

Background

National Grid sits at the heart of Britain's energy system, connecting millions of people and businesses to the energy they use every day. We understand our responsibilities to the environment and future generations, so we are working to develop solutions to make the transition to a clean economy in which nobody is left behind. Furthermore, as we look ahead toward recovering from the COVID-19 pandemic, it is important that we seize the opportunity to be world leading in decarbonising our economy as a driver of economic growth.

We believe that decarbonising heat will be key to realising the UK's net zero ambition as heating accounts for more than a third of the UK's greenhouse gas (GHG) emissions¹. The Committee on Climate Change (CCC) has emphasised major improvements to the energy efficiency of buildings as one of the key near-term actions to put the UK on track to net zero GHG emissions by 2050². This low regret option will improve comfort levels, help consumers to manage energy bills and prepare the building stock for a switch to low carbon heating, which is why we believe this topic merits the Committee's attention.

Please find below answers to the questions posed by the Committee:

1. Why should the Committee consider the energy efficiency of existing homes as a priority?

Reduces the scale of the challenge

Heat currently represents more than a third of the UK's total greenhouse gas emissions, with around 85% of UK households (24.5 million) reliant on natural gas for heating³. Also, approximately 80% of existing homes will still be occupied in 2050⁴. If decarbonisation of heat is to be successful, around 20,000 homes per week for the 25 years from 2025 to 2050 will need to move to a low carbon heat source⁵. Therefore, action is needed sooner rather than later if the UK is to achieve the net zero target.

Improving energy efficiency in existing homes to at least EPC rating "C" is a low regret action that will help to reduce the scale of the decarbonisation challenge and is a measure that applies to all decarbonisation pathways. Energy efficiency measures have already been successful in reducing energy demand in the UK, with such measures being a cost-efficient way to help meet the future energy challenge. Peak energy consumption occurs when the weather is cold in winter. Ways of reducing this peak will help reduce infrastructure and production costs, improve security of supply and improve the quality of life of households. Therefore, energy efficiency should be a short-term policy priority in the decarbonisation of heat. Energy efficiency measures could be especially important to ensure effectiveness of certain low carbon heat technologies that may be installed in homes.

Supports a just transition

National Grid recognises the importance of achieving a just transition where the benefits are felt by all, with nobody left behind. During our soon to be published research exploring consumer attitudes to different low carbon heating options, we met a renter in Hull who lives in a poorly insulated home and is struggling to afford to heat the whole house. Consequently, he only heats the rooms that his family uses, doing so at the time of use. This has led to damp in parts of the house that are rarely heated, which has in turn caused disputes with his landlord. With the UK known to have one of the most inefficient housing stocks in Europe, housing energy efficiency is an urgent measure that could help to significantly improve the quality of life for the fuel poor and vulnerable, while also helping to reduce CO₂ emissions. A large-scale deployment of standard solutions based upon house type could reduce costs to consumers if coordinated effectively.

¹ BEIS (December 2018): [Clean Growth – Transforming Heating](#)

² Committee on Climate Change (May 2019): [Net Zero: the UK's contribution to stopping global warming](#)

³ BEIS (December 2018): [Clean Growth – Transforming Heating](#)

⁴ Buro Happold: [Domestic UK Retrofit Challenge: Current performance and barriers leading into the Green Deal](#)

⁵ National Grid (March 2018): [The Future of Gas: how gas can support a low carbon future](#)

Supports the effectiveness of low carbon heating solutions, thereby enhancing consumer acceptance

There is no one optimal pathway to decarbonise heat. Our view is that it will be a mosaic of different solutions (fuels and technologies) depending on specific circumstances such as geographical location and the type and age of housing stock. It is also worth noting that some technologies are at different levels of maturity and deployment.

During our soon to be published heat consumer research, consumers told us that being warm and comfortable in their homes was the key driver for accepting low carbon heating options other than natural gas. They are unwilling to tolerate any option that could result in a deterioration of the quality of heating currently predominantly provided by gas. Therefore, improving the energy efficiency of existing homes will be important as certain low carbon technologies require a property to be efficient in order to function optimally. This will help the UK to meet its net zero target whilst maintaining acceptable levels of comfort and supporting jobs across the country.

2. What are the key issues that the Committee should consider under energy efficiency of existing homes?

There are a few issues the Committee could consider as part of its inquiry, some of which include the following:

Funding the upgrade – during our soon to be published research mentioned elsewhere in this submission, consumers emphasised the high upfront cost for upgrades to their homes as a significant barrier to making choices that could help deliver the net zero target. We recognise that there currently is a mix of incentives and obligations to support the upgrade but there is a question about the adequacy of these, given the scale of the challenge we face. There's commentary to suggest that options such as a stamp duty rebate for homes sold with an EPC rating of 'C' and higher should form part of the incentive mix. We would like the Committee to consider the role and adequacy of incentives to improve the energy efficiency of the UK's housing stock. It could also consider the potential for government capital expenditure in this area to enable the UK's transition to a clean economy.

Setting targets for the upgrade – the Government set out in the Clean Growth strategy its aspiration for as many homes as possible to be EPC Band C by 2035 where practical, cost-effective and affordable, with an earlier target of 2030 for homes in fuel poverty. This aspiration should become a target, clearly setting out the number of homes to be upgraded annually. This is an area we would like the Committee to consider in its inquiry.

Coordination of the upgrade – a successful upgrade of the UK's housing stock will require proper coordination. Arguments have been made for a single organisation to be responsible for the insulation of homes and businesses. In coordinating the delivery of a large-scale upgrade, the sale of a property has been suggested as a 'trigger event' to require that a property be improved to meet a defined energy efficiency standard. An estimated one million homes annually could be covered under such a measure. We would like the Committee to consider how the large-scale insulation of our existing housing stock could be coordinated.

Removing barriers – energy efficiency incentives and policies should consider strategies for overcoming barriers to energy efficiency adoption, such as the 'split incentive' barrier between landlords and tenants in the rental and multifamily building sector. Split incentives exist where the actor who pays for the energy efficiency investment, typically the landlord, is not the same as the actor who benefits from reduced energy bills or increased comfort, the tenant.

3. How effective is government policy in relation to energy efficiency of existing homes?

We believe that the government's commitment to a 'Heat and Buildings Strategy', expected this Autumn, will be an important stepping stone to create the level of change needed in this sector to achieve net zero. A successful large-scale deployment of energy efficiency measures across the existing housing stock will need to be underpinned by effective government policy.

We recognise that government has previously introduced a few policy measures to support the adoption of improved energy efficiency. However, these previous measures haven't necessarily resulted in the scale of uptake previously expected, or the scale required to achieve the enhanced ambitions for net zero which was legislated for last summer. As an example, the government previously created the Green Deal to support homes and businesses deliver energy-saving improvements. The NAO confirmed that the government's design and implementation of the Green Deal policy did not persuade householders that energy efficiency measures are worth paying for⁶. This resulted in the current gap in the 'able-to-pay' sector.

Looking ahead, a key policy focus for energy efficiency should be in relation to looking at funding options for a large-scale upgrade across the country, and as part of national ambitions to lower emissions from heating. It goes without saying that lessons should be learned from previous policy attempts, such as the Green Deal, in designing any new policy and attempting to create the behavior change and action required across the economy to improve the energy efficiency of the nation's building stocks.

In addition, having a clear target on the number of homes to be upgraded annually would support the measurement of the effectiveness of any funding mechanisms developed. Currently, there are no government targets, only an aspiration for as many homes as possible to be EPC band C by 2035. A sustainable deployment trajectory could help to prepare supply chains (including skills and resources) for the scale of opportunity available across the country. Proper coordination would support the effectiveness of government policy in this area and having a single accountable organisation merits consideration.

⁶ National Audit Office (April 2016): [Green Deal and Energy Company Obligation](#)