



Energy efficiency of existing homes

CIEH submission to an inquiry by the Environmental Audit Committee

June 2020

About the Chartered Institute of Environmental Health (CIEH)

CIEH is the professional voice for environmental health representing over 7,000 members working in the public, private and third sectors, in 52 countries around the world. It ensures the highest standards of professional competence in its members, in the belief that through environmental health action people's health can be improved.

Environmental health has an important and unique contribution to make to improving public health and reducing health inequalities. CIEH campaigns to ensure that government policy addresses the needs of communities and business in achieving and maintaining improvements to health and health protection.

The environmental health profession is pivotal in assessing housing conditions and acting to protect and improve the physical and mental wellbeing of tenants and occupiers alike. Environmental health practitioners are involved in enforcing standards in the home and are especially involved in removing and reducing the risks associated with excess cold in the home. The Health and wellbeing of people is closely linked to housing quality. Poor quality housing costs the NHS around £1.4bn and wider society around £18bn every year.

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Key points:

The Government needs to make the energy efficiency of homes a national infrastructure priority and provide the funding required to retrofit homes at scale.

There are important links between reducing fuel poverty, carbon emissions and adverse health outcomes associated with living in a cold uninsulated home. The solution is mutually compatible - an energy efficient home that is cheap to run, it is comfortable and can provide a healthy environment for the occupier.

These issues cut across several different Government departments, which need to work much more closely together to ensure that all benefits and cost savings are counted and included when policy decisions are taken.

Whilst the Government ambition of net zero by 2050 and Band C by 2035 are appropriate, the action taken to achieve these has been inadequate to date. There is a lack of detailed plans, specific targets, government funding and initiatives to ensure that this ambition is achieved at the pace required across all housing tenures.

The minimum standards in the private rented sector are currently set too low and add little value, due to the cost cap exemption for landlords. Houses in Multiple Occupation are currently not required to meet a minimum energy efficiency standard.

Retrofitting existing homes needs an integrated approach to tackle a range of problems at once rather than a piecemeal approach, including problems with damp, ventilation, noise and excess cold.

There are some simple steps that could be taken by central Government to assist environmental health teams in taking enforcement action on cold, inefficient and expensive to heat homes. This includes providing local authorities access to a free standard heat loss calculator, giving environmental health teams a lead enforcement role over EPCs in the private rented sector, and providing clear guidance on possible enforcement action for unaffordable heating systems.

1. Are the Government's targets on residential energy efficiency still appropriate to achieve its ambition to reach net zero emissions by 2050?

The Government targets are still appropriate, however, the action taken to achieve these has been inadequate to date and will need to be ramped-up significantly if the targets are to be achieved at the required pace.

As an interim measure to reaching net zero by 2050, the Government has set an ambition to bring as many homes as possible up to the energy efficiency Band C by 2035 (or by 2030 for fuel poor households) where this is 'cost effective, affordable and practical'. However, the scope of this ambition has not been well defined and a clear trajectory towards this ambition has not been published. Without estimates of the likely numbers of homes to be brought up to Band C by 2035, it will be difficult to estimate how many homes are likely to be left behind in the lower bands, due to not being 'practical, affordable and cost effective' to retrofit.

The UK has some of the oldest housing stock in Europe – most recent data suggests that around one fifth (21%) of the stock was built before 1919.¹ These properties are the most costly to retrofit for energy efficiency. Around 63% of pre-1919 built dwellings would need more than £18,000 spent in order to implement all the EPC recommended energy improvement measures.² A detailed strategy will be needed to cover each housing tenure, as well as Government investment over many years in order to bring all our housing stock up to the higher EPC bands.

a. What are the potential risks and opportunities of bringing forward the Government's energy efficiency target?

Bringing the Government's energy efficiency target forward would require a large-scale investment in the retrofitting of existing homes. This kind of investment could aid the economic recovery following the impact of the COVID-19 pandemic, by creating new jobs and potentially giving people more spending power due to reduced energy bills.

One of the key opportunities of bringing forward this target has to do with the improvement to people's health. Cold homes impact on the health and wellbeing of their occupiers on a huge scale. Over the past 3 years, UK excess winter deaths stood around 35,800,³ and historically, the rate of excess winter deaths in the UK has exceeded that in Sweden, where energy prices are higher and winters more severe.⁴ Wintertime cold weather death rates in the coldest 10% of homes are 3 times higher than in the warmest 10%.⁵

¹ English Housing Survey: [Stock condition](#), 2017, published 2019.

² English Housing Survey: [Energy report](#), 2017-18.

³ Excess winter deaths were 2016/17: 34,300; 2017/18: 50,100; 2018/19: 23,200; All data provisional statistics from ONS.

⁴ [Energy efficiency and excess winter deaths](#): Comparing the UK and Sweden, ACE, Nov 2013.

⁵ Cold comfort Joseph Rowntree Foundation, 2001./ Excess winter deaths and illness and the health risks associated with cold homes, NICE guideline [NG6], March 2015

However, there are specific risks associated with the fact that key infrastructure is missing and there are technical and practical limitations to the available technology. Both houses and cars are set to be switched over from carbon-based power sources to electric in the next two decades. This requires a much bigger electrical supply to be generated to meet this increased demand and for this to also come from non-carbon renewable sources. There are also some technical limitations involving the available low-carbon heating sources. The most common form of ground-source heat pump requires a lot of space. The alternative is the air-source heat pump, but many of these are noisy, which limits use in high-density urban areas. There is a large installed base of electric storage heating in existing housing, but these tend to be unresponsive to sudden cold, and often need topping up when electricity is expensive. This contributes to households suffering from excess cold and fuel poverty, due to the high cost of heating when the home is not well insulated. Furthermore, retrofitting existing homes needs an integrated approach to tackle a range of problems at once rather than a piecemeal approach. Measures to address poor thermal efficiency, overheating, indoor air quality, damp and mould problems, ventilation and low carbon heating systems need to be designed together, so more designed approaches to retrofitting would work better at creating a long lasting and healthy dwelling.

Last but not least, standards for new homes need to be raised quickly. If new homes achieve current standards, these very homes will need to be retrofitted later on in order to achieve net zero.

b. Should Government targets for energy efficiency be legislated for, and if so, what difference would this make?

At the moment, the Government has an ambition to improve energy efficiency. By enshrining more specific targets for energy efficiency in legislation, the Government would be legally obliged to implement the schemes, and provide the funding required to meet them. For instance, targets should be specific and outline how many buildings will be insulated in order to meet the ambition of getting as many homes as possible to Band C by 2030.

2. How effective is the EPC rating at measuring energy efficiency? Are there any alternative methodologies that could be used? What are the challenges for rural areas?

Whilst the EPC rating has its flaws, it is currently the only measure of energy efficiency that has been widely recorded at a national level, which makes it a useful measure for improvements. However, EPCs are most effective in assessing standard-built forms that are typical of their construction date, but less effective in dealing with vernacular or atypical architecture. EPCs also use national defaults for running costs, which are often inaccurate for a particular property, and do not allow for improvements that are not visible to the naked eye of the assessor.

Rural areas also have some specific challenges, including:

- Lack of standard building patterns make it difficult to roll out an easily copied upgrade pathway
- Low housing density makes shared energy resources, such as district heating, impractical
- Overall, rural buildings can have fewer sheltered walls (fewer terraced houses, more detached properties)

3. How will lack of progress on residential energy efficiency impact the decarbonisation of heat and the associated costs of this?

In order to decarbonise heat, the fabric of buildings will first need to be made much more efficient. The resultant reduction in the demand for energy to heat the dwelling will make carbon-free electricity generation more feasible, especially when considered alongside other increased demands on electricity, such as the expected switch to electric vehicles. In short, the more buildings are well insulated, the less energy will need to be de-carbonised.

There are opportunities to utilise existing urban space for energy generation and thus decarbonisation to meet demand. Urban areas have a large proportion of roof space that could be used for energy generation – both wind and solar – which could provide some of the additional electrical supply needed to meet increased demand if dwellings are switched over from gas to electricity en masse. Significant increases in energy generation from new-build properties are also possible and should be considered.

This approach of reducing demand also has the benefits of addressing fuel poverty, high energy costs and the health impacts due to cold homes. These are the ‘hidden’ cost savings. More energy efficient homes and lower demand for energy to heat these may also help consumers to make the switch from a gas boiler to an electrical heating source. At the moment, this move makes no financial sense as the cost of electrical heating systems is far higher than that of gas. For those living in fuel poverty, it is even more important to get the economic case right, to ensure that any legislation imposed in a blanket way does not inadvertently harm those most vulnerable.

4. How can the Government frame a Covid-19 stimulus strategy around improved energy efficiency of homes?

The Government needs to make the energy efficiency of homes a national infrastructure priority and provide the funding required to retrofit homes at scale. This will provide a significant stimulus to the economy and aid its recovery from the impact of the COVID-19 pandemic. This would include the creation of high quality jobs ranging from design, advice provision, engineering, construction and monitoring.

5. Is the £5 million Green Home Finance Innovation Fund enough to stimulate the market for and drive action from the banks to encourage owner occupiers to improve the energy efficiency of their homes?

No comment.

a. What policy and/or regulation could supplement it?

Local Authorities could be provided with capital funding so that they could issue interest free loans to local residents for retrofitting their homes. The loans can be repaid from the savings made in their energy bills or from the proceeds of the next sale of the property.

Access to impartial advice is important to ensure that owner occupiers have the information they need to make the best investment in improving energy efficiency of their home, long-term.

Currently an EPC is required to be provided when a house is sold or let, but there is no financial incentive offered for those who improve the energy efficiency of their home. The investment into solar panels or solid wall insulation, for example, can be substantial and this might not always be recouped in higher sale price if the owner decides to move home. A financial incentive in stamp duty reductions or other financial incentives would encourage more owner occupiers to make these kinds of long-term investments.

b. Which models in other countries have been successful at stimulating demand for energy efficiency within this market?

One example from Europe is the low interest loans from the German KfW bank,⁶ where lower interest rates are in place for building more energy efficient homes.

6. What additional policy interventions are needed for social housing, leaseholders, landlords and tenants?

The Minimum Energy Efficiency Standard for the private rented sector is set at Band E, with a cost exemption for properties, where it has not been possible to reach Band E after the landlord has spent £3,500 (inclusive of VAT). This cost cap actually means that around half of all Band F and G properties are not brought up to a Band E standard.⁷ Furthermore, a proportion of homes in Band E are likely to have a Category 1 excess cold hazard under the Housing Health and Safety Rating System (HHSRS), meaning that this is a serious enough for a local authority to take formal action due to the impact on the health of the occupier. This results in the MEES not being used as much as it could be by local authorities, because it is more effective to take enforcement action under the HHSRS to protect a tenant from excess cold. A higher standard for PRS, without a cost exemption, would be more effective and useful for enforcement authorities.

Furthermore, Houses in Multiple Occupation are excluded from any minimum standards on energy efficiency, which seems an oversight, given that these buildings are often occupied by the poorest and most vulnerable. These buildings should be brought into the MEES regime to match the rest of the PRS.

⁶ <https://www.kfw.de/inlandsfoerderung/Privatpersonen/Neubau/index-2.html>

⁷ Table 5, [Final Stage Impact Assessment: Amending the Private Rented Sector Energy Efficiency Regulations](#), BEIS, 2018.

Furthermore, there are a number of different standards that do not align well. Both the Decent Homes Standard for social housing and the HHSRS for the private rented sector need to be updated in relation to thermal comfort and excess cold. Neither of these currently align well with energy efficiency or net zero, in fact these can contradict one another. For example, action to remove an excess cold hazard, can result in electrical heating being replaced by gas central heating, because it is more affordable and more likely to be used by the tenant.

There are also some simple steps that central Government could take to assist environmental health teams in taking enforcement action on cold, inefficient and expensive to heat homes. This includes providing access to a free standard heat loss calculator, giving environmental health teams a lead enforcement role over EPCs in the private rented sector, and providing clear guidance on possible enforcement action for unaffordable heating systems.

7. How should the proposed Home Upgrade Grant Scheme be delivered to help the fuel poor? Should the new grant scheme supplement ECO in its current form, or should ECO be redesigned?

The Home Upgrade Grant (HUG) scheme will provide the funding needed to help get the Government towards meeting its statutory fuel poverty target. In its most recent annual report, the Committee on Fuel Poverty estimated that extra funding is needed between now and 2030 to meet the target.⁸ The HUG would contribute to plugging this gap, along with new funding for social housing. Meeting the fuel poverty target will also require an increase in minimum energy efficiency standards for private rented homes, and reform to ECO to make it better focused on fuel poverty.

In the short- to medium-term the HUG scheme should be designed to supplement the current ECO scheme, which runs until 2022. In the longer-term, ECO should be reformed to address shortcomings in the existing scheme and make it better focused on fuel poverty. In this post-2022 phase, ECO and HUG should be designed to complement each other.

8. Are there examples of where energy efficiency policy has fallen between Government Departments? How could cross-departmental coordination be improved?

Improving energy efficiency helps to tackle climate change, creates new skilled employment, stimulates economic growth, improves the housing stock, reduces fuel poverty, and improves health and wellbeing of the population, thus reducing demand and costs for the NHS and social care. As a result, energy efficiency policy needs to be properly co-ordinated between the Department of Business, Energy and Industrial Strategy (BEIS), the Ministry of Housing, Communities and Local Government (MHCLG) and the Department of Health and Social Care (DHSC). The solution and investment needed actually tackles several different problems at once. Where important policy decisions are being made, it is important that all

⁸ Interim report, CFP, 2019.

important benefits are costed up, rather than solely looking at the savings made to energy bills. This is misleading and does not show the true long-term value of retrofitting existing buildings.

Budget must be made available from all relevant departments to ensure that enough investment is given to this important priority and all co-benefits of energy efficiency measures are properly counted. This should ensure, for example, there is no repeat of the calculation that gave the optimal MEES spend of £3,500, where the healthcare costs were not fully accounted for in the impact assessment done by BEIS.⁹ The end-product of this was that the very worst properties, in which more people would have long-term health impacts from excess cold - and thus be a major burden on the NHS - were actually excluded from the requirement to have full energy efficiency upgrades.

⁹ [Final Stage Impact Assessment: Amending the Private Rented Sector Energy Efficiency Regulations](#), BEIS, 2018.