UK Industrial Electricity Prices: Competitiveness in a Low Carbon World

As the UK transitions to a low-carbon power system, consideration needs to be given to how the UK government can help deliver competitive industrial electricity prices compared to continental Europe. This analysis by the UCL Institute of Sustainable Resources suggests that the UK government should use the current technological revolution in the clean power sector to minimise system costs, whilst

The UK has previously had an incoherent approach to developing renewable energy. Reflecting its more market-based approach, the UK initially supported renewables with subsidy additions to wholesale prices. However, this left renewable investors exposed to the uncertainties of wholesale electricity markets, driving up the cost of capital, initially with no differentiation on how much of the cost should be borne by industrial consumers.

The UK has also placed more emphasis on using market instruments designed to penalise carbon emissions to incentivise decarbonisation, notably through the Climate Change Levy (CCL) for lighter industry, and the carbon price floor. Conversely, European countries have placed more emphasis on direct support for clean energy investments with proportionately less direct impact on industrial electricity consumers (e.g. through feed-in-tariffs). Germany in particular has a more integrated approach to the transformation of its energy system, including network and industrial strategies.

However, the UK regulatory approach has evolved. UK Electricity Market Reform aimed to incentivise investment in secure, low-carbon electricity and improve the security of Great Britain's electricity supply. It introduced competitive auctions for Contracts for Difference (CfDs) which pay for differences in price between electricity from low carbon sources and the average market price for electricity, which has created a far more efficient financing of renewables as part of the energy mix; enhanced investment and confidence has in turn brought down technology costs. Alongside EMR, the Government moved to compensate major industrial consumers for the historic cost of renewable support, pass through in electricity prices, and will next year move to directly exempt industrial electricity prices from such costs.

Conversely, the UK model of a carbon floor price with compensation (which feeds through directly to wholesale electricity prices) is also one which is now being followed by the Netherlands, with France also looking to introduce this model.

RECOMMENDATIONS:

In order for the UK to provide competitive industrial electricity prices as it continues its transition to a low-carbon power system, the research makes six key policy recommendations.

and signal intent to restore a rising carbon price in the 2020s.

to avoid congestion and inefficiencies in the network development at all levels, including a review or funding and charging approaches with comparison to practices in Europe.

- Ensuring that the UK leaves the EU in a way that

  and supports continued investment in interconnection with continental grids, for example by continuing to support Ofgem's cap-and-floor returns regime

, with carbon charged on imports (as in California); to take advantage of lowest-cost low-carbon energy sources

- Using the five-year review of the Electricity Market Reform and Capacity Market to

  , and better understand ways to engage with these mechanisms. This might lead to greater participation in these existing mechanisms by industrial consumers, but also suggest new and additional

References:

UK Industrial Electricity Prices: Competitativeness in a Low Carbon World; M. Grubb & P. Drummond
Report Commissioned by the Aldersgate Group
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