Warm This Winter

Briefing: Power Sector Decarbonisation

Warm this Winter is a campaign demanding the government acts now to help tackle rising energy bills this winter and to ensure energy is affordable for everyone in the future. It is supported by over 50 leading anti-poverty and environmental organisations, including Save the Children, WWF UK, and the End Fuel Poverty Coalition.

Summary

- The energy crisis has seen the price of gas skyrocket and energy bills remain double what they were in winter 2020/21. Bills will remain unaffordably high unless action is taken to reduce dependence on volatile gas through a rapid rollout of homegrown renewable energy and broader power sector decarbonisation
- The transition must focus on renewable energy sources such as wind, wave and solar, and be backed up by electricity storage and flexibility.
- More than 80% of the public supports renewable energy generation and it remains the most popular energy source. Even onshore wind, which is sometimes mistakenly assumed to be unpopular, has far more supporters than opponents, with 79% of people supporting it and just 4% opposing.
- A decarbonised power system would bolster energy security by cutting our exposure to international fossil fuel markets. Renewable energy is already buffeting households against the energy crisis as in 2021 renewables displaced around £6.1 billion worth of gas, equivalent to £221 of gas per household.

What would a zero carbon power system look like in 2035?

Renewables capacity currently stands at around 40GW, and contributed to about 40 per cent of the UK's electricity supply in 2020. By 2035, this will need to increase to generate between 70 and 90 percent of all electricity from a capacity of between 80GW and 280GW. This will predominantly be achieved by wind and solar which must then be coupled with clean dispatchable (on demand) power and energy storage, to keep the lights on when the wind is not blowing and the sun is not shining.

This cleaner power system would bring cost savings for households. The annual electricity bill for an average household would decrease by £300 in 2030. This could save UK households £8.7 billion compared to today.

A grid powered by clean, cheap renewables rather than new nuclear and gas power with carbon capture and storage (an expensive, risky and virtually untested at scale technology) would save a huge amount of both money and emissions. Research on different pathways to decarbonising the grid found that using 100% renewables would be technically feasible,

and would save more than £100bn by 2050, as well as reduce in more than 20% lower cumulative emissions.

The problem: boom and bust cycles which keep energy bills high

The Contracts for Difference (CfD) mechanism has been successful in driving down the cost of renewable energy. Yet a number of serious barriers remain which will delay the UK in getting the clean power it needs to end reliance on gas and cut energy costs as quickly as possible.

Most notably, last year's CfD auctions failed to produce a single bid for new offshore wind projects, due to the government's failure to update the auction price to reflect global inflation caused by soaring gas prices. While we hope that this will be remedied in the upcoming auction round, this type of boom and bust cycle undermines investor confidence and is out of step with public opinion.

- Strict limits have been placed on the amount of new onshore wind and solar projects permitted to come forwards in the auctions process. The CfD scheme will pay back £660 million between October 2021 to April 2023 according to ECIU, so this cap is costing consumers.
- The UK Government has committed to decarbonise electricity supply by 2035 however, the Government has not yet provided a coherent strategy to achieve its goal nor provided essential details on how it will encourage the necessary investment and infrastructure to be deployed over the next decade.
- Planning blocks remain in place which mean planning permission has only been granted to 15 onshore wind turbines in the past five years, well below the pace of change needed, and no applications for projects in England have come forwards since the government announced changes to planning barriers in Sep 2023 The current planning system for onshore wind is disproportionate given wind's high popularity across the UK and role as an essential technology to decarbonise power - why should it face a stricter planning regime that does not apply to any other type of project, including dirty energy?

Once renewable energy infrastructure has received planning permission and is built, a wider problem exists that currently it can take as long as 15 years to connect to the grid. In November, Ofgem announced new rules to prioritise projects which are ready first but this will not be implemented until January 2025. Given increasing electrification, a vast increase in current grid capacity is required to meet our future demand.

- In 2023, Britons paid hundreds of millions to turn off wind turbines on our windiest days as the network could not handle the power being produced. This is a cost that ultimately ends up on the bills of households across the UK.
- Investment is required to upgrade electricity networks so that they'll cope with greater demand when electric vehicles and electric heating, such as heat pumps, become the norm.

- There is no route to market for community benefit and locally owned renewables projects across the UK, including onshore wind. The Smart Export Guarantee (SEG) which requires some electricity suppliers to pay small-scale generators is too low to provide a pathway forwards. The recent Community Energy Fund, while extremely welcome, does not fund project costs, just feasibility and planning work.
- The Government must give equal focus to low-carbon flexible solutions as to the full delivery of its existing renewables commitments. This is vital to ensuring the future variable renewable-dominated electricity system is reliable and resilient to potential future weather extremes.

The Solutions

The following changes from the government are needed to allow clean energy projects to flourish across the UK.

- **Further support for CfD auctions** after failure of the last round to secure any offshore wind capacity, the government must now rebuild investor confidence. CfD parameters should reflect their economic environment more closely in terms of supply chain costs and interest rates
- **Remove planning blocks** on new onshore wind projects in England, and put onshore wind projects into the same planning regime as equivalent projects and proposals. To speed up the building of renewables, National Policy Statements must be made more prescriptive and large-scale onshore wind should be included in the Nationally Significant Infrastructure Projects framework.
- **Commit to reform the capacity market** to ensure capacity procured to balance the electricity system has a rising share of zero carbon dispatchable power.
- **Bring in a route to market for community energy projects**, such as a community CfDs pot and a viable SEG tariff to provide a route to market for locally owned renewables.
- **Creating a revenue support mechanism** for Long Duration Energy Storage. This will provide an important contribution to decarbonising our energy system by storing renewable power and discharging it during periods of low generation.
- **Reforming the Wholesale Market** including via the review of electricity market arrangements (REMA), and increasing deployment of demand side flexibility.

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