

Energy Security and Net Zero Select Committee Inquiry: Heating Our Homes Response submitted by the Centre for Energy Policy

ABOUT THE CENTRE FOR ENERGY POLICY

The University of Strathclyde's Centre for Energy Policy (CEP) works with research, government and industry partners to understand and address the pressing public policy challenge of ensuring transitions to mid-century Net Zero targets deliver sustainable and more equitable prosperity. Since its launch in 2015, CEP has established a solid track record of independent, rigorous and multidisciplinary research and timely and responsive knowledge exchange and policy engagement on energy and climate issues set in a wider public policy context. Focused on achieving real-world impacts, the Centre has helped shape UK and Scottish Government policy in areas including energy efficiency, industrial decarbonisation, heat decarbonisation and low carbon transport.

<https://www.strath.ac.uk/humanities/centreforeenergypolicy/>

RESPONSE

CEP's response focuses on questions 1, 2, 7 and 11 posed by the inquiry, and is based on our peer-reviewed evidence base on energy efficiency and the low-carbon heat transition.

Q1: What policy changes are needed to deliver energy efficient homes across the UK?

1.1 Our research suggests that this question needs to be set in a wider public policy, economic and societal context. Specifically, our research demonstrates that energy efficiency measures can have positive impacts on a range of economy wide and welfare outcomes with the implication that policy needs to shift in ways that maximise a potential wider set of gains that should be set against policy delivery costs and any potentially negative wider economy impacts. Our research highlights that action to increase the energy efficiency of homes across the UK can:

- Stimulate sustained growth across the economy by increasing and freeing up real household income through energy bills savings. This stimulates economic expansion in a manner that supports more jobs, increases real wages and reduces the energy intensity and fossil fuel dependence of a higher GDP trajectory, while also reducing energy poverty and the cost of running households. However, the maximisation of real gains depends critically on addressing supply constraints, particularly in the UK labour market.
- Drive entrepreneurial activity in delivering more energy efficient technology and equipment in ways that present opportunities for expansion and investment across a range of different sectors. The main constraint will again be labour market conditions, with particular challenges in terms of the skills available to build strong domestic supply chains in new business around retrofitting properties etc.
- Strengthen energy security and resilience to future shocks through efficiency-driven decreases in energy demand.^{i ii iii}

Generally, the likelihood and magnitude of any potential wider economic gains depends on how actions are funded (i.e., grants, loans or households paying upfront), signalling by government on the extent and length of the programme and the impact of constrained labour markets and skills therein. Nonetheless, even in the presence of persisting labour supply constraints, our analysis suggests that where a 15-year retrofitting programme aiming to bring most UK households to EPC band C by 2035 could achieve 10% energy efficiency gains across UK homes, the positive impacts on real household incomes and spending power could support a 0.07% sustained GDP gain per annum, 19,500 FTE jobs supported, a

0.41% increase in real household spending and a 1.3% reduction in total energy use. GDP gains could be considerably greater (up to 0.25%) and jobs supported increasing to 64,700 FTE if the price and cost impacts of labour supply constraints do not limit the expansion by introducing cost and price pressures across the system.^{iv v} This would potentially involve policy action on upskilling and labour market participation.

1.2 In order to achieve these benefits we need policy frameworks and clear direction for sustained action, building certainty for industry, allowing for investment in developing the required supply chains.

1.3 Our research suggests that investing in long-term programmes to enable efficiency gains, such as the UK Energy Company Obligation (ECO), can deliver some extent of economy-wide benefits and boost the incomes of the lowest income households.^{vi} Therefore, action over sustained periods is critical to provide the correct signals and certainty to industry and de-risk investment. However, interventions such as the Green Homes Grant and [the Social Housing Decarbonisation Fund and the Home Upgrade Grant](#) (announced in 2022) have been short-term – only a couple of years each.

1.4 CEP research suggests energy efficiency improvement programmes can ultimately deliver between 1.8 and 6.6 FTE jobs, and between £4.3M and £14.1M cumulative GDP gains, per £m spent.^{vii} However, our analysis highlights that existing constraints on the skilled labour required to deliver retrofitting at scale could prove challenging. It also suggests that steady action over a sustained period smooths out the labour requirements and the wider economic impacts.^{viii} The impact of constrained labour markets in terms of wage pressures and displacement on Net Zero project delivery and wider economic gains associated with Net Zero policy action is a common finding throughout our work looking across the Net Zero space including Carbon Capture Utilisation and Storage^{ix x} and electric vehicles.^{xi} Any energy efficiency policies developed need to consider these issues, which should also be addressed through wider labour and skills policy agendas.

1.5 Another central issue is around how residential energy efficiency actions are funded. For example, when households incur the costs of purchasing a new boiler or installing better insulation, this will introduce a budgetary constraint on the household spending injection to the economy. Where the household spending requirement can be smoothed through low-cost finance spread over several years, or some ‘no cost’ (directly to the household) option (i.e., a government grant) is available, this will relax the budget constraint. Our research finds that across the duration of a long-term 15-year large scale energy efficiency programme, the provision of grant finance could enable GDP gains up to twice as large as they would be under any private spending approach.^{xii} However, it may also be necessary to evaluate and redesign how existing support mechanisms, such as ECO, are implemented. The current design creates the potential for prices to be inflated by suppliers, either to cover the cost of activities that are necessary but do not improve the efficiency of properties (e.g., to clean up after a cavity wall insulation) or simply to extract higher profits. Our research^{xiii} has shown that the level of prices paid for retrofitting activities can play a key role in determining the effectiveness of funds allocated in improving the energy efficiency of households.

Q2: What are the key factors contributing to the under-delivery of the UK’s government-backed retrofit schemes?

2.1 Our research suggests that a lack of sustained investment through long-term energy efficiency programmes and a lack of consideration of current labour supply constraints have contributed to the under-delivery of UK-Government backed retrofitting schemes. It is important to note that early action on energy efficiency could have reduced the burden of

high energy prices (which are set remain high until 2030) due to the persisting energy price shock on households.

2.2 Another factor coming from our stakeholder engagement-based research^{xiv}, is the challenge posed by the complexity of the funding schemes, especially for vulnerable households. Fuel poor and other vulnerable households are likely to benefit the most from retrofitting schemes, but there is a lack of awareness of the help available, it is perceived as a complex lengthy process, and there is also a stigma attached to 'asking for help'. All these reasons contribute to the low uptake of this kind of support across many households. Here, specialist third sectors actors (e.g. THAW Orkney^{xv} or National Energy Action^{xvi}) can help 'bridge the gap' and assist vulnerable households to apply and get support. But there are limitations on how many households can be supported this way, so a simpler more streamlined process should be put in place. In addition to campaigns to publicise widely the schemes available.

2.3 The lack of a sufficiently large skilled workforce to develop retrofitting activities is another major factor, slowing the implementation of energy efficiency activities. This leads to potential low-quality of even dangerous installations, and/or very long lead times. Our research suggests that this challenge is exacerbated in some remote areas, such as Orkney and the Highlands, which also suffer some of the highest levels of fuel poverty in the UK.

2.4 As highlighted in 1.4, the issues of constrained labour markets and insufficiently skilled workforces present potential barriers to Net Zero progress across the board. Highlighted recently in a report produced by the Future Energy Skills programme and which CEP contributed to.^{xvii} The report calls for a 'clear committed policy roadmap for heat and buildings all the way through to 2050'. Our work in this area suggests that the evidence-base for this action needs to be further strengthened, with investment in research to bridge the current knowledge gap around labour supply and skills issues in relation to Net Zero. To date, most research has focused on the demand for jobs.

Q7: How will the public be able to afford the switch to decarbonised heating?

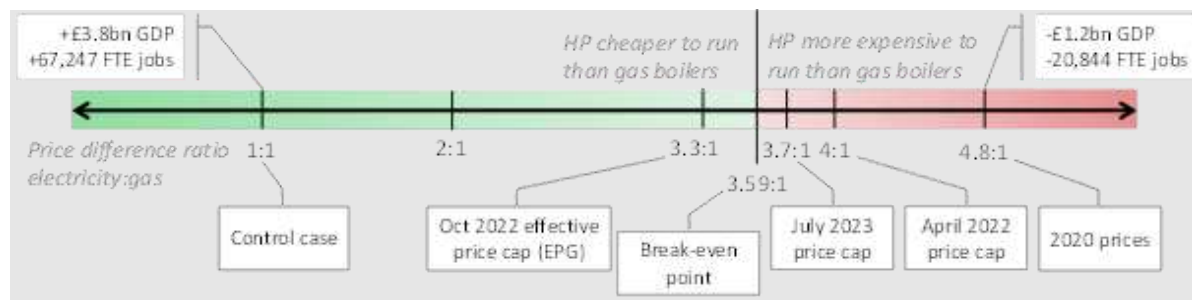
7.1 Addressing the question of who pays is fundamental to the pressing public policy challenge of transitioning to Net Zero as a whole, and in identifying and building consensus around economically and politically feasible policy pathways.^{xviii}

7.2 Issues of cost and affordability in relation to decarbonised heating are brought into particularly acute focus given persistently high energy prices which are expected to remain high until 2030.^{xix} Our analysis^{xx} as part of the UKERC programme suggests that, as annual average energy prices peak in 2024, GDP will fall by over £74.4BN (3.8% drop) compared to what it otherwise could be, with this triggered by a drop in household spending of £123.7BN (9.6%). Low-income households are being hit hardest with research^{xxi} showing that the 20% of UK households on the lowest incomes are being hit by a 50% larger increase in the cost of the average basket of goods and services due to rising electricity and gas prices, and the higher proportion of their income that they spend on energy and food. Moreover, this effect is spreading beyond those on the lowest-incomes, with our results suggesting that 40% of UK households are facing cost-of-living increases at least 25% higher than the UK average in 2023.

7.3 As highlighted in our response to Q1, the evidence is clear that investing in long-term energy action programmes can bring significant energy savings, reduce the burden of high energy prices on households and positively impact the wider economy.

7.4 Actions to transition to low-carbon heating such as the rollout of heat pumps can also mitigate the negative impacts of high energy prices on households and the wider economy. CEP's work^{xxii} as part of the UKERC programme exploring a sustainable and equitable heat transition suggests that the rollout of heat pumps in line with UK Government ambitions could lead to a range of economic benefits including GDP gains and jobs supported. However, in order to achieve these gains and generate energy bill savings for households, efforts need to be focused on reducing the price of electricity relative to gas. Our analysis finds that the breakeven point in the price difference ratio of electricity to gas is 3.59:1, anything higher erodes the effect that the energy savings from using heat pumps have on households' energy bills, real income gains and spending power. See Figure 1.

Figure 1. Impact of different GB energy market conditions on the electricity: gas retail price difference ratio



7.5 As highlighted in responses to Q1 (1.3, 1.4 and 1.5), affordability for households of the transition to low-carbon heating can also be improved through low-cost finance, government grants and sustained investment in long-term programmes. Arguably, it may not be possible to provide access to these support mechanisms to all households, regardless of their income status, therefore it is key to identify the appropriate targeting of each funding mechanism.

7.6 More broadly, it is important that UK Government signal its recognition that affordability is a critical issue in delivering the transition to Net Zero, including low-carbon heating. The UK Government Strategy and Policy Statement for Energy Policy^{xxiii}, which is currently being consulted on, could help do this. In particular, the priority around 'ensuring energy security and protecting consumers' could go further in setting out clear policy outcomes around the 'accessibility' and 'affordability' of energy.

Q11: What is the role of different levels of government in developing, funding and implementing schemes?

11.1 Coordination across different levels of government in developing, funding and implementing schemes in relation to the low-carbon heating and the Net Zero transition more broadly is critical. For example, where schemes are focussing on low-income households or households residing in social housing, coordination with local government is essential as local officials are either in charge of managing social housing or have a better overview of the challenges faced by their local residents. There have been relevant initiatives in Scotland (e.g., Home Energy Efficiency Programmes for Scotland, HEEPS) so it would be useful to assess their effectiveness and identify the strengths and weaknesses with a view to inform similar future approaches.

11.2 The interaction between national, devolved and local governments will also be imperative in relation to designing and implementing policies focused on ensuring that there is an adequately skilled workforce in place to deliver low-carbon heating and the Net Zero transition more broadly. Forthcoming CEP research highlights that there will be winners and losers across sectors and regions in terms of the jobs and skills implications of heat pump

deployment, all of which will need to be considered within the wider context of 'levelling up', labour market participation and Net Zero skills agendas where authority and accountability is dispersed across various levels of government.

11.3 Coordination between UK and devolved administrations is critical. Particularly in light of recent comments in the 2022 Climate Change Committee's report to the Scottish parliament^{xxiv} which highlighted that while Scottish Government has made good progress on measures such as local energy and heat network it 'does not have adequate policies in place to deliver low-carbon heat and energy efficiency at the required rates and lacks the powers required to implement certain policy levers.'^{xxv}

11.4 The types of coordination required could also be set out more fully in the Strategy and Policy Statement for Energy Policy (SPSEP). Specifically, the SPSEP would benefit from some articulation of how it will integrate with wider economic decision-making in HM Treasury and ambitions around economic growth. Some articulation of how it will interact with and apply to other UK Government departments would also be useful, e.g., DLUHC and efforts to address regional inequalities through 'levelling up'. In addition, it could also outline anticipated nature of interactions with devolved bodies and local authorities. Currently, the SPSEP identifies that 'some aspects of energy policy fall within the legislative competence of the Scottish Parliament and government and the Senedd/Welsh bodies'. Yet the statement would benefit from some further articulation of the different and critical roles that devolved governments and local government have to play in delivering these ambitions, and the responsibilities at local, devolved and national levels for ensuring effective coordination.

ⁱ <https://doi.org/10.1016/j.enpol.2021.112375>

ⁱⁱ <https://doi.org/10.17868/strath.00082777>

ⁱⁱⁱ <https://doi.org/10.17868/strath.00082700>

^{iv} <https://doi.org/10.1016/j.enpol.2021.112375>

^v <https://doi.org/10.17868/strath.00082700>

^{vi} <https://doi.org/10.1016/j.enpol.2021.112375>

^{vii} <https://doi.org/10.1016/j.enpol.2021.112375>

^{viii} <https://doi.org/10.17868/77545>

^{ix} <https://doi.org/10.17868/strath.00086068>

^x <https://doi.org/10.17868/strath.00085736>

^{xi} <https://doi.org/10.17868/78270>

^{xii} <https://doi.org/10.17868/strath.00082700>

^{xiii} <https://doi.org/10.1016/j.enpol.2021.112375>

^{xiv} <https://www.scottishinsight.ac.uk/Programmes/JustTransition/FuelandTransportPoverty.aspx>

^{xv} <http://www.thaworkney.co.uk/>

^{xvi} <https://www.nea.org.uk/>

^{xvii} <https://futureenergyskills.co.uk/publications>

^{xviii} <https://doi.org/10.1177/0269094220984742>

^{xix} <https://www.gov.uk/government/publications/valuation-of-energy-use-and-greenhouse-gas-emissions-for-appraisal>

^{xx} Turner, K., Gross, R., Katris, A., Calvillo, C., Zhou, L. and Corbett, H. (forthcoming) Unlocking the efficiency gains of switching to heat pumps: an economic opportunity? The importance of heat pump cost reduction and domestic supply chain development in the presence of persisting energy price shocks.

^{xxi} Understanding economic and household impacts of energy price shock and £400 Energy Grant Payment (2022). Available at: <https://www.strath.ac.uk/humanities/centreforenergypolicy/newsblogs/2022/energypriceshocksauq22/>

^{xxii} <https://www.strath.ac.uk/humanities/centreforenergypolicy/ourprojects/deliveringgasustainableandequitableheattransitionseht/>

^{xxiii} <https://www.gov.uk/government/consultations/strategy-and-policy-statement-for-energy-policy-in-great-britain>

^{xxiv} <https://www.theccc.org.uk/publication/scottish-emission-targets-progress-in-reducing-emissions-in-scotland-2022-report-to-parliament/>

^{xxv} <https://www.theccc.org.uk/publication/scottish-emission-targets-progress-in-reducing-emissions-in-scotland-2022-report-to-parliament/>