

Energy Security and Net Zero Select Committee Inquiry: Preparing for the Winter 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/>

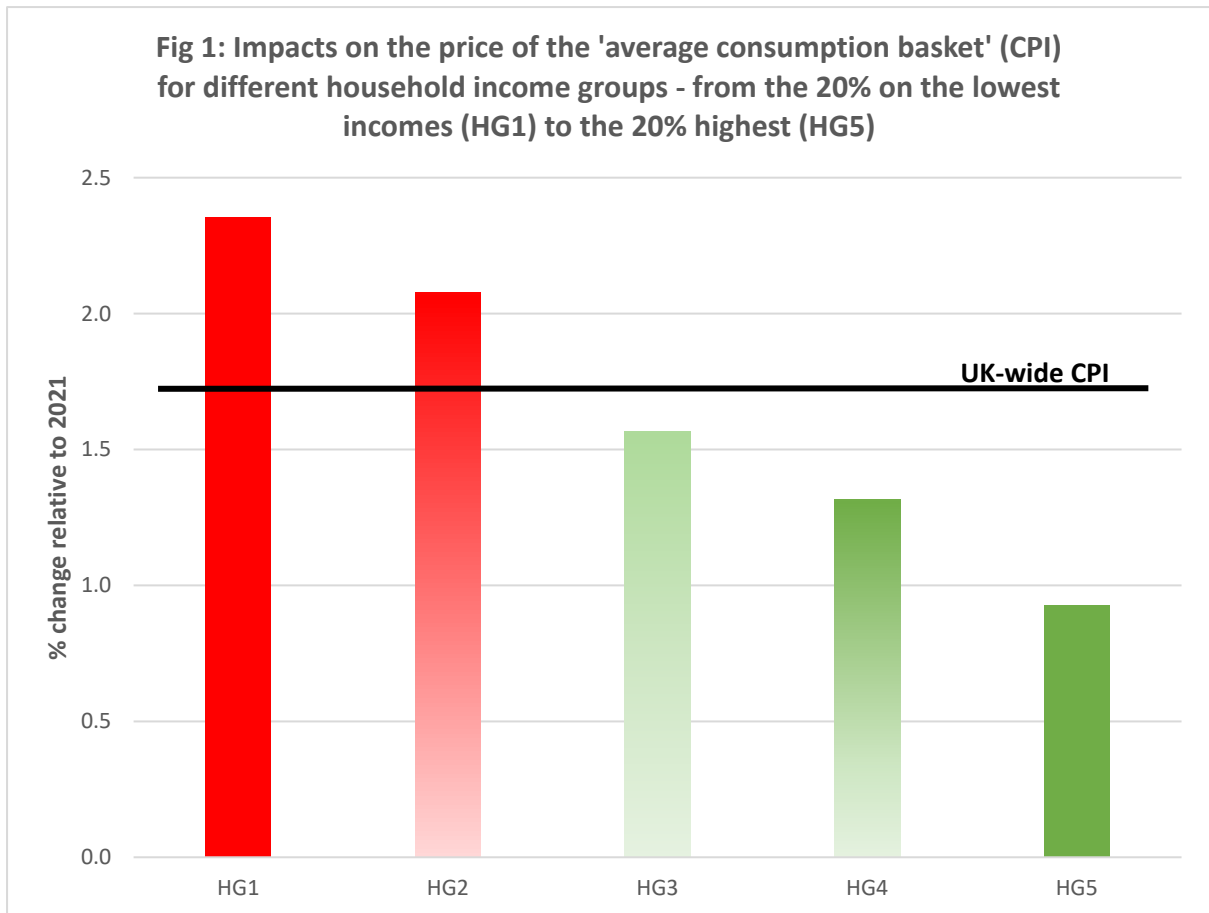
RESPONSE

CEP's response focuses on questions 2 and 5 posed by the inquiry, and is underpinned by our solid and peer-reviewed evidence base on energy efficiency and the low-carbon heat transition.

Q2. What more could have been done to prevent price shocks being passed to consumer bills?

2.1 The overall impact of the energy price shock on households and the wider economy continues to be significant. HM Treasury (HMT) and the Department of Energy Security and Net Zero (DESNZ) anticipate that annual average electricity and gas prices will peak in 2024 and that high energy prices relative to long term average prices will persist until 2030. Forthcoming CEP researchⁱ as part of the UK Energy Research (UKERC) programme suggests that this peak in high energy prices in 2024 could be directly associated with a reduction in per annum GDP of over £74.4BN (3.8%) compared to what it otherwise could be, with this primarily driven by a £123.7BN (9.6%) drop in household consumption in the same year.

2.2 Low-income households are hit hardest by higher energy prices. Mainly because they spend a larger share of their income on bills associated with necessary energy use, but also because other necessities – such as food – tend to be more energy-intensive in their production and delivery so that higher energy prices transmit through multiple areas of non-luxury spending. Our researchⁱⁱ shows that while the absolute value of energy bills and real spending power losses in those 20%-40% of households on the lowest incomes is less than those households on mid-to-high incomes, in percentage terms the impacts are greater. 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. 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 the coming year. See Figure 1.



2.3 Government did provide support for all consumers in the form of the £400 Energy Grant Payment, the Energy Price Guarantee and Cost-of-Living payments and this was important, as was the critical uprating of benefits in line with inflation. However, going forward, more targeted support for those on the lowest-incomes and whose energy bills constitute a large share of their total spending should be considered.ⁱⁱⁱ

2.4 As set out in more detail in our response to Question 5 below, Government action to review how energy prices are set will be critical in mitigating the negative impacts of persistently high energy prices until 2030 on households' energy bills.

2.5 Early action on energy efficiency could also have reduced the burden of high energy prices on households. Our research indicates that energy efficiency measures can:

- Stimulate growth by freeing up real income in a manner that generates jobs, increases real wages and reduces the energy intensity and fossil fuel dependence of a higher GDP trajectory, while reducing energy poverty and the cost of running households.
- 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.
- Strengthen energy security and resilience to future shocks.^{iv v vi}

It is arguable that if greater efforts had been made to retrofit properties to be more energy efficient and shift them away from (particularly imported) fossil fuel dependency earlier, households, businesses, and our energy supply would now be more resilient to existing and emerging pressures.^{vii} This impresses the importance of future action on energy efficiency,

particularly targeted at lower income households, if the impacts of persisting and future energy price hikes are to be lessened.

Q5: How effective is the Government's approach towards supporting the sector and delivering a functioning energy market?

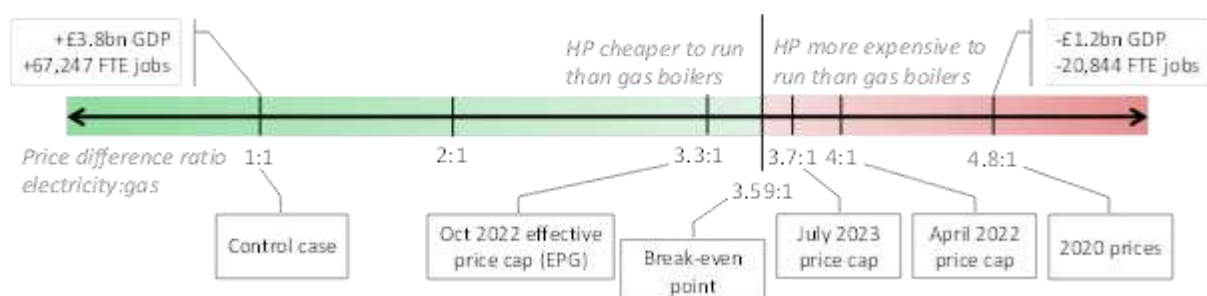
5.1 Efforts to strengthen understanding that can inform action on addressing how energy prices are set will be critical to reducing the burden of high energy prices on households.^{viii} In particular, focus needs to be targeted at:

- Decoupling the price of electricity from gas (i.e., how the cost of gas generation affects the retail price of electricity and prevents the falling costs of renewable energy production being passed onto consumers).
- Assessing how standing charges are constituted and charged, including the variations across regions and types of consumers, and their impacts on consumer bills.
- Re-examining the role of the energy price cap and whether in its current form it offers protection to the most vulnerable customers including those on the lowest-incomes. This needs to take place within a wider review of persistent market failures in the energy market which initiatives such as promoting consumer switching have failed to address.

5.2 Energy prices, and in particular the relative prices of electricity and gas, will be fundamental to achieving the UK's Net Zero ambitions. This is underscored by CEP's work^{ix} as part of the UK Energy Research Centre (UKERC) programme exploring a sustainable and equitable heat transition. Our research suggests that the rollout of heat pumps in line with UK Government ambitions could in principle lead to a range of quite substantial economic benefits - GDP gains of £3.8 BN and the net creation of around 67,245 full-time equivalent (FTE) jobs – as well as energy saving gains of up to 40%. However, this is based on a scenario of a hypothetical price parity (1:1) between gas and electricity. See Figure 2, where this has been a control case in our analysis of the wider economy impacts of the projected heat pump roll-out.

5.3 Under existing market arrangements heat pumps can be more expensive to run than gas boilers. Historically, electricity has been more expensive than gas, which erodes the effect that the energy savings from using heat pumps have on households' energy bills, real income gains and spending power, which would otherwise trigger the wider economy expansion considered above. From our analysis, we find that the breakeven point in the price difference ratio of electricity to gas (i.e., the point at which the physical energy efficiency gains of heat pumps is just sufficient to offset the higher relative price of electricity) is 3.59:1. At any ratio above this, household energy bills will rise causing household real spending to fall, triggering contractionary processes in the economy. See Figure 2.

Figure 2. Impact of different GB energy market conditions on the electricity: gas retail price difference ratio



5.4 This highlights the importance of a broader rethink around how not only the absolute (monetary) but also the relative prices of electricity and gas are determined, crucially with a focus on bringing down the consumer price of electricity and avoiding simply transferring the burden to gas, particularly where it may be difficult for, and outwith the control of, many households to shift away from gas heating systems in the near to medium term. A potential net zero strategy focus on electrification could require that electricity become comparably less expensive than the current dominant heating fuel, which is gas for most UK households, and efforts in this regard be focused on realising cost reductions in electricity production and wholesale pricing that pass through to consumer bills.

ⁱ 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.

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

ⁱⁱⁱ <https://www.strath.ac.uk/humanities/centreforeenergypolicy/newsblogs/2022/cepsresponsetougovernmentenergyplan/>

^{iv} <https://strathprints.strath.ac.uk/76432/>

^v <https://strathprints.strath.ac.uk/82777/>

^{vi} <https://strathprints.strath.ac.uk/82700/>

^{vii} <https://www.strath.ac.uk/humanities/centreforeenergypolicy/newsblogs/2022/environmentvseconomynarrative/>

^{viii} <https://www.strath.ac.uk/humanities/centreforeenergypolicy/newsblogs/2022/energy-price-cap-august-22/>

^{ix} <https://www.strath.ac.uk/humanities/centreforeenergypolicy/ourprojects/deliveringasustainableandequitableheattransitionseht/>