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Brexit and energy Time to make some hard choices

By Sir Philip Lowe

Brexit and energy: Time to make some hard choices

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- ★ The biggest energy policy challenge facing the UK and every other EU member-state is to guarantee that supplies of low-carbon electricity are affordable for households and competitive for businesses. If Brexit means the UK leaving the EU's single energy market, it will have to invest more in new electricity generating capacity, pay higher prices – arguably with less security of supply – and accept a bigger role for the state in the energy sector.
- ★ EU energy legislation has three aims: to make it easier to trade and invest across EU borders by opening up national grids and connecting them to wider regional and intercontinental networks; to promote low-carbon energy (which means more electricity in the energy mix, and – alongside nuclear – more renewable energy); and to guarantee solidarity between member-states when one of them faces a threat to its energy supplies.
- ★ The underlying logic of EU energy legislation is that within a bigger network, stretching across a number of countries, and including more varied sources of supply, countries will be able to economise on large investments in generating capacity and be able to deal more easily with increasing volumes of intermittent renewable energy.
- ★ At the same time, member-states within the EU have always had full discretion over which energy sources can be developed on their territory, as long as they comply with their emissions reductions targets. For example, the UK has so far chosen to invest in new nuclear power stations, whereas Germany has opted to close all of its nuclear power plants.
- ★ The aim of the single market is to remove national barriers to trade and investment and open up national markets to competition so that supply and demand, not governments, determine where electricity and gas flow. Talk of 'having access' to the European energy market but 'not being part of it' makes little sense. If the UK can switch interconnections off and on at will, it will have a separate national market. The UK will be free to broker government-to-government deals, but these will have little to do with market economics.
- ★ Neither the economics nor the politics of energy markets favour policies to 'take back control'. For example, in order to obtain better energy security, countries need to show solidarity with neighbouring countries, which implies more interdependence and governance by supranational bodies, not less.
- ★ The UK faces a choice between economics and sovereignty. If it opts for sovereignty, there will be little or no need to co-ordinate or co-operate with the country's European neighbours, which will satisfy eurosceptics. But if it decides in favour of continued integration in the energy field, it will benefit from more competition, less need for new generating capacity, lower prices and better energy security.

What impact will the UK's vote to leave the UK have on its energy market? Can the UK safeguard some of the benefits which they obtain, or could obtain, from continued involvement in the development of integrated European electricity and gas markets? If they opt to sever ties with the EU in the field of energy, what will this mean for investment in the UK, the role of government in the country's energy sector, and for the country's emissions reductions goals?

Together with other EU countries the UK already has access to global markets for coal and oil and, like its neighbours, is now a net importer of both commodities. Markets for natural gas are also becoming increasingly global: Europe as a whole benefits from substantial past investment in East-West pipelines across the continent as well as in facilities to import liquefied natural gas (LNG), in particular in the UK and Spain. In addition, more interconnections between EU member-states are being built to eliminate 'energy islands'. As a result, concerns about over-reliance of some countries on a single supplier, such as Russia, are gradually easing.

Today governments throughout Europe face another challenge: ensuring secure supplies of low-carbon electricity at prices which are affordable for households and competitive for businesses.

Although the level of physical interconnection between the UK mainland and other European countries remains low (at 6 per cent of installed electricity generation capacity compared with an EU average of over 20 per cent), the UK has been at the forefront of efforts to create

a single European energy market. At the same time the UK has been among those EU countries that have pushed for action to reduce carbon dioxide emissions in order to combat climate change. EU and UK energy policies have therefore progressively focussed on these two objectives: more competition and low carbon energy.

That being said, every member-state within the European Union retains full discretion as to which primary sources of energy are exploited within their territory and what mix of energy is produced within their borders. The UK's decision to reinvest in nuclear energy illustrates the existing degree of sovereignty EU member-states have when deciding on the appropriate energy mix. Britain's longstanding membership of the European Atomic Energy Community has also demonstrated its commitment to the peaceful use of nuclear energy, with appropriate safeguards to prevent the uncontrolled circulation and use of nuclear materials.

What does Brexit mean for all this? To understand, we first need to look at the existing European legislation covering the energy market.

European energy legislation

European energy legislation has aimed to complement national legislation, in the first place to make it easier to trade and invest in energy across the borders between EU countries; secondly to promote low-carbon sources of energy; and thirdly to generate a degree of solidarity between EU countries in the event that one or more of them is confronted by a threat to energy supplies.

“Every member-state within the European Union retains full discretion as to what mix of energy is produced within their borders.”

The logic behind the EU emphasis on cross-border activity is that solving energy issues is easier if a country's network is bigger and covers areas with more varied sources of supply, different weather conditions and demand patterns. An EU-wide interconnected, integrated network of national energy systems has the potential for all countries to save on investment in generating capacity, to reduce costs and further strengthen energy security.

Such a network should also help member-states to deal with the challenge of managing low-carbon energy systems that are increasingly dependent on intermittent supplies of renewable energy. Better storage technologies, decentralised energy generation and more flexible use of energy will help member-states to cope with the challenge of intermittency.

In the short to medium term, countries such as the UK can maintain their trajectory towards a low-carbon economy by switching from coal to gas. But in the longer term they need low-carbon electricity, which means more nuclear, more use of carbon capture and storage (CCS) and more renewables. In the UK, no net additional nuclear capacity is likely to come on stream before 2025, and CCS is unlikely to become commercially viable before then at the earliest. At the same time the cost of renewable energy, such as wind and solar, is becoming increasingly competitive with fossil fuels. In most European countries, renewable energy will soon account for the largest share of electricity generation, providing that problems relating to intermittency can be managed efficiently. Renewables, together with gas, and more interconnections with neighbouring countries, provide a viable energy mix for the UK until additional nuclear capacity comes on-stream (if it does).

Market liberalisation

EU efforts to liberalise energy markets predate the drive towards a low-carbon energy sector. Over the last thirty years, successive sets of liberalisation directives and regulations have been added to the EU statute book. The process culminated in the so-called Third Package, which aims to guarantee energy suppliers non-discriminatory access to gas and electricity markets, management of networks that is independent of suppliers, and strong, independent national energy regulators. It also established bodies to co-ordinate the work of national regulators (ACER) and to promote the development of transmission systems at European level (the European Network of Electricity and Gas Transmission System Operators (TSO) – ENTSO-E and ENTSO-G).

The very gradual, sometimes painful, but sustained efforts to promote EU-wide sets of rules to govern the energy sector (so-called network codes) have increased the potential for greater cross-border trade in gas, and have contributed to the successful coupling of electricity markets, beginning in Western Europe but also now starting in Central and Eastern Europe.

“The European Investment Bank has extended a large volume of loans for renewable projects, including in the UK.”

The European Commission has recently published a set of proposals designed to encourage new forms of electricity markets, taking into account the increasing share of intermittent renewables and of decentralised generation in member-states’ energy systems. At the same time, the Commission has proposed measures to stimulate more competition in retail markets.

The EU has used legislation and finance to try to build cross-border networks. The 2012 Infrastructure Regulation streamlined the process for infrastructure planning approvals and identified around 250 key projects that would strengthen national networks and cross-border interconnections.¹ As a result, a considerable volume of network investments is being supported by the EU’s different funding instruments (the Connecting Europe Facility, the Structural and Investment Funds, and the European Fund for Strategic Investments). The European Investment Bank has also extended a large volume of loans for renewable projects, including in the UK.

1: ‘European Markets Infrastructure Regulation No 648/2012’, An Roinn Airgeadais, Department of finance, 2014.

2: ‘Directive 2010/31/EU of the European Parliament and of the Council of May 19th 2010 on the energy performance of buildings’, Official Journal of the European Union, 2010.

EU legislation to promote energy efficiency is applied alongside a variety of national instruments which are working to the same objective. The 2012 Energy Efficiency Directive provides an overall EU framework for action but there are also specific instruments to promote energy-efficient products and construction materials (including the Ecodesign and Energy Labelling Directives, and the Energy Performance in Buildings Directive, all of which are currently being revised).²

The EU Emissions Trading Scheme (ETS) and Burden-Sharing Regulations, the Renewables Directive (also under revision) and the 2010 Industrial Emissions Directive constitute the principal environment and climate change-related European regulations in the energy field.³ In the context of its 2015 United Nations Climate Change Conference (COP21) commitments, the EU has already set binding targets for carbon dioxide emissions reductions as well as global targets for the expansion of renewable energy and improvements in energy efficiency. It is debatable whether there should be any new binding target in the post-2020 period for the share of renewables in the national energy mixes. Up until now, a majority of EU member-states, with the United Kingdom prominent among them, have opposed any mandatory target for 2030 and beyond. The objective is low-carbon energy, irrespective of which technologies should be used to achieve it.

As to security of supply, concerns over the last ten years about the reliability of supplies of gas from the Russian Federation have led to the adoption of an EU regulation on security of supply which has resulted in better exchange of information on available supplies and created the basis for co-ordinated anti-crisis action.⁴ The Commission’s recent proposals on electricity market design also point to the need for a similar amount of co-ordinated development and management of electricity systems.⁵

The EU’s Horizon 2020 research and development (R&D) programmes provide substantial funds for collaborative, precompetitive research in the energy field. In the current 2014-20 period this covers renewable technologies, networks, storage, energy efficiency and the behavioural aspects of energy use.

Finally, a longstanding and key part of the activities of Euratom is the control of the use of nuclear materials for energy production or medical purposes. A safeguards inspectorate with around 150 staff monitors the use of

3: ‘Directive 2010/75/EU of the European Parliament and of the Council of November 24th 2010 on industrial emissions (integrated pollution prevention and control)’, Official Journal of the European Union, 2010.

4: ‘The Russian Federation and the European Union’, European Union External Action, October 5th 2016.

5: ‘Commission publishes new market design rules proposals’, European Commission, December 1st 2016.

materials at all nuclear installations in the EU, whether in the areas of primary production, reprocessing or decommissioning. Following the Fukushima nuclear incident, the EU also adopted a new directive on nuclear safety.

EU state aid rules apply to any public funding for investment in generation or distribution networks as

well as to measures related to security of supply, energy efficiency, environmental protection and carbon dioxide reduction. The provisions of the European Commission's Energy and Environment State Aid Guidelines, equally now under revision, reflect in principle the same three underlying objectives of EU and UK energy policy: competitive and affordable energy, security of supply and environmental sustainability.

The impact of Brexit on the UK's energy sector

What will UK withdrawal from the EU and Euratom mean in relation to this substantial inventory of European policies, regulations, rules and agencies?

Article 50 foresees an agreement on withdrawal within two years of the request to withdraw by the member-state concerned, which should take "account of the framework of its future relationship with the European Union". As is the case with other policy areas, an overriding concern of the UK government in energy has been to release the UK from the control of EU institutions, agencies and courts, after at most a short transitional or 'implementing' period. Subject to a satisfactory agreement on the transition period, the primary question to be addressed is whether the UK should retain any form of co-operation or association with the EU-27 in the energy field. In the Article 50 letter sent by Prime Minister May to the European Council, she does in fact propose that there should be a "bold and ambitious free trade agreement between the United Kingdom and the European Union" which would "cover sectors crucial to our linked economies such as financial services and network industries".

“An overriding concern of the UK government has been to release the UK from the control of EU institutions.”

This would seem to imply that the energy sector could be covered by a future trade and co-operation agreement (the EU vocabulary for this sort of agreement), alongside telecoms and transport. In that light, one can at least speculate that the Article 50 withdrawal agreement will indicate that the parties have agreed to negotiate, by a certain date, transitional and permanent agreements with the objective of retaining UK membership of, or association with, the single market in energy, if not the Energy Union. While transitional arrangements would obviously have to be agreed before the March 2019 deadline, further time beyond that date could be allowed to agree on the terms of a permanent partnership arrangement in the energy sector.

The immediate challenge for Whitehall, the UK government and Parliament will then be to identify, in the Repeal Bill, which parts of EU energy and climate change legislation should be amended, which should be dropped and, possibly, which should be suspended until entry into force of an energy component of a new EU-UK trade and co-operation agreement.

As far as climate change legislation is concerned, a decision has first to be made as to whether the UK's carbon dioxide reduction commitments should be extracted from existing EU-28 commitments. Insofar as the UK would seek to meet its commitments increasingly through measures other than the EU ETS system (for example, through the use of carbon taxes), then it would be logical for the UK to separate out its own Paris-21 commitments, even if it decided to stay within the ETS or be linked with it. It would also not make a great deal of sense for Britain to participate in non-ETS burden-sharing agreements if its climate change policies start to diverge significantly from those of the EU-27.

With respect to energy efficiency legislation, the provisions of the Energy Efficiency Directive are already to a large extent reflected in, and extended by, UK legislation. The EU ecolabelling and ecodesign measures could probably be transformed relatively easily into UK law. And some of the supposedly more meddling EU regulations on products such as light bulbs or domestic water heaters may, or may not, be amended or dropped.

Replacement of Euratom inspectors by agents of the Vienna UNAEA inspectorate would not seem to be an insuperable problem but is likely to be costly. Some sort of outsourcing arrangements (transitional and/or permanent) between Vienna and Euratom for inspections in the UK might be a good pragmatic solution, if it were politically acceptable to the UK. The other responsibilities of Euratom could conceivably be passed to national bodies. Retention of free movement for nuclear scientists between the UK and the EU is of mutual benefit to both sides and is likely to be agreed on.

No longer being subject to EU state aid rules would open up the potential for the UK government to make quicker

decisions on public funding for energy investment, and for a more interventionist approach to the energy sector as a whole. But if the UK wants to retain access to the European energy market, then the EU will demand that the UK continue to abide by EU state aid disciplines (and environmental legislation).

It will be difficult, if not impossible, to transpose the market liberalisation measures of the Third Package, as well as regulations on security of supply, into domestic law in a straightforward way. After all, these components of EU legislation are not only about governance of domestic markets but about access to them from outside, and about the integration and interconnection of domestic networks within the EU to create an EU-wide market in electricity and gas.

“The commercial reality of integrated, interconnected networks does not fit well with the Brexit the UK voted for.”

As emphasised before, there are obvious advantages to an integrated EU energy market in terms of more competition, lower prices, better security of supply and lower generation costs. There is an obvious link between the UK's considerably higher wholesale energy prices than on the Continent and the relatively low level of energy interconnection between the UK and its European neighbours. Yet the language as well as the economic and commercial reality of integrated, interconnected networks does not fit well with the Brexit that the majority of British voters backed.

It is also not possible to make a distinction between ‘having access’ to the single energy market and ‘being part of it’. If the UK has access to it, then it has to abide by its rules, including network codes on issues such as interconnection, the balancing of supply and demand for energy, and congestion management. It will be part of the market, and electricity and gas will flow where the market wants them to flow. Alternatively, if an interconnection is to be used on an off-and-on basis, then the UK and EU-27 markets will remain separate, subject to a discretionary decision to buy or sell electricity or gas at a specific moment in time. The UK could not then claim the potential benefits (or costs) of being part of the wider European market.

This question of being part of the market is fundamental. Rather than ‘breaking free’ and ‘taking back control’, the economics of energy markets, and the politics of showing solidarity with neighbouring countries to obtain better overall security of supply, imply an acceptance of greater interdependence, not less. This is why the issue of the governance of energy markets by supranational bodies’

and institutions such as the European Commission, as well as by agencies such as ACER and the ENTSOs, is critical to the future EU-UK agreement as it affects energy. In the complex, but essentially physical world of electricity, the UK cannot play around with vague notions like ‘equivalence’. There have to be rules of the game (European-wide network codes) and independent national regulators who ensure that energy markets function effectively in line with the rules and independent of political interference. And ultimately in the event of disagreements or disputes, there has to be one referee, not two or three. Within the EU internal energy market, the agencies such as ACER do their job, but ultimately it is up to the Commission to take the final decisions, subject to the control of the Council of the member-states and ultimately to the European Court of Justice. The UK government needs to decide whether the economic arguments in favour of integration in the European energy market outweigh its concerns about sovereignty. If the UK decide in favour of continued integration, they will not be able to make decisions and exercise control fully independently. An EU-UK agreement on energy will have to match economic expediency and self-interest against the perceived virtues of political independence.

Switzerland has a longstanding ambition to be an integral part of the EU's single energy market. It makes geographical and economic sense. But all its attempts have foundered on Swiss refusal to open up its own energy market to competition and its refusal to accept the jurisdiction of EU institutions and bodies. Perhaps the UK position gives grounds for more optimism: in contrast to Switzerland, which has always been reluctant to open up its domestic market to competition from EU-based suppliers, the UK has always been in the forefront of market liberalisation initiatives. Both UK suppliers and network operators are likely to favour parallel development of UK domestic rules and regulations in line with EU law and network codes.

Without some form of EU-UK agreement, the UK and Ireland will also forfeit one of the success stories of energy market integration in Europe: the Single Irish Energy Market. It is possible to imagine a bespoke arrangement for Ireland in parallel with an agreement on a soft border between Northern Ireland and the Republic of Ireland. But if the logic for an all-Ireland energy market is so strong, it is difficult to see why there should be so much opposition to market integration between the UK and other EU countries where the economic case for the UK is stronger and the historical and political relations less complicated.

Existing EU legislation can be the basis of an EU-UK agreement on market integration. Transitional arrangements can rely on this legislation. Beyond the transitional period, the legislation could be suspended until such time as it can be reapplied under a new agreement. But simply repealing the Third Package does

not seem to make much sense unless the UK's intention is to 'break free' completely. In addition, pending any new agreement, participation of the UK with some sort of observer status in bodies such as ACER and the ENTSOs would help to maintain a degree of convergence between

UK and EU-27 policy, legislation, and regulation. Finally, the UK would have nothing to gain from withdrawing from the Horizon 2020 R&D programme nor from relinquishing its engagement in the activities of the European Investment Bank.

The impact on business and investment

What does all this imply for business and investment in the UK's energy sector? It is obvious that until the results of the impending negotiations are known, there will be uncertainty. Uncertainty over the future character of the relationship between Britain and the EU will not of course be the only reason for delay or indecision over energy investments. There are other factors at play: the price of coal, oil and gas; policies to combat climate change; the future prospects for renewable and nuclear technologies; and the development of more decentralised energy systems. But the post-Brexit framework for the financial sector and for capital flows between the UK and the EU will certainly have an impact on the readiness of EU-27 companies to invest in the UK energy sector.

“Energy-consuming firms in the UK will be at a disadvantage relative to foreign firms with access to cheaper electricity.”

The UK has a political choice to make, which largely determines the business environment within the energy sector. It is the choice between a UK-only solution on the one hand or a solution involving interdependence with neighbouring countries (more interconnectors and the acceptance of EU law) on the other. Under both scenarios, the objective will be to move towards a low-carbon economy. Outside the transport sector, this means more electricity generation and less use of fossil fuels. Within the transport sector, it means more electricity in passenger transport together with more use of gas in road freight and shipping.

In the UK-only scenario, the UK authorities 'take back control'. There will be no need to co-ordinate or co-operate with other European governments. Indeed, because Brexit will reduce the number of investors and suppliers in the UK energy sector, government (as opposed to the market) will inevitably play a bigger role in deciding where investment in electricity generation and networks should take place. New entrants (or new strategies by the existing utilities) may succeed in boosting competition on the UK market,

but the wholesale price of electricity will be largely predetermined by government policy. Similar to the conclusions of the recent Competition and Markets Authority (CMA) market investigation, this could well mean that some form of retail price regulation (at least for vulnerable consumers) is inevitable.

One potential driver of competition within the UK market could be imported LNG, but in the medium to long term; using a substantial amount of gas will not enable the UK to meet its decarbonisation goals. Otherwise, there will be a natural tendency to cover future national energy needs through investments in nuclear, with some offshore wind but no wider renewables portfolio. This will be costly but that would be the price of independence. It could well be to the benefit of domestic electricity generators and suppliers provided their relationships with government remain good. But energy-consuming firms will be at a disadvantage relative to foreign firms with access to cheaper electricity. This could be important if the intention is to revitalise British industry.

The alternative option is to continue to integrate the UK energy sector more with those of its neighbours. It implies more interconnection with EU countries, such as France and Benelux, and with EEA countries such as Norway and Iceland. The more interconnections, the more potential there is for competition and new entrants and the less need there will be for heavy investments and government support for them. The larger the networks across borders, the more scope there is to deal with intermittency of energy supplies. As a result, there will be a wider spread of energy suppliers and an expansion of decentralised generation in renewables alongside nuclear and gas. The corollary of these advantages is that there have to be common rules and supranational bodies of some kind to police the common trading area.

Neither of these options can be described in any way as calamitous. But there is no option that combines the advantages of both.

Conclusion

The negotiations on the UK's withdrawal from the EU have now begun. If only as a result of the constitutional arguments that have been put forward in the UK in favour of Brexit, there will be far-reaching changes in the governance of many sectors of the UK economy, including energy. But the shared fundamental objectives of climate and energy policy on both sides of the Channel still point to policies, of both the UK and the EU, leading to more integration and interdependence and not less. One does not need to be a eurofanatic to believe this. Economics and common sense determine it to be the case.

The UK faces a choice between economics and sovereignty. If it opts for sovereignty, there will be no need to co-ordinate or co-operate with anyone, which will satisfy eurosceptics. It will mean the UK leaving the

EU's single energy market, having to invest more in new electricity generating capacity, pay higher prices, enjoy less security of supply, and accept a bigger role for the state in the energy sector. But if it decides in favour of continued integration in the energy field, it will benefit from more competition, less need for new generating capacity, lower prices and better energy security.

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