by making these four changes to fuel poverty policy in the UK, homes that need help in reducing their energy bills could receive it in a more effective manner than is achieved today. We accept that energy efficiency is more than just the heating appliance and that fabric measures should also be included. However cost effective fabric measures have less impact on taking households out of fuel poverty. Therefore we believe it is right to target the biggest bill saving first and then subsequent energy efficiency schemes can look at tackling the other measures that may help further bring costs down.

Having affordable heating is also more important than just in reducing bills. As the health information in the report shows, having reliable and affordable heating helps reduce costs on the NHS and has wider societal benefits. The UK has the best gas heating delivery mechanism in the world, that delivers affordable heat to millions of homes, EUA believes the government should help all homes benefit from it.

## References

Fuel Poverty Methodology Handbook; available at

[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/557403/Fuel\\_Poverty\\_Methodology\\_Handbook\\_2016\\_updated\\_23.09.2016.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/557403/Fuel_Poverty_Methodology_Handbook_2016_updated_23.09.2016.pdf)

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