

Energy Security and Net Zero Select Committee Inquiry: Energy Economics 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. Officially launched in 2015, CEP has an established track record of independent, rigorous, multidisciplinary research and timely and responsive knowledge exchange and policy engagement on energy and climate issues 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/>

Responses are based on CEP's peer-reviewed evidence, and address Qs1-5.

RESPONSE

1. What should be the underlying principles of the UK energy market?

1.1 In its draft Strategy and Policy Statement for Energy Policy in Great Britain, the UK Government sets out a number of strategic priorities for energy markets. These include "energy wholesale markets that are competitive, transparent, and liquid...and a retail market that works better for consumers, is more resilient and investable, and supports the electrification and wider transformation of the energy system in the most cost-effective way." In addition, the statement articulates an ambition for "...electricity market arrangements that meet our objectives for a decarbonised and secure electricity system by 2035 at least possible cost to consumers" and "energy markets that...work for the full range of market participants." Aligning with these strategic priorities are the objectives set out in the UK Government's Review of Electricity Market Arrangements (REMA) Second Consultation Document, which includes security of supply, cost effectiveness and decarbonisation. Overall, these priorities and objectives combine to serve as a useful set of guiding principles for action to reform the UK energy market, which can enable the transition to net zero in ways that deliver sustainable and more equitable prosperity. However, as highlighted in our evidence to the Strategy and Policy Statement, a focus on identifying and delivering clear policy outcomes in relation to the accessibility and affordability of energy is essential.¹ This is especially important in the context of energy prices that are predicted to remain high into the 2030s.²

1.2 Affordability is a critical and interlinked issue for both households and businesses, with elevated energy prices potentially driving cost-of-living pressures, with impacts on the cost of doing business undermining competitiveness and the long-term sustainability of the economy. Over the last couple of years, with the energy and cost-of-living crises, UK Government has intervened to mitigate acute price impacts on households through a range of universal and targeted measures, including the £400 Energy Grant Payment, the Cost of Living Support package and the extension of the Warm Homes Discount scheme. Against the backdrop of persistent geopolitical uncertainty and market volatility, these types of interventions, essentially targeted at supporting incomes, may continue to be necessary to ensure affordability outcomes, unless planned market reforms can address how prices faced

¹ Corbett, H. and Speirs, J. (2023) *Strategy and Policy Statement for Energy Policy in Great Britain Consultation Response*. University of Strathclyde, Glasgow. Available at: <https://doi.org/10.17868/strath.00086341>

² Cornwall Insight (2023) *GB Power Market Outlook to 2030*. Available at: https://www.cornwall-insight.com/wp-content/uploads/2022/07/Cornwall-Insight-GB-Power-Market-Outlook-to-2030_2022Q2-Final.pdf

by UK consumers are determined and how the burden of necessarily higher prices fall. Here, key elements of planned reforms include:

- Decoupling the price of electricity from gas (i.e., how the cost of gas generation affects the retail price of electricity with current marginal cost pricing preventing the falling costs of renewable energy production being reflected in consumer bills).
- Assessing how standing charges are determined and charged and addressing the uneven and potentially inequitable 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 (which it was never really designed to do³). 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.

1.3 The question of affordability is not just pertinent to the reform of the UK energy market but extends to the broader challenge of how the costs of net zero are distributed and what the dynamic impacts of the transition on different sectors of and groups within the economy will be. Addressing these challenges (whether through REMA or via other net zero public policy decision-making) will be fundamental to identifying and building consensus around economically and politically feasible net zero policy pathways.⁴

2. Can Government deliver radical reform in the UK energy market?

2.1 As highlighted in the response to Q1, through its Strategy and Policy Statement and REMA consultation document, the UK Government has already recognised that energy market reform is essential. Particularly given the wider context of geopolitical uncertainty, energy price volatility and persistently high energy prices and the need to decarbonise the UK economy in line with legislated net zero ambitions. The guiding frameworks are in place to deliver the necessary reform, but momentum around the design and implementation of concrete policy action will need to be sustained through the last months of this Government and into the first months and years of the next one.

3. Is the Review of Electricity Market Arrangements likely to deliver the necessary changes to the energy sector?

3.1 CEP's analysis suggests that the impacts of persistently high energy prices and volatile energy markets have potentially negative consequences for the UK economy.⁵ 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 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

³ Turner, K. (2022) Britain's energy price cap was never designed to keep your gas and electricity affordable. The Conversation. Available at: <https://theconversation.com/britains-energy-price-cap-was-never-designed-to-keep-your-gas-and-electricity-affordable-188547>

⁴ Turner, K., Katris, A., & Race, J. (2020). The need for a Net Zero Principles Framework to support public policy at local, regional and national levels. *Local Economy*, 35(7), 627-634. <https://doi.org/10.1177/0269094220984742>

⁵ 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.

households are facing cost-of-living increases at least 25% higher than the UK average in 2023.⁶

3.2 REMA, alongside broader energy market reform, can play a role in mitigating these and other negative economic consequences and help ensure a fairer and more effective energy market and sector.

3.3 However, as highlighted, REMA can only go so far, if affordability outcomes are to be achieved in the face of persistently high energy prices and the wider net zero transition (e.g. upgrades to the electricity network) which will bring new costs that will need to be borne by businesses and ultimately households. Government will need to look again at measures such as social tariffs (but giving due consideration to the implications of how the costs for such an intervention will be paid for by other household and/or business users), in addition to other previously mentioned reforms. This is not a challenge limited to energy market reform as political decisions will need to be made and interventions required to support the incomes of the most vulnerable households who remain unable to pay for basics such as energy and food, a situation that will only be exacerbated if businesses pass on their own higher energy and decarbonisation.⁷

3.4 Alongside REMA and energy market reform, decisions on broader questions of ‘who pays’ for the costs of decarbonisation actions and necessary changes to the energy sector, such as upgrading the electricity network, will also be key. These decisions will shape wider economic and distributional outcomes of the net zero transition.⁸

4. What are the major benefits that the UK should be seeking to deliver from energy market reform?

4.1 As highlighted in previous responses, energy market reform (alongside other public policy interventions) needs to support sustainable, secure and more affordable energy and enable a net zero transition that delivers sustainable and more equitable prosperity.

4.2 For example, energy prices need to be set in a way that ensures they are competitive and fair, and support decarbonisation efforts. For example, our research exploring the economy wide impacts of the rollouts of heat pumps highlights the importance of energy prices. Heat pumps could deliver efficiency improvements, emissions reductions and a range of economic benefits. In a hypothetical scenario where there is parity between prices (1:1), GDP gains equate to £3.8BN, and net creation of jobs equates to 67,245 FTE. However, historically, electricity has been more expensive than gas. This means this parity is highly unlikely and, indeed, our research shows that where electricity is relatively more expensive than gas (for example, pre-energy cost crisis, the electricity unit price was about 4 times higher than gas), the outcome of heat pump adoption could be negative impacts on consumer spending GDP and employment. That is, the energy efficiency gains associated with using heat pumps could be eroded or entirely offset by higher prices.⁹ Thus, decoupling electricity and gas prices, and a focus on bringing electricity prices down is critical. However, this should be done without disproportionately affecting fuel poor households which still rely

⁶ 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/>

⁷ Turner, K. (2023) Mind the income gap – why supporting incomes needs to become part of the conversation around a fair and affordable net zero transition. University of Strathclyde. Available at: <https://www.strath.ac.uk/humanities/centreforenergypolicy/newsblogs/2023/supportingincomesaspartoffairandaffordablenetzero/transition/>

⁸ Turner, K., Katris, A. and Corbett, H. (2024) A ‘Horse and Cart’ Challenge – the need to understand ‘who pays’ before the macroeconomic and distributional impacts of the net zero transition can be projected. Available at: <https://doi.org/10.17868/strath.00087969>

⁹ Corbett, H., Katris, A., Calvillo, C. and Speirs J. (2023) Unlocking the Benefits of the Low-Carbon Heat Transition. University of Strathclyde, Glasgow. Available at: <https://doi.org/10.17868/strath.00086820>

on gas heating and may need extra support to transition to heat pumps or other low carbon systems.

4.3 Another example of where energy market reform needs to deliver is in relation to the new operating environment that can support the dispersal of energy production associated with the low carbon transition. So, moving from power generated in one place (through, for example, big thermal generating plants) close to demand centres, to more decentralised and distributed generation, as well as more remote generation (such as onshore and offshore wind developments). This will have implications for costs in generation as well as grid connections.

5. What are the chief barriers to reform of the energy market and is the Government serious about addressing those?

5.1 One of the chief barriers to reform of the market is the extent of vertical integration of the production and supply components of a relatively small number of businesses in the market. Over the last couple of years, the UK Government has imposed windfall taxes on the excess profits announced by production companies (or the production arm of businesses that also supply energy) in order to pay for energy bill support provided for households and businesses. However, more fundamental regulatory reform is required so that extraordinary profit-making is avoided through how prices are determined in the first place, which requires more competitive and efficient markets.¹⁰

5.2 Constraints on access to the grid infrastructure (which needs to develop and expand) also represents a significant barrier to energy market reform and a more effective energy sector generally, particularly with (renewable) energy production becoming more dispersed in the transition to low carbon energy. For example, Scottish Government has ambitious plans to realise a fivefold increase in its offshore wind generation by 2030. Yet, at present, challenges exist in relation to connecting multiple new developments to the grid with high associated transmission costs. Grid infrastructure challenges could also constrain export opportunities via the world's longest subsea electricity interconnector, the €1.6 billion North Sea Link (NSL), which connects to the onshore UK grid.¹¹

5.3 Linked to the grid infrastructure, and to earlier points about broader UK Government intervention, community consensus and buy-in could pose a barrier to energy market and broader sector reforms. A lack of community support, potentially driven by a perceived lack of community benefits and domestic supply chain activity associated with new developments, poses real political challenges, which will require action in terms of planning policies as well as delivering appropriate incentives and ensuring the development of local supply chains. Acting on developing local supply chains could generate increased economic gains in terms of jobs and GDP for the wider Scottish and UK economies as demonstrated through our research on offshore wind.¹²

5.4 Another challenge relates to existing market support mechanisms towards low carbon systems, where, for example, Contract for Differences (CfD) may have not provided enough support to incentivise investment in offshore wind. Furthermore, there are challenges on how current mechanisms can support large-scale low carbon and flexible energy supply solutions, such as pumped hydro or tidal range schemes (TRS). In short, the CfD and Capacity Market mechanisms that may be the most likely approaches to supporting new

¹⁰ Turner, K. (2022) Centre for Energy Policy (CEP) response to the Autumn Statement 2022. Available at: <https://www.strath.ac.uk/humanities/centreforeenergypolicy/newsblogs/2022/autumnstatement22/>

¹¹ Turner, K. (2024) Offshore wind: a new dual export opportunity for Scotland that could maximise productive output and economy-wide benefits? University of Strathclyde, Glasgow. Available at: <https://doi.org/10.17868/strath.00088443>

¹² Turner, K. (2024) Offshore wind: a new dual export opportunity for Scotland that could maximise productive output and economy-wide benefits? University of Strathclyde, Glasgow. Available at: <https://doi.org/10.17868/strath.00088443>

energy supply and storage solutions are not, in their current form, suitable in the case of the opportunity that is presented with large-scale investment for pumped hydro or TRS. This is both in terms of how each operates - with TRS likely requiring a relatively high strike price under the CfD and with commissioning and construction timeframes too long to enable entry to the current Capacity Market – and the fact that the two cannot be used simultaneously by any one energy supply/storage scheme. Therefore, if market mechanisms are likely to remain the dominant approach in developing the UK energy supply system, the level and length of support of such mechanisms and/or restrictions on ‘revenue stacking’ must be reconsidered.