

Briefing Note on Fuel Poverty in Cornwall

February 2022

Central Government (BEIS) publish annual data on fuel poverty rates for England. The most recent data release for 2021 showed a **national rate of 13.4%, approximately 3.18 million homes**. Note that these statistics are two years behind, and the 2021 figures represent best estimates for 2019. This means that these figures are based on fuel costs **before** the pandemic, the 12% energy price cap rise in October 2021, nor the most recent 54% price cap rise.

In Cornwall the headline rate of Fuel Poverty was 11.4%; for the first time lower than the national average. So, for Cornwall, before the pandemic, about **30,000 households** were in or at risk of fuel poverty.

Cornwall Council has a target to reduce fuel poverty levels to below 5% by 2030. There are some key infrastructural issues in Cornwall, which are referenced below, that make this target extremely challenging.

These latest fuel poverty statistics for England are based on a new measure using the **Low Income, Low Energy Efficiency (LILEE) indicator** (the Devolved Administrations use different measures). Under the LILEE indicator, a household is considered to be fuel poor if:

- they have required fuel costs that are above average (the national median level)
- were they to spend that amount, they would be left with a residual income below the official poverty line (this is described as the energy price gap)
- The new measure introduces factoring how efficiently the property performs using the Energy Performance Certificate score (EPC) where A 100 is the best and G 1 is the worst rating. Homes rated F & G will be more likely to contribute to high energy costs, creating a risk of fuel poverty. (Many homes don't have an EPC and so a lot of assumptions are based on extrapolating existing EPC data.)

There are 3 important elements in determining whether a household is in or at risk of fuel poverty:

- fuel costs, related to the type of fuel used for primary heating.
- household energy requirements - consideration is needed of the material quality of a house and both its energy efficiency and thermal efficiency.
- household incomes –
 - I won't comment further on current data on income levels in this briefing note as the economic impact of the pandemic has had dire consequences on household incomes that are still being evaluated; except to note that, below average income levels in Cornwall contribute to the overall challenge. As is the case with other aspects of poverty, low or fixed household incomes limit many households on their ability to take any actions themselves to improve their home's energy efficiency or reduce their carbon footprint. Hence the need for large scale Government-led improvement programmes.

Fuel costs

Nationally, over 80% of homes have access to mains gas, so this is treated as the standard for domestic heating. This is not the case in Cornwall where about **half of homes are not connected to**

the mains gas network; the precise level of gas connections varies depending on the source of data used but between 43-48% of homes remain off the gas grid in Cornwall; and are likely to never be connected.

Mains gas remains the cheapest way to heat a home (approx. 7p per unit, compared to electricity at 18-22p per unit (pre-price cap rates)). Therefore, the Committee on Fuel Poverty still see connection to mains gas as a key tool in tackling fuel poverty, despite the pressure to reduce our reliance on fossil fuels. Decarbonising mains gas supply using biomethane or blending it with hydrogen has potential here to combine responding to the climate catastrophe with tackling fuel poverty.

In Cornwall, for homes not able to access mains gas, we work on the following breakdown (based on 2019 data from the ONS)

- 15% of homes use heating oil
- 24% of homes use electricity, with high numbers using Night Storage heaters
- 4% use LPG or bottled gas
- Approximately 2% of homes are still using solid fuel/coal – I estimate around 5,000 homes, and this figure has remained steady over the past 10 years from analysis of data on domestic coal supplies.
- 7% use a mix of heating including biomass (typically wood burners)

Lack of access to mains gas typically pushes households to be reliant on more carbon intensive fuels, unless they use electric heating, which typical has proven to be a higher cost option.

Two immediate impacts for households not using mains gas are that they are unable to claim the dual fuel discounts commonly available from suppliers, and non-grid supplied fuels must be purchased in bulk before use. In comparison grid supplied fuels, electricity and gas, are paid for either as they are consumed on a pre-payment meter or in arrears with a credit account. For households on limited incomes, not being able to access these additional discounts adds further pressure to their budgets.

The bigger challenge for households on low or fixed incomes is being able to afford bulk supply of fuel:

- 500 litres of heating oil will cost about £200 - £240 currently, but this fluctuates through the year and is very susceptible to the global oil price, and routinely increases when demand is higher in the winter months. Depending on the efficiency of their boiler, how well their home stays warm and the level of heat they require, heating oil users will typically consume 3 or more tanks of oil per year. The average domestic heating oil tank ranges in capacity between 1,000 – 1,360 litres, with some larger domestic tanks having a capacity of up to 2,500 litres so the cost of filling up a tank can be prohibitive. We often meet householders who can't afford the cost of purchasing 500l and smaller 'top-ups' are difficult to arrange.
- A 47kg bottle of LPG gas (the taller ones) costs about £75.

The efficiency of a heating system is an important factor, and its age is relevant; due to various Government-led grant schemes, lots of mains gas boilers have been upgraded in recent years (it is still recommended to consider an upgrade every 7-10 years). In contrast, oil boilers and night storage heaters haven't seen the same level of funding to replace them, and we routinely come

across heating systems that are 20-25 years old and older – potentially inefficient and more expensive to run.

At the last census (2011) an estimated 7% of Cornish homes were without central heating, compared to under 3% nationally. Some good work by Cornwall Council's Public Health team on the Warm Homes Fund project has installed first time gas central heating across housing of all tenures, although the majority of this work has been concentrated in social housing.

Energy efficiency

The thermal efficiency of Cornish homes is a big issue for many of Cornwall's 279,500 domestic properties (again dependent on the data source this number varies).

We use the national Energy Performance Certificate (EPC) dataset to give a picture of how well our homes perform, which gives a score out of 100 (1 least efficient to 100 most efficient) and divided into 7 bands, from the best A to the worst G.

The Fuel Poverty Strategy (2014) set EPC Band C as the target for all fuel poor households by 2030, and new Net Zero Carbon targets also aim for raising standards to EPC C. It is important to note that **the Energy Efficiency score and Carbon Efficiency score are not the same** – both are shown on the EPC – so achieving a EPC C score isn't the complete picture.

Approximately 65% of Cornish homes have an EPC rating of D or below.

We estimate a **minimum of 32,000 homes are rated as EPC F or G** (the lowest efficiency and the costliest to run). From a fuel poverty perspective low efficiency housing is harder to keep warm and so more expensive to heat, exacerbating poverty issues. These homes are our focus.

Housing tenure is important in this context. Cornwall's housing stock is made up of approximately

- 66% owner occupier
- 22% private tenancies
- 12% social housing

Cornwall is different from much of England where there are higher levels of social and Council housing compared to private rentals.

Our big concern is private rented sector (PRS) housing. Despite regulations saying most tenancies should have an EPC, approximately 50% of PRS properties in Cornwall still do not have an EPC (there are exceptions to this rule). Of those that have an EPC, CC Private Sector Housing estimate about **4,000 tenancies fail to meet the Minimum Energy Efficiency Standard (MEES) of EPC E**. Our conclusion is that given the lack of EPC data this figure should be doubled to at least 8,000 tenancies likely to fail to meet the MEES and many of the tenants of these properties will also meet the fuel poverty criteria. CEP's new Warmer Tenants Advice service has been set up to work with tenants and landlords to tackle this issue.

The largest majority of private landlords only manage one or two homes and don't do this as their main business. They tend to be people who have 'accidentally' inherited a property to let, and often don't have sufficient capital to invest in improvements. Additionally in Cornwall, we face the challenge of the pressures caused by holiday and second home accommodation. Too much pressure on smaller private landlords could encourage them to shift into the unregulated holiday let market (AirBnB, etc.) and in consequence we will see further pressure added to the housing crisis.

Retrofit challenges

1 in 3 homes in Cornwall were built over 100 years ago. Therefore, retrofitting energy efficiency measures is challenging. Major government backed schemes have rolled out loft and cavity wall insulation programmes, which CEP has heavily promoted. However, these programmes have tackled the relatively easy challenges, and the harder-to-treat properties have been overlooked and action has been delayed.

35% of domestic properties in Cornwall are of solid wall construction – built of granite, stone, brick or cobb. External or internal wall insulation is disruptive and costly. Whereas Cavity Wall insulation on average costs approximately £500 for a three-bed semi-detached property and can be done in under a day, fitting External Wall insulation costs on average £10,000 - £15,000 and installation is very weather dependent, typical taking 10-14 days to install.

For many years CEP has worked to see a major programme of EWI on private properties developed in Cornwall, as yet without success. Why is this important? Contrary to popular understanding, heat loss through an uninsulated roof is about 25%, through windows and doors about 15% but **heat loss through the walls is about 35%**; any heat loss in domestic properties can be understood as contributing to direct carbon emissions. So making homes more thermally efficient is one of the most effective ways to reduce a household's carbon footprint.

Starting in 2022, CEP is working with the Council on the delivery of the Sustainable Warmth programme which will see about 400 homes receiving more extensive retrofit measures, with up to £25,000 available for F&G rated properties. Funding is sufficient to properly insulate properties and consider low carbon heating options. However, 400 homes is only a small step, but in the right direction and we hope the programme will be further funded and allow an increase in scale – the maths of the challenge illustrate the essential problem: the budget for sustainable homes is £7.8million giving £19,500 per home. **If at least 65% of Cornish properties need improvements, even at £20,000 per property (which I think underestimates the average cost) this equates to a required investment of more than £3.5billion.**

An additional element contributing to the challenge of improving our existing housing stock is our rural setting. We have above average numbers of detached properties with many dispersed in small villages and hamlets. Where national programmes encourage working on area-based programmes with large scale, street by street initiatives, Cornwall's landscape adds complexity to delivery.

Damp, Condensation, and Mould

A major issue in Cornwall's housing is humidity and damp. It is a consequence of being surrounded by the sea and that we experience lots of prevailing south-westerly rain. Many households that struggle with the issue of affordable heat, also as a direct result face issues with poor ventilation and the build-up of condensation and mould. This can create a vicious cycle where high humidity levels mean more heating is required to maintain adequate comfort levels (think about the energy needed to boil a kettle – lots of moisture in a room grabs available heat). Unfortunately, due to the way many funding programmes have worked, we have often found that we have been unable to join up the issues and deal holistically with a property. We would like to address heating, insulation and ventilation as a whole house solution but most programmes only allow us to consider either heating or insulation and almost never ventilation.

Health impacts of fuel poverty

Work on fuel poverty in Cornwall Council is led by the Public Health team, with whom CEP works very closely. They have a statutory responsibility to address this issue.

The World Health Organisation estimates that 30% of winter deaths are caused by cold housing. Living in a cold home is widely recognised as exacerbating a number of long-term health conditions including respiratory illness and COPD, rheumatism and arthritis. Around **a third of excess winter deaths are caused by respiratory illness** so access to affordable warmth is critical.

Living in a cold home can contribute to social isolation, as some people become reluctant to invite friends to a house that is cold. Damp, cold housing and being in fuel debt are associated with an increase in poor mental health – with the added pressures of the current crisis on mental health, CEP has a targeted initiative to address the mental health issues we are meeting in clients – however, there is a growing concern about this issue within the wider population regarded as ‘gathering storm clouds’ coming out of the pandemic and now facing the cost-of-living crisis.

The energy price cap announcement

The price cap on the unit price of energy costs was introduced by Theresa May's Government as a way to protect more vulnerable households to the fluctuations in energy prices, with the aim of preventing the millions of households on expensive standard or default variable tariffs from paying too much. The unprecedented price rises in the price of wholesale gas have exposed the flaws of this policy. The 54% price rise announced on 4th February follows the 12% price rise last October. Industry experts are predicting a further £400 rise in October 2022, meaning a doubling of energy costs in 12 months.

One element most consumers have yet to recognise in the February announcement is that the daily standing charge for electricity is increasing by more than 80% and after April **we all will automatically pay an additional £75** on our annual electricity bill regardless of how much power we consume. For very low-income households who can use self-disconnection as a way to manage their energy costs, this is a major concern.

Renewables and fuel poverty

It is commonly suggested that moving to renewable energy systems will address fuel poverty. While we have been long-term promoters for the uptake of renewable technologies, CEP's experience to date is this is not the case for fuel poor households:

- We believe that there is a significant need for education to help people understand their energy consumption. The roll-out of Smart Meters has been sold on the assumption that providing real time data will help people save money. Our experience is that providing information on an in-home display is not helpful without giving people the tools to interpret and understand it – information without knowledge remains ineffectual. Most in-home displays get used for an initial period and then turned off, put into a drawer and forgotten.
- The Government are keen to encourage the roll-out of heat pumps, forms of electric heating typically drawing heat from the air (Air Source) or the ground (Ground Source) connected to a water based distribution system (radiators). Both the installation costs and running costs are significantly more expensive compared to electric storage heaters. Night storage heaters normally use an Economy7 (E7) tariff, using cheaper off-peak night-time power to charge the heater. Heat pumps don't work in the same way and to be used effectively they need to be

used to provide continuous background heat; they use daytime tariffs. Unfortunately, we have seen several cases where an air source heat pump has been installed but the switch away from E7 wasn't made, creating exceptionally high bills.

- We have also seen households using heat pumps in the same way as gas boilers, switching them on and off as heat was required rather than leaving them on in the background, again creating large bills.
- To get the best out of heat pumps they work most efficiently where a property has a good level of thermal efficiency, but not enough attention is paid to this when establishing the specification prior to installation in many settings.
- Solar PV is still seen as the leading domestic scale renewable technology. Generating clean electricity is fine if behaviours are changed to capitalise on the generation. However, now that feed in tariffs are no longer available, this has been problematic for most domestic properties where consumption patterns don't match peak generation times. One option is to convert the electrical energy into heat energy in hot water tanks, but over the past two decades gas boilers have been installed that don't require hot water storage and lots of properties no longer have an immersion tank.

Policy driving the installation of renewables has largely focussed on creating clean electricity either at a grid scale with large scale solar PV or wind turbines, or at the domestic scale with roof-top solar PV. This progress has meant that while the carbon-intensity of grid supplied electricity has fallen significantly we are still some way from completely renewable electricity grid supply, and hence, the impact on electricity prices of the current situation with gas. A lot has been achieved, but the big issue that has been ignored in this time is how to decarbonise domestic heating. This is a big, costly challenge and while options do exist it will take a major shift in thinking about the way our homes are heated to see the change we need.

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