



Brexit and UK energy | July 2016

Key messages

This paper outlines some of Cornwall Energy's initial views on the short and long-term implications for the energy sector of the UK's vote to leave the EU.

The majority of UK energy policy and regulation is determined at the domestic level. We are, following the vote for Brexit, unlikely to see a shift away from the core policy objective of tackling the energy "trilemma": maintaining affordability, ensuring security of supply, and reducing carbon emissions. Key underpinning legislation, such as *Climate Change Act 2008*, enjoys overwhelming support in Parliament, and this could only be jeopardised by an early General Election and a radically-different composition of the House of Commons.

However, the vote to leave the EU will increase the need for further interventions and put an upward pressure on the cost of delivering these goals.

Three factors stemming from Brexit will drive market uncertainty over the next few years:

- the UK's exit strategy: choices made about the nature of the UK's future relationship with the EU will impact energy policy in different ways;
- the extent of the anticipated economic downturn at both the UK and the EU level; and
- the extent to which energy demand is reduced as a consequence of any economic slowdown.

Given the level of interconnectivity and interdependence between electricity and gas systems in the UK and the EU, Brexit is unlikely to result in any decoupling. We would anticipate the UK's continued participation, in some form, in the setting and alignment of European network codes, whatever the relationship model that is ultimately established.

However, we would also expect the UK to have less control and influence over the shaping of the network codes as the decentralised world of energy and greater

cross-border pooling of resources evolves. Practically, the UK's integration with European-wide schemes and co-operation with market and system operators will become more complicated if the UK is not automatically subject to linked regulation.

The vote to leave the EU could also have repercussions for energy policy in Ireland. Its I-SEM programme could require review—particularly in relation to Northern Ireland's position between a non-EU British market and an EU-compatible I-SEM market. The scale and speed of interconnection to Western Europe in order to ensure direct, physical integration with the Internal Energy Market (IEM) will also need to be considered. This could create delays to the implementation of the I-SEM.

Short-term impacts

Here, we summarise the possible consequences of Brexit in advance of the triggering of Article 50:

Wholesale costs: Brexit has already prompted some small increases in wholesale costs—largely reflective of the currency impact as the pound fell. However, uncertainty has already been largely priced into the forward curve, so relatively small, further adjustments are expected in the short term. Moreover, demand and the underlying value of commodities and carbon could act as a counter-balance to currency movement.

Capacity market: As confirmed on 8 July, the third capacity market auction will be held this December, and will aim to procure 52GW of capacity for winter 2020-21. Our existing view of the clearing price (around £42/kW) had already priced in a premium for the risk of a possible change to the embedded benefits regime. The increased uncertainty caused by Brexit will, we believe, now push the price up to around £49/kW. This additional premium largely reflects the increased longer-term uncertainty around spark spreads, demand, and the role of interconnectors. It would add around £364mn to a cost to consumers otherwise in the region of £2.1bn.

For new build plant in particular, to the extent that they set the price, the risk premium will also be a reflection of the higher cost of capital imposed by providers of equity and debt to cover large capital expenditure programmes that straddle the Brexit negotiations, and long pay-back periods that run into the period of the uncertain future arrangements in which wholesale market spreads become difficult to predict. Throughout the period of the Brexit negotiations, we can reasonably anticipate a risk premium being priced into all forward capacity market auctions, the cost of which will ultimately flow through to consumers' bills.

Contracts for difference: We do not anticipate that the Brexit vote will impact on the timing of the next contract for difference (CfD) auction. Energy minister Andrea Leadsom has confirmed that the next allocation round is set to begin in the fourth quarter of this year, with £290mn of funding available. This is one of the three CfD rounds that the government is aiming to run before 2020, with £730mn of funding on offer overall.

With the fall in the value of the pound, project budgets are likely to increase given the sourcing of kit from European supply chains at the same time that the cost of financing will rise as uncertainty is priced in by equity and debt investors. Underlying interest rates can only fall so far, and risk margins will undoubtedly rise. This is likely to result in higher bids into the CfD auction and a larger gap between wholesale and strike prices. It certainly makes the government's challenging targeted reduction in offshore wind strike prices harder to achieve.

We have estimated that the £290mn allocated to the next CfD auction could contract 1GW-1.2GW. But the actual costs to the consumer will depend on how, in reality, wholesale prices evolve. DECC and the Treasury will inevitably be nervous about buying a level of capacity that they believe costs £290mn only to find that, if wholesale prices fall with a demand adjustment, the actual cost to the Levy Control Framework (LCF) is significantly higher.

With the increased risk, and an already stressed LCF envelope, it would not be surprising if the budget were reduced ahead of the auction in order to manage the risk of spending more than anticipated.

Opportunities for those less exposed to currency fluctuations: While the impact of the Brexit vote on the CfD and capacity market auctions may not be good

for developers and investors, opportunities could be on offer to those less exposed to currency fluctuations in the short term. These include domestic demand-side response providers, small-to-mid-size biomass combined heat and power (CHP) plants, energy-from-waste CHP, and anaerobic digestion. These technologies could benefit in the short term as investors re-focus towards smaller, less expensive new build projects, where the price of domestically-sourced fuels should not materially increase.

A buyer's market: Given the uncertainty surrounding Brexit, a significant pause in investment in new plant can be expected. New build budgets will increase and financing costs will rise. Political risk has increased, deterring investors from making large, single-project investments in the same way as previously, and raising equity hurdle rates for UK investments. This weakens the UK's competitive advantage in attracting the biggest and most globally-mobile infrastructure investors for new projects.

However, as the period of readjustment follows, a buyer's market for operational assets is likely to emerge, with discounts available to domestic and other investors who are prepared to trust that political instability is unlikely to damage the policy support already granted to built projects.

DECC and Ofgem submerged in bureaucracy: One inevitable consequence of Brexit, irrespective of the specific route taken, is the need to re-write hefty amounts of policy, regulatory and code documentation that currently aligns behind the EU market.

To some extent, EU-driven policy has historically provided little need to think beyond codification; however, each element of unpicking this will require "new thinking" and the associated consultation. This will be a tedious, bureaucratic but essential process that will occupy officials at a time of fundamental change in the UK's energy landscape.

Adding to this challenge is the fact that DECC's departmental budget has been significantly reduced, with a consequent fall in the number of officials. Of course, all departments of state will also be competing for time in what could become a very busy parliamentary schedule, with energy having to take a place determined by its relative importance to other priorities for the post-Brexit government.

Consumer prices: In the near term, consumer prices are unlikely to be moved by Brexit. As discussed, wholesale prices have already factored in the uncertainty; moreover, non-commodity costs, relating to use of systems and levy recovery, are already effectively incorporated into suppliers' tariffs and are unlikely to change because of the referendum.

Longer-term speculation

Here we consider the possible longer-term outcomes of Brexit in relation to the three prongs of the energy trilemma.

Energy security

Increased cost of new generation: Uncertainty is likely to raise the cost of securing investment in new generation plant. It is too early to ascertain the precise impact, but it is difficult to imagine that prices in both capacity market auctions and CfD allocation rounds will not increase while ageing infrastructure continues to be shut.

A changing market for interconnectors: While the fundamentals related to interconnectors should not change, a move away from the existing cap and floor mechanism is possible. One reason for its introduction was to make the licence structure on the GB side compatible with the EU Electricity Directive, avoiding the need for developers to spend years seeking an exemption. If the UK were no longer subject to the directive, this would no longer be an issue. We would, however, not expect "cap and floor" to be abandoned for the first set of applicants.

Changes to the generation mix: Investment in energy technologies will depend on the relative attractiveness of the UK compared to the rest of the world. The UK has been slipping down Ernst & Young's *Renewable Energy Country Attractiveness Index* recently, and at least in the short term this is likely to continue. However, it is possible to envisage a scenario in which the EU suffers more economically without the UK than the UK in its own right.

It is highly possible that the UK will have over-procured capacity for the early part of the next decade, with the capacity market auctions to date having been based on a pre-Brexit view of demand. This effect could be intensified by the higher level of capacity that is being

procured in this year's T-4 auction to counter the risk of plants closing ahead of their delivery years, but without any adjustment for the prospect of lower demand.

At the very least, Brexit will mean that any plants that do not win capacity market agreements will be even more likely to close or mothball given the deterioration in wholesale market conditions. The political defence of the capacity market could become much more challenging if, with higher clearing prices, older plant collect money from consumers while sitting idle and offering no obvious system benefits.

Policy changes beyond 2025: Actions taken to date, with the introduction of the capacity market and the CfD, mean that to a large extent thermal and low-carbon capacity has (or will imminently) be secured for the early-to-mid-2020s.

But the landscape beyond 2025 has suddenly become more uncertain. The role of nuclear power (and specifically Hinkley Point C) is facing significant questions, short-term investment incentives have become less attractive, and binding carbon targets remain in place irrespective of whether the UK is in the EU.

Existing policy is to phase out coal power by 2025. But with substantial uncertainty assured for the next 2-3 years, policy-makers will now need to consider whether changes are necessary to enable the longer-term delivery of environmental and energy security objectives.

With the benefit of hindsight, the decision to close out support for cheaper renewables and to cede the longer-term benefits of carbon capture and storage appear much less justifiable.

Reduced access to European funding: Under the EU's current budget framework, there is an allowance specific to the UK of €1.9bn for climate change adaptation and risk prevention and €1.6bn to support the transition to a low-carbon economy. While this will not be removed until the UK leaves the EU, the full budget is unlikely to be allocated in the period before Brexit.

The UK has also been successful in utilising European Investment Bank (EIB) loans for renewables and energy efficiency projects, securing 24% of funding available from the EIB's Climate Awareness Bonds.

Affordability

Use of system charges: The level of transmission and distribution costs are fixed via price controls and, as such, could be expected to be insulated from the impacts of Brexit. However, the costs are spread over total demand, which, while continuing to fall at present, had been forecast to start growing again with the economy. If, as a consequence of the vote to leave the EU, the economy materially suffers and the UK once again enters recession, falling demand will result in higher-than-average tariffs for system charges being passed through to end consumers.

Renewables incentives: The cost to consumers of renewables incentives ultimately depends on the degree to which Brexit impacts the economy—and specifically the cost of investment coupled with the degree to which any economic downturn prompts a reduction in demand.

If, as suggested by some commentators, the cost of investment increases for a sustained period of time owing to the level of uncertainty, it is difficult to envisage that the cost of stimulating investment will not increase. Whatever the cost, it will be recovered from end consumers, and if demand does fall then the average unit cost is likely to rise.

Wholesale price volatility: Over and above the existing volatility in wholesale prices, the UK is likely to see increased volatility in exchange rates during the period of adjustment. With the UK remaining a net importer, it is likely to face increased exposure to more frequent and more substantial currency movements.

This is particularly the case as it would be easy to imagine increasing reliance on European imports in a scenario in which uncertainty caused a delay to new build nuclear power and renewables generation. It is also possible that, if the UK is not fully integrated into the IEM, it will forego some of the efficiency benefits of cross-border pooling of generation, balancing and reserves. This would lead to higher wholesale prices than would otherwise have been the case.

Emissions reduction

Carbon Price Floor: It is possible that, in a post-Brexit world, the UK would not participate in the EU Emissions Trading Scheme (EU ETS). This would exacerbate the existing oversupply of permits and low prices. It would also impact on the cost of complying with the UK's

legally-binding carbon budgets.

Currently, industries subject to the EU ETS are accounted in the carbon budgets up to their decreasing allowance caps over time. It is assumed that this is the level of emissions from these traded sectors. This means that credits need to be bought to the extent that industrial and power generation emissions exceed the cap. With EU ETS prices being cheap, the overall costs of compliance appear relatively low.

This means of accounting affords flexibility to the UK government to more steadily rebalance emissions without radical change. However, if the UK left the EU ETS scheme, actual emissions from power and industry would suddenly count against the carbon budget levels. This might mean having to take more direct, radical and costly action at a national level to ensure compliance—in particular by changing the physical characteristics of industrial and generation sectors in a way that was simply not required by the EU ETS.

Of course, the UK could merely replace the EU ETS with its own carbon trading scheme. But it is not obvious that sufficient liquidity exists in the GB electricity market to make this work.

Energy standards see little change: Currently UK energy emission standards relating to white goods, buildings and vehicle emissions are all set through EU Directives. Post-Brexit, whilst the UK would not be bound by the standards, the need to participate in European and international markets would be likely to result in internationally defined standards relating to emissions to remain as a minimum.

Conclusion

We do not anticipate immediate or medium-term shifts in energy policy as a consequence of Brexit. However, we do expect a materially different and tougher landscape in which policy objectives will need to be set.

In the short-term, we see the biggest implications of the vote being faced by developers of new generation as uncertainty is priced into the costs of project and financing. These increased costs will ultimately flow through to end consumers via the government's policy programmes.

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