HERBERT SMITH FREEHILLS

BCG
THE BOSTON CONSULTING GROUP

GC
Global Counsel

STRONG CURRENTS: NAVIGATING THE POST-BREXIT ENERGY MARKET

Introduction

Following the General Election, the nature of the future UK-EU relationship remains uncertain. However, for the energy sector our collective analysis demonstrates that under Brexit, the status quo of remaining in the internal energy market is highly unlikely. The challenge for the sector is to understand and adapt to what comes next.

As a result of UK political commitments to leave the jurisdiction of the European Court of Justice (ECJ) and to impose greater controls on immigration, the UK now looks set to leave the single market, and as a result, the internal energy market. The economic and commercial incentives to sustain, and potentially increase, energy market integration through physical electricity and gas interconnection are strong for both the UK and EU. However, policymakers will now have to find ways to do so which are politically acceptable to both sides, but governed by new institutional arrangements.

Beyond the physical integration of energy markets, Brexit raises significant questions for the UK. How will the UK source, and trade in, nuclear materials outside of the Euratom treaty? How will the UK approach security of gas supply as an EU 'third country'? And how will the UK price carbon emissions once, as seems likely, it leaves the EU-ETS?

For the EU27 too there are significant implications. The UK's imminent departure will influence the future direction of EU policy in areas from nuclear energy to shale gas to international climate negotiations. The situation now facing the Irish cross-border Single Electricity Market is exceptional in its complexity.

Contributors

Silke Goldberg
Partner, Herbert Smith Freehills

Paul Butcher
Brexit Director, Herbert Smith Freehills

Matthew Duhan
Practice Lead Energy, Global Counsel

Kiril Bliznakov
Partner and Managing Director,
The Boston Consulting Group

This report is designed to help business leaders understand the range of Brexit impacts on the energy sector, and in doing so prepare to take advantage of the opportunities which may arise, as well as mitigate the risks.

But it also aims to help businesses understand the role they may play in shaping the outcome of the Brexit negotiations. Ensuring that business retains a strong voice will be critical in ensuring that the outcome of negotiations is beneficial for both the EU and the UK.

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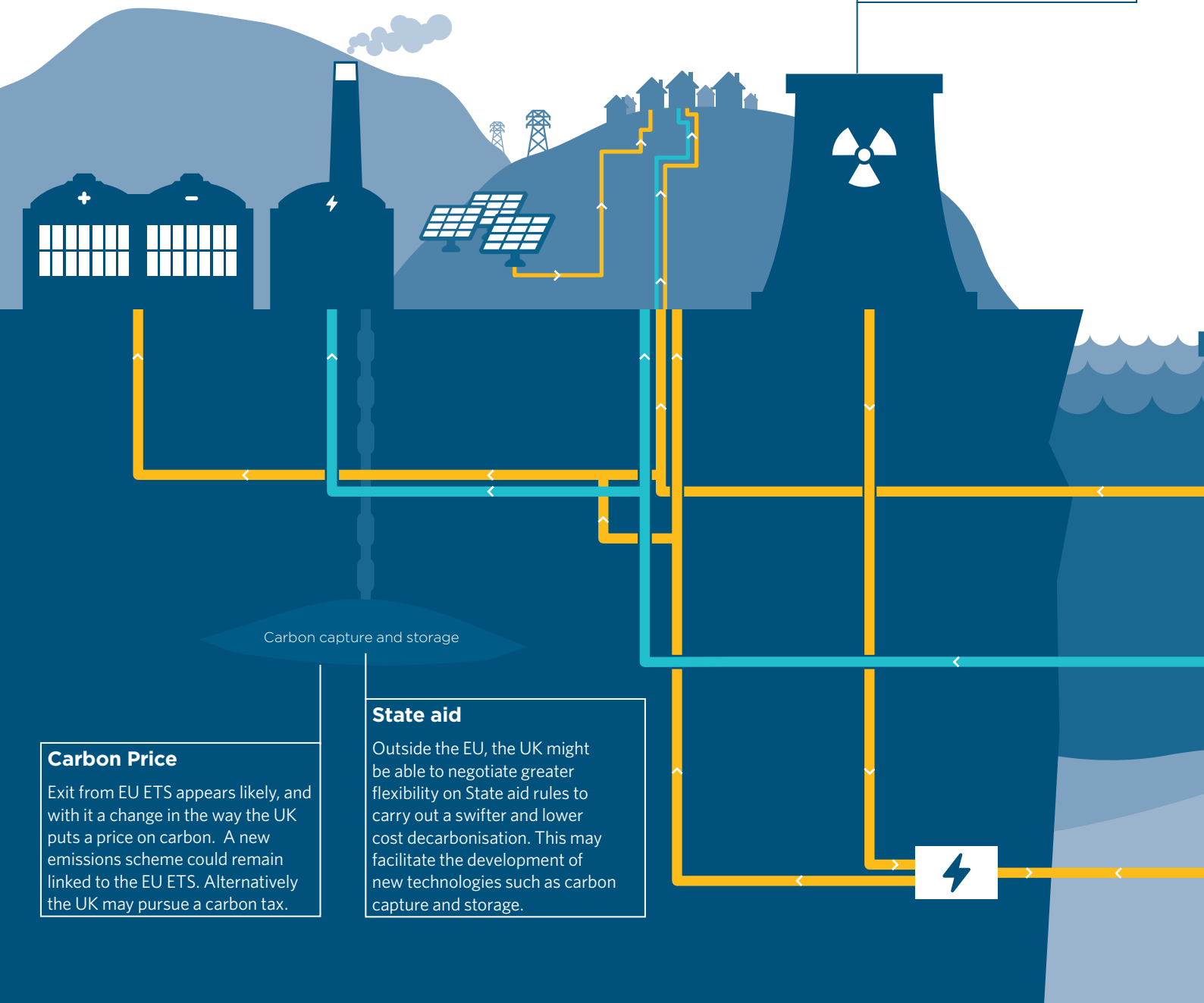
Climate change

UK will no longer be subject to EU targets (eg, emissions reduction target of 40% by 2030 from 1990 level), but still subject to UK targets (eg, 2008 Climate Change Act) and any commitments it gave under international agreements (eg, Paris Agreement).

Nuclear

Euratom exit creates uncertainty for the nuclear industry but allowing a failure to secure replacement arrangements seems inconceivable.



Carbon Price

Exit from EU ETS appears likely, and with it a change in the way the UK puts a price on carbon. A new emissions scheme could remain linked to the EU ETS. Alternatively the UK may pursue a carbon tax.

State aid

Outside the EU, the UK might be able to negotiate greater flexibility on State aid rules to carry out a swifter and lower cost decarbonisation. This may facilitate the development of new technologies such as carbon capture and storage.

= electricity

= oil and gas

Upstream oil and gas

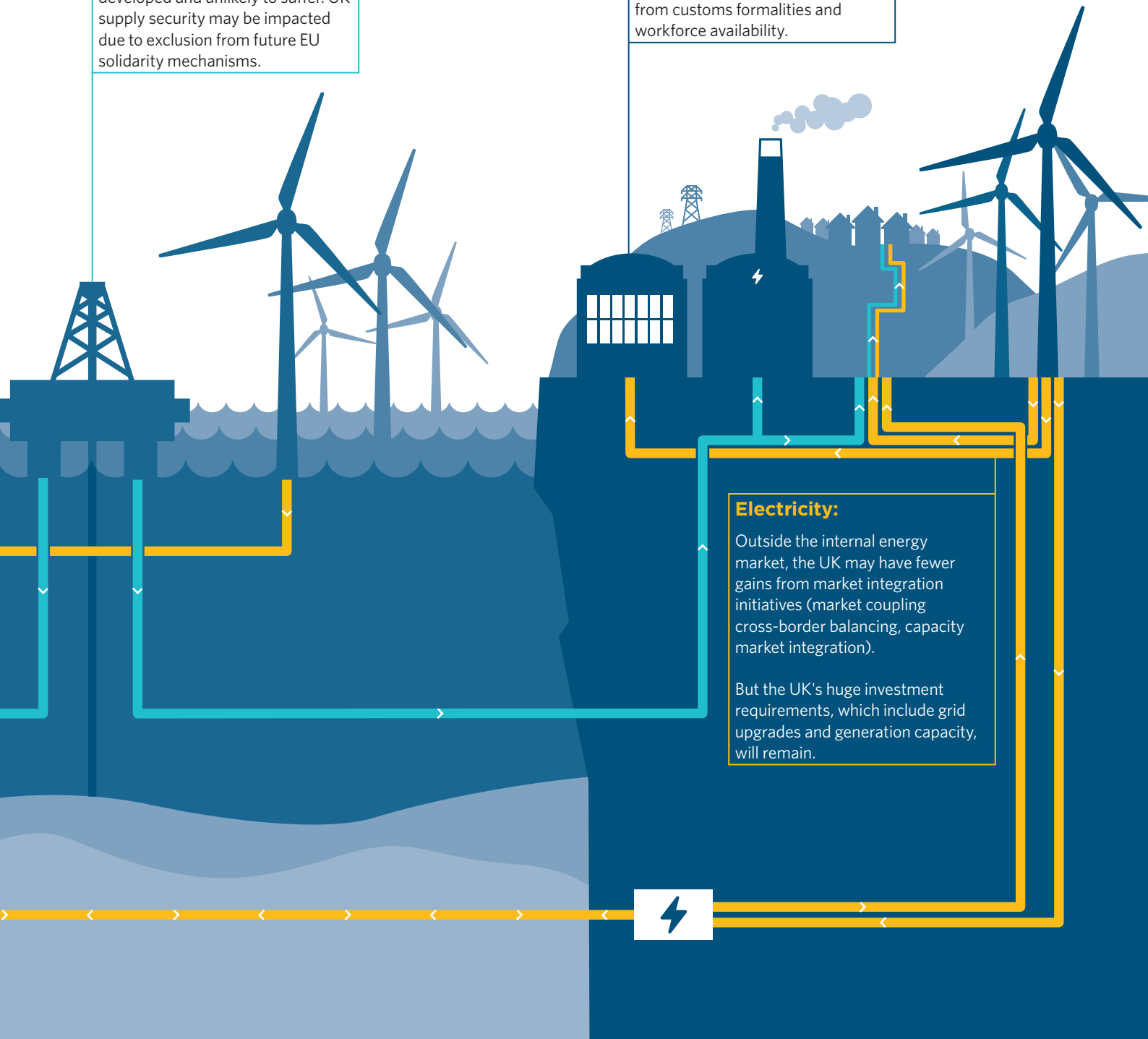
EU member states are sovereign as to their natural resources and any authorisations to prospect, explore and produce hydrocarbons. EU legislation for the upstream sector is limited and has largely been in line with the existing UK regulatory approach. Any UK-EU divergence 'double compliance' would increase costs.

Downstream gas sector

The UK has one of the most liquid and mature gas markets in Europe, and is a significant LNG hub. UK-EU physical integration is well developed and unlikely to suffer. UK supply security may be impacted due to exclusion from future EU solidarity mechanisms.

Supply chains

Aside from the regulatory implications of Brexit, business will assess supply chains impacts from factors such as access to markets, tariffs, delays from customs formalities and workforce availability.



Electricity:

Outside the internal energy market, the UK may have fewer gains from market integration initiatives (market coupling cross-border balancing, capacity market integration).

But the UK's huge investment requirements, which include grid upgrades and generation capacity, will remain.

Smoothing the path to Brexit

What might the energy chapter of an UK-EU free trade deal look like?

The authors have adopted the following working assumptions:

- Continued full membership of the Internal Energy Market (IEM) by the UK is not compatible with the stated political goals of the UK Government to end the supremacy of the EU over UK law (including being bound by the Court of Justice of the European Union (CJEU)) so the assumption is for the UK to leave the IEM.
- The UK will no longer be directly subject to EU legislation (and not subject to CJEU), but instead the UK will commit to selective application of energy regulatory principles in line with the UK-EU agreement. The breadth and depth of the agreement is a matter for negotiation.
- A new UK-EU forum to address relevant aspects of the regulatory regime on ongoing basis (eg, market coupling, capacity allocation, balancing, treatment of interconnection points) in line with principles agreed to prevent regulatory divergence that could endanger continued UK-EU energy trade.
- The UK to no longer have membership of the Agency for the Cooperation of Energy Regulators (ACER), but to keep memberships of the European Network Transmission Systems Operators bodies for both electricity and gas (ENTSO-E/G).

Cliff edge-scenario has methodological advantages for planning – and is conceivable

The so called 'cliff-edge' risk, for both the EU and the UK, is Brexit happening without any deal (transitional or otherwise). This would take the UK abruptly out of one of the deepest sets of trading ties in the world, to overnight being in the same position as any third country trading with the EU under WTO rules.

"The previous UK government line that 'no deal is better than a bad deal' was part domestic political positioning, part an attempt to remind its European counterparts of the risks to both sides of failing to conclude a deal. In reality, both the UK and EU would see such an outcome as an historic failure and will make great efforts to avoid it. But, the negotiations are going to be tough and with a divided minority UK government it is not inconceivable we might see an accidental 'no deal' scenario on Brexit 'day one'." says Duhan.

While this outcome remains unlikely, assessing the impact of a no deal scenario has the advantage for businesses both of being the ultimate risk management stress test question – but also, methodologically, it is the most effective way for businesses to compare their current position from within the EU single market with a counterfactual position in which the UK trades just under WTO rules. From this baseline, organisations can see most clearly the potential impact of the possible changes and make a corresponding plan of action.

The question is whether the UK will be able to mitigate these risks, and together with its EU counterparts find a solution which maintains access to the IEM on terms which are favourable to both parties.

The 'best case scenario' for the UK is probably one where it avoids becoming a rule taker, and instead uses Brexit as an opportunity to rethink some aspects of long-term energy policy – for example, options to develop nuclear power and achieve the decarbonisation agenda in a more cost-efficient way.

Seeking a transitional implementation phase to smooth the Brexit path

None of this will be easy. But the UK's Brexit white paper makes clear its ambition for a comprehensive free trade agreement with the EU and states that it is 'considering all options for the UK's future relationship with the EU on energy' to maintain the 'efficient cross-border trading of energy'. The strong incentives on both sides to continue and increase trading in energy arguably makes it one of the best placed sectors to benefit from pragmatism trumping politics to deliver the best outcome.

"Something that hasn't been widely picked up on is that the UK is, sensibly, only seeking an outline deal in time for Brexit, with the full deal and implementation finalised over subsequent years. Such an approach, with a largely status quo and phased transition period would itself have to be agreed, but it offers the best hope for getting the ambitious future deal both sides say that they want and to minimise disruption," says Butcher.

The Great Repeal Bill should reduce uncertainty for business

The UK is also planning to do all it can, unilaterally, to assist businesses and citizens with a smooth transition on Brexit. Despite its name, the UK's 'Great Repeal Bill' will seek to ensure that most EU law currently applicable in the UK remains in effect as UK law after Brexit, with any divergence after that being a gradual process. This should reduce uncertainty for business.

But this cannot completely replicate the present situation. For example, for legislation that is cross-border or international in nature, such as the Euratom Treaty, the UK cannot unilaterally preserve the effects of these frameworks without the cooperation of other EU member states and relevant third countries. So the extent to which such frameworks remain relevant, and the way they will operate, depends on the final deal negotiated between the UK and the EU.

"Some have mentioned Energy Community membership – an institution to promote the extension of the internal energy market to the EU's neighbours – as a way to secure continuity. But, while it may offer inspiration for a deal it's not an 'off the peg' solution. Sitting in what is essentially a waiting room on the path to EU accession for a group of much smaller countries such as Albania, Moldova and Ukraine is no-one's idea of a UK Brexit destination" says Goldberg

"The most likely outcome for the UK's energy system is continued physical linkage to the internal energy market, through a bilateral agreement on energy, either forming part of, or 'flanking', a wider free trade deal. But there is a long way to go to secure such agreement" says Duhan

Trade law and tariffs

A primer for the energy sector

As an EU member state, the UK is also a member of the EU single market and customs union which means:

- UK goods benefit from tariff-free access to the EU-wide market and vice-versa as well as being exempt from customs administrative requirements and procedures; and
- as with all other EU member states, the UK applies a common customs tariff to all third country goods imported from outside the EU. Once such goods are admitted to the EU upon payment of the common customs tariff, they benefit from free circulation within the EU single market.

The EU's common customs tariff is known as the EU's 'most-favoured nation tariff' (MFN Tariff), which WTO members must apply to products, subject to 'permitted exceptions' in the form of free trade agreements or customs unions made under WTO rules.

Post-Brexit, the outcome on tariffs will depend on the new UK-EU trade relationship and in particular if the UK and EU can agree a new free trade agreement. Within this the terms both for tariffs and in relation to any trade facilitation measures to mitigate the time and cost impact of customs administrative requirements and procedures (eg simpler or preferential rules of origin) will be agreed.

The no deal scenario: the 'cliff-edge'

The UK government has stated its intention to leave both the EU single market and customs union. If it does so without a new free trade agreement with the EU in place (in contrast to the UK's aim of a 'comprehensive' deal), and can no longer benefit from preferences in the EU's existing third country free trade agreements:

- UK exports to the EU would become subject to the EU's MFN Tariff;
- EU exports to the UK would become subject to the new MFN Tariff that the UK itself adopts post-Brexit – the UK's stated intention is that it will seek to replicate the EU's MFN Tariff so far as possible to minimise disruption;
- UK exports to the rest of the world (RoW) would become subject to each relevant third country's applicable MFN Tariff;
- RoW exports to the UK would become subject to the UK's new MFN Tariff;
- third country goods will no longer benefit from tariff free circulation between the UK and EU; and
- in addition, the ordinary customs administrative requirements and procedures would apply to UK-EU trade (ie there would also not be any trade facilitation measures).

These changes have the potential to impact the import and export of goods relating to the energy sector. They would result in increased costs and delays for existing supply chains which businesses will wish to assess and mitigate.

Export tariffs - generally not restricted

Export tariffs are not restricted in most WTO members' schedules and are generally permitted provided they are applied on an MFN basis.

Other import and export restrictions – generally prohibited

WTO rules restrict the ability to impose quantitative restrictions on imports and exports. All such restraints are prohibited, other than tariffs, taxes or other charges, subject to certain public-policy type exceptions. This obligation is in principle not subject to negotiation and so would continue to apply in the same way after Brexit.

"In making strategic decisions on reshaping supply chains, businesses will be considering a combination of factors, including currency fluctuations, FDI changes as well as tariff and customs delays," says Bliznakov.

Cross Border electricity, crude oil and natural gas: an example

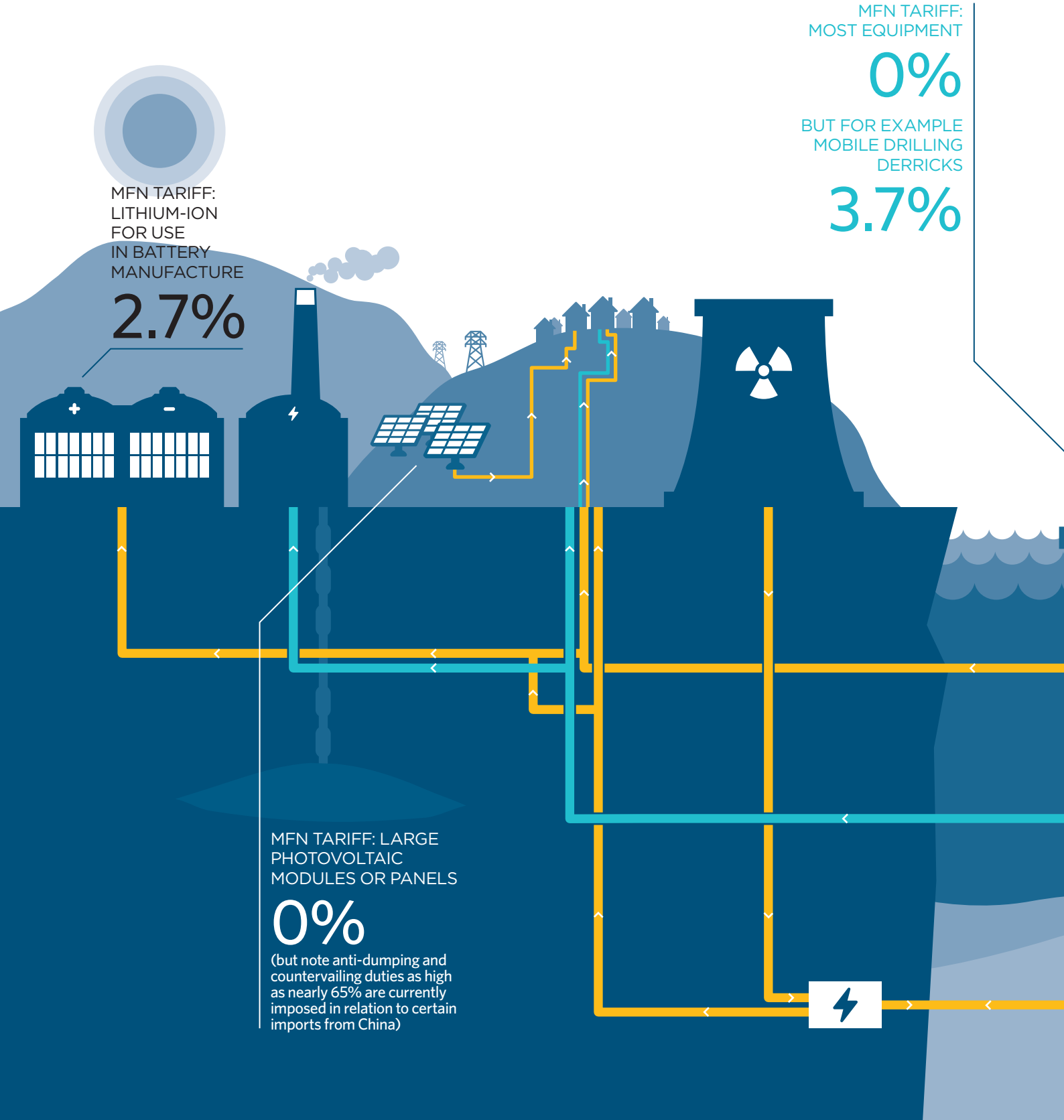
The EU currently imposes no import tariffs on electricity, crude oil and natural gas in its MFN Tariff. Initially, it is expected the UK will replicate the same zero rate MFN Tariff even without a free trade agreement. However, this could change in the longer term.

The maximum tariffs WTO members can impose – their 'bound tariff rates' – are set out in each member's WTO goods schedule. Under the EU's schedule, the bound tariff rates for electricity and crude oil are the same as the applied rate – 0%, but for natural gas it is 0.7%. So the EU, and the UK if it adopts the EU's schedule, can apply an MFN tariff up to 0.7% on natural gas.

For bound tariff rates in WTO members' goods schedules, under WTO rules, a WTO member can modify these rates with agreement from those members primarily concerned by providing compensatory liberalisation in other areas (eg reduced tariffs on other products of similar trade importance).

Failing agreement, the WTO member can still proceed with the modification, albeit the other members can withdraw substantially equivalent concessions that had been initially negotiated (eg increased tariffs on various products).

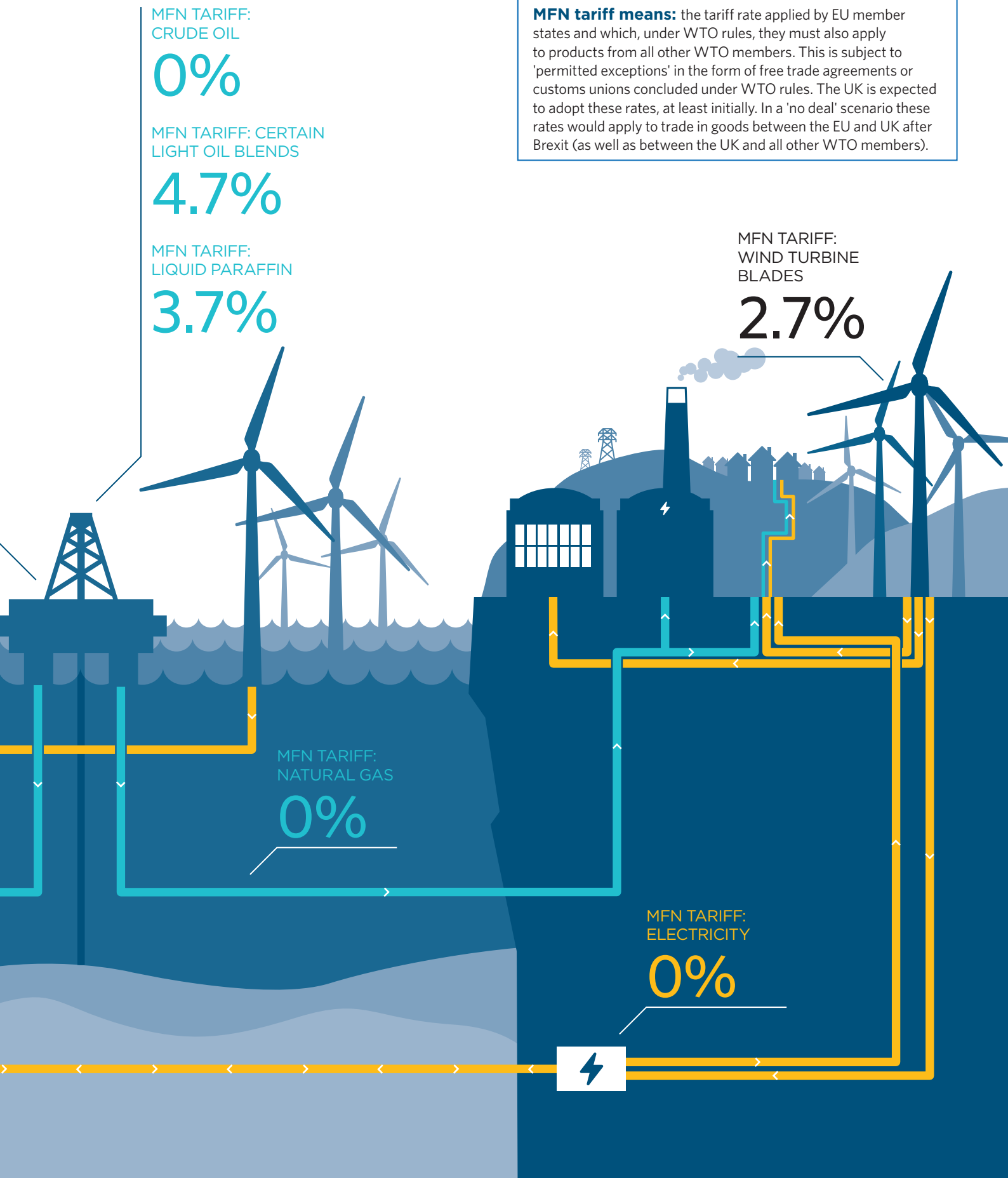
The post-Brexit energy landscape: tariffs



= electricity

= oil and gas

MFN tariff means: the tariff rate applied by EU member states and which, under WTO rules, they must also apply to products from all other WTO members. This is subject to 'permitted exceptions' in the form of free trade agreements or customs unions concluded under WTO rules. The UK is expected to adopt these rates, at least initially. In a 'no deal' scenario these rates would apply to trade in goods between the EU and UK after Brexit (as well as between the UK and all other WTO members).



Energy and Brexit: challenges and solutions

To explore every aspect of the UK-EU energy market is beyond the scope of this paper. Below we highlight areas where we see opportunities to manage the challenges ahead, or gain a more favourable outcome for both the EU and UK energy markets post-Brexit.

Power interconnectors

The area that may be most significant for the post-Brexit UK energy market is the existing power interconnectors, and those in development. Currently there are three interconnectors operating between the rest of the EU and the UK, which provide about 3.5GW of capacity (just over 7% of the UK's current peak electricity demand). But a further eight projects between the rest of the EU and the UK are already contracted for completion by 2022 with 10.6GW of additional capacity to the UK and EU's supply portfolio (just over 27% of the UK's current peak electricity demand).

'It is almost unthinkable that interconnectors will stop functioning,' says Duhan. 'But new projects will need to carefully consider how future regulatory divergence across the two markets should be managed.'

"As our analysis of the international trade law position in this paper shows, there are mechanisms available to the EU and UK to depart from the EU's current zero rate tariff for electricity and 0.7% rate for natural gas post Brexit. However, in policy terms this is highly implausible: there is a reason that the EU applies a zero rate for both," says Goldberg.

Interconnectors are crucial for maximising the efficient functioning of the European energy market. Comments from French regulators in January, in the context of their consultation on the proposed France-UK IFA2 interconnector on any potential Brexit impact, suggested they would still be supportive of any interconnector that is beneficial to the French and EU market.

"Interconnectors are the definition of a 'win win', acting as a regulating valve containing prices and mitigating peaks in demand and supply crunches without new standby generating capacity. While the UK is currently an overall net importer from both France and the Netherlands through the interconnectors (reflecting higher average wholesale prices), the UK is there to provide back-up in scenarios such as French nuclear plant outages or low NW Europe wind energy where relative prices flip," says Goldberg.

Bliznakov concurs: "With an increasing proportion of power generation from intermittent renewable sources, such as solar and wind, and with battery technology not at national scale yet, interconnectors will continue to be necessary and a cost effective alternative to building specific stand-by 'peaking' capacity."

A report commissioned by the UK Government in 2013 showed that, depending on the scenario, UK consumers could see benefits to 2040 of up to $9billion (net present value).

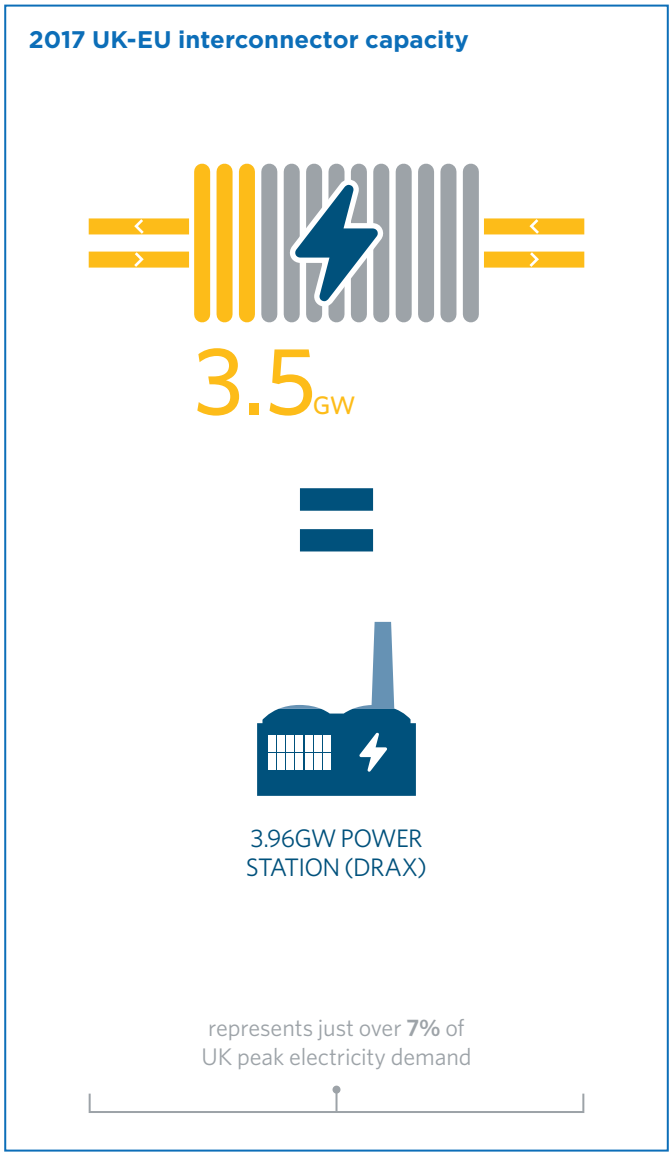
At present, and this also appears to be the view of interconnector operators, there is sufficient need and interest on both sides to make interconnectors work and support the envisioned expansion. This could be a driver for agreeing a mutually-beneficial deal on energy as the UK transitions out of the formal internal energy market.

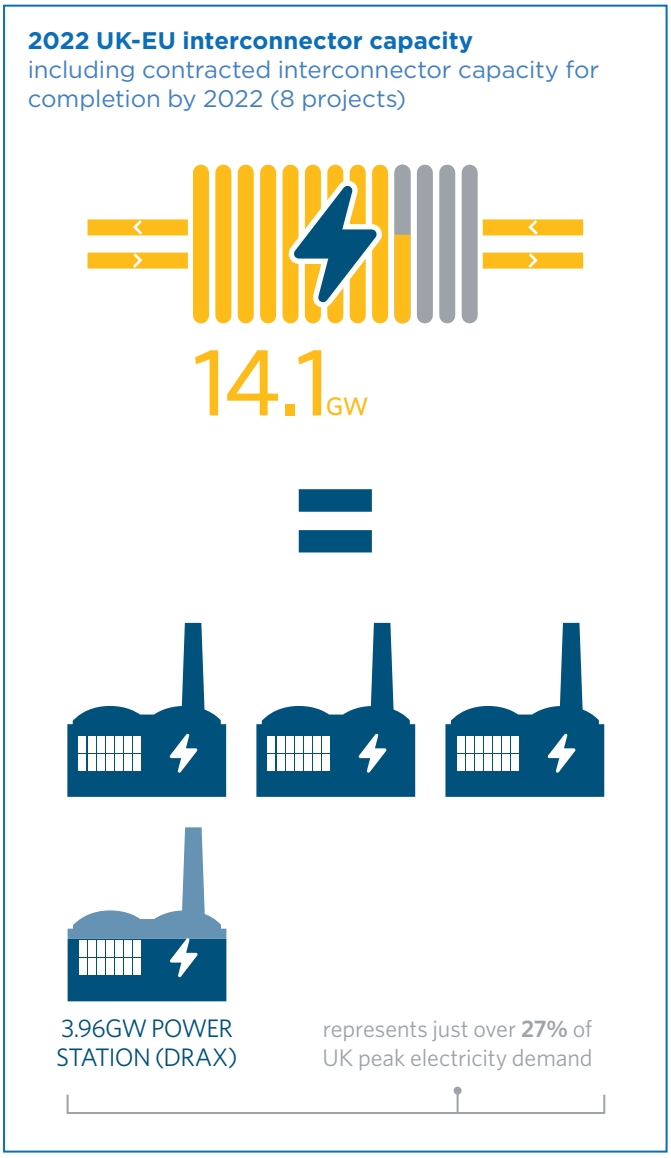
Gas interconnection

Gas markets are already well integrated physically between the UK and the EU, through three interconnectors (IUK, BBL and Moffat) with only small wholesale price differences and little congestion. As a result, subject to any drastic changes in UK energy policy, the gas sector is unlikely to suffer following Brexit.

As the EU is currently undergoing a review of its gas supply security arrangements, Brexit could increase the UK's supply security risk, as it is likely to be excluded from the 'solidarity principles', whereby EU member states agree to supply gas to their neighbours in the event of a gas supply crisis. Conversely, as Ireland is largely dependent on UK gas imports, it is possible that the EU tries to intervene in the form of a solidarity mechanism for Ireland.

Current and planned capacity of UK-EU power interconnectors





Energy and Brexit: challenges and solutions

Regulatory harmonisation

A major factor determining the extent of the UK's continued access to the internal energy market will be the degree of future regulatory convergence. "As in other heavily regulated areas, such as financial services and data protection, the price of UK market access to the EU will be mechanisms which guarantee that the UK cannot provide a low regulation enclave within – or at least with access to – the single market," says Duhan.

Goldberg, does not see this as a bad thing, however, as the UK has inputted so strongly into the existing framework. "It would be a nightmare to unwrap it all, I can see no reason to decouple regulation except maybe over time as regimes evolve," she says.

Indeed, in the long-term this may represent some opportunity for the UK – not to unpick existing regulatory harmonisation, but to avoid future harmonisation which it does not think is relevant or proportionate to its circumstances. This will be dependent on the exact terms of the UK-EU free trade deal. But in any case, a certain level of future divergence may not represent a huge shift in approach either, given that the approaches adopted by EU member states within the European energy sector are already quite diverse.

It is likely, however, that such shifts would be relatively minor and within the bounds of principles agreed in the free trade agreement. For a start, any significant reregulation would create different standards. And this would cause problems for Ireland.

Mutual trust in the negotiations will be important to bridge some of the gaps with the pragmatism required. The fact the UK has long championed market liberalisation and independent economic regulation will provide some support for EU confidence in this sector. "However, sceptics in Europe may well point to controversies over the carbon price floor, and the Conservative manifesto commitment to a retail price cap as evidence that the reality had not always matched the rhetoric", says Duhan.

State aid rules – an opportunity to decarbonise more affordably?

There may be an opportunity for UK negotiators to seize around State aid rules.

The assumption is that the UK will need to agree to be bound by State aid rules going substantially beyond the minimum WTO anti-subsidy requirements to get the kind of wide-ranging free trade agreement that the EU and UK are aiming for. The EU's negotiating guidelines confirmed this expectation stating that any free trade agreement 'must ensure a level playing field' in terms of, among other things, State aid. Ultimately the extent of State aid discipline required would likely turn on the extent of market access agreed as part of the free trade agreement. To the extent that UK access to the single market is curtailed, the state aid framework within the agreement may afford the UK greater flexibility than under the current EU state aid regime. The UK would also want to be able to match the funding areas that are currently administered by the EU at a centralised level (for example in relation to certain European Investment Bank funding).

As a result, the UK could enjoy greater discretion to provide state support to energy projects on their social and strategic merits. This could give the UK greater flexibility to carry out a swifter decarbonisation agenda at lower cost to consumers, by for example:

1. harnessing the historically low cost of Government debt to provide finance directly to:

   a. new nuclear generation projects;

   b. tidal lagoon generation projects;

   c. transport decarbonisation;

   d. large scale energy storage;

e. a restarted carbon capture storage programme;

2. taking a more pragmatic approach to the principle of technology neutrality – for example:

   a. making it easier for capacity markets to encourage new carbon cycle gas turbines (CCGT) as coal fired power stations come off-line;

   b. differential subsidies for nascent forms of renewables.

"Arguably, some of this could be done under the existing EU State aid regime. The advantage is giving the UK more explicit flexibility, to enable it to move faster and more confidently," says Butcher.

Energy could be a testing ground for a more muscular Industrial Strategy

The recent merging of energy and climate change policy into the combined Department for Business, Energy and Industrial Strategy and the government's pre-election determination to set out a more muscular industrial strategy indicated a greater appetite to intervene more directly to attract necessary investment. This may also include making use of any greater flexibility on State aid in energy and infrastructure it can get.

"When I look at Germany and France, they have their own investment arms," says Goldberg. "It might be a good idea for the UK to have a sovereign investment fund for energy and infrastructure to make the kind of strategic direct investments that could lower the cost of decarbonisation."

Despite some mixed signals, harnessing international investment is still central to the UK's energy and infrastructure strategy.

To date, the UK has been able to attract strategic investments that involve other European countries – cases in point being further planned interconnector capacity and the Hinckley Point C nuclear power project. Maintaining and developing large scale inward investment from around the world will be critical as the UK moves beyond Brexit.

"Investors will watch carefully for the details of policies such as the trailed restrictions on foreign ownership of critical national infrastructure and the cap on energy bills for consumers. But the UK regulatory regime remains robust and their statutory focus is on reliable service for users, fair prices for consumers and reasonable returns for investors," says Bliznakov.

Goldberg agrees: "These factors are well understood and trusted by international investors and are often cited as a key attraction of UK infrastructure assets. The UK government will not want to undermine this."

Reduce VAT on energy efficiency?

EU member states are not allowed to reduce VAT rates on any goods or services that are currently subject to VAT. So Brexit could give the UK government greater scope to incentivise energy efficiency goods and services through VAT amendments.

Energy and Brexit: challenges and solutions

Ireland: Driver for on-going cooperation?

Irish gas supply security is heavily dependent on the UK and specifically the Moffat interconnector. Imports from the UK through Moffat met over 96% of Irish gas supply requirements in the year 2014/15. Whilst the Corrib gas field is anticipated to improve Ireland's security of supply, it is anticipated that even at full operational capacity, it will only meet about 56% of Gas Networks Ireland System annual forecast.

In addition, there is the Single Electricity Market (SEM) operating across Northern Ireland and the Republic of Ireland, which is subject to the EU energy sector regime. The UK is unlikely to want to unpick this, even if it means that a part of the UK might still be subject to EU law post-Brexit.

Brexit, if not carefully managed with a solution to address the SEM issue, could effectively reverse a decade of energy integration on the Irish island. There are a number of possible post-Brexit solutions to this:

- Designate Northern Ireland a special zone in that it is understood that the all-Irish market will continue to be subject to EU law.
- Create a special status for SEM which, whilst compliant with EU law, would not subject Northern Ireland to the jurisdiction of the European institutions (ie an 'EU– compatible' solution).
- Unwind SEM which is unlikely to be politically palatable in either the Republic or Northern Ireland. This is now particularly unlikely with the minority Conservative government reliant on the DUP for support in Westminster.

"Both sides take the island of Ireland issue very seriously," says Butcher. "Both sides want to be pragmatic and make it work, although the EU will want to minimise any differences between the deal with the rest of the UK and the position for Northern Ireland. Optimistically, this pushes the UK and EU towards a good deal for both." Goldberg agrees, going so far as to say that the chances for the UK to retain maximum access to the internal energy market may rest with Ireland noting that "Energy is the only sector in relation to which UK government has specifically stated that the UK would explore 'all options'."

On the UK side, following the recent General Election, any DUP confidence and supply arrangements with the Conservatives will only serve to reinforce what was already a key priority area for the UK Government in the Brexit negotiations.

From a trading perspective, the European Commission is, in relation to the setting of any tariffs, under a Treaty obligation to "be guided by... the need to promote trade between Member States and third countries ... [and] the need to avoid serious disturbances in the economies of Member States" (Article 32 TFEU). Given the integration of the all-island electricity market in Ireland, any tariffs set by the EU affecting the UK energy sector would likely negatively affect the Irish energy market, making the imposition of tariffs in the energy sector less likely.

Likewise any negative impact a post Brexit scenario may have on the UK's energy market will, as a practical consequence, also affect the Irish energy market negatively. Given that Article 194(1) TFEU imposes an obligation on the EU to ensure supply security in the EU in a spirit of solidarity, the EU will wish to avoid any such negative impacts on the Irish supply security.

The view from Europe

With confirmation of the EU27's Brexit negotiating guidelines the initial shape of the negotiation process, and any transitional arrangements, are beginning to emerge. We identify below several key implications for the energy sector.

EU will resist a sector specific deal – so broader Brexit risks likely to apply

It is clear the EU will resist sector specific agreements. This reflects the general principle of single market indivisibility, but is also a product of the European Commission's painful experience of managing such agreements with Switzerland. Hopes within some parts of the energy sector for a special deal – based on the strong economic and commercial incentives to keep the UK in the internal energy market - are likely to be disappointed.

As a result, energy will have to be one part of a broader free trade agreement in which "nothing is agreed until everything is agreed".

The EU27 is clear it will only allow the European Commission to move to second phase negotiations on a future free trade agreement after "sufficient progress" on the first phase dealing with the UK's exit terms . This risks the energy sector being impacted by disagreements over more heavily politicised parts of the Brexit negotiation. In the exit negotiations that means issues such as the UK's future EU financial contributions and the rights of current EU and UK residents. In the negotiations on a subsequent agreement, that could mean issues such as tariffs for the automotive sector, or the terms of market access for UK financial services.

EU will want current regulatory structures to apply to any transition

The EU27 guidelines begin to set out what might be acceptable for a transitional period between Brexit and a new free trade agreement being put in place. They make clear that anything resembling ongoing single market access during this period 'would require existing Union regulatory...structures to apply.' While the prospect of continuing adherence to the EU rulebook might be reassuring for the energy sector, the politics of this in the UK could be contentious in areas such as the UK's 2030 renewables target.

What level of regulatory autonomy is compatible with the relevant extent of participation in the internal energy market?

The EU27 guidelines suggest that the fundamental question for the energy sector in the long term is how much UK policy and regulatory autonomy is compatible with the desired level of participation in the internal energy market. Here, the guidelines' demand that any future free trade agreement provide 'a level playing field', is notable in their identification of State aid and environmental regulation as key areas in which to find safeguards against 'unfair competitive advantages'. As in other sectors, in energy, the EU27 will be determined to limit the UK's ability to go 'offshore' and undercut European standards. This is largely about energy costs and competitiveness, as well as the directional flow of the electricity interconnectors, but it is worth remembering that the UK's geographical proximity means that British environmental standards are a European issue; memories remain of the acid rain which affected northern Europe in the 1980s and 1990s.

Brexatom – an unexpected accessory to Brexit

When the UK gave notice to leave the EU in April 2017, it made a parallel discretionary decision to give notice to leave Euratom before seeking to negotiate replacement arrangements. In the absence of agreeing acceptable replacement arrangements within the two-year notice period, the UK faces import and export of materials governed by the Euratom Treaty becoming illegal. This could impact the UK's electricity generation and other industries that use radioactive materials, such as medicine, oil and gas, and automotive. The UK must also replace the agreements Euratom (rather than the UK) has with other countries for nuclear exports.

It seems inconceivable that a failure to secure replacement arrangements could be allowed. But the creation of these risks may affect the Government's negotiating strength and uncertainty for industry remains as the process is likely to be complex:

- agreeing a replacement arrangement between the UK and Euratom requires a qualified majority (≥ 55% of the members of the Council for EU members comprising ≥ 65% of the EU population must vote in favour).
- Agreements between the UK and a Euratom member state effectively requires Euratom consent and between the UK and non-Euratom countries (such as USA, Japan or Canada) requires the UK to satisfy the regulatory requirements of those countries, such as for export of nuclear materials and equipment.
- In particular, the UK is likely to have to put in place an IAEA-approved safeguarding regime to satisfy the requirements of other countries (currently, the UK uses Euratom's regime which is run and staffed by Euratom).
- The 'exit clock' started ticking from the moment the UK gave notice to exit Euratom – unless the European Council agrees an extension, the UK needs to agree replacement arrangements (and the new safeguard regime which is likely to be the basis of the new arrangements) by March 2019.

EU energy policy without the UK

While the terms of the UK's future energy relationship with the EU are still to be negotiated, the UK's voice in formulating EU policy and rules will in any case be much diminished post-Brexit, if not virtually extinguished.

This comes at a significant time for EU energy policy. With the publication of the 'Clean Energy Package' in late 2016, the European Commission's Energy Union has begun an ambitious renewed push for integration, modernisation and harmonisation of energy rules and policies. Indeed, just as the European Commission is attempting to give the internal energy market a significant upgrade, one of its main architects – the UK - is on its way to the exit.

The UK, under successive governments since 1997, has put significant effort into EU energy policy-making and exercised important influence. Over this period, the main features of the UK's approach in Brussels has been:

- Advocacy for market liberalisation and independent economic regulation
- Linking energy policy and tackling climate change
- Primacy of the EU-ETS as the policy tool for decarbonisation
  - A linked preference for technology neutrality
- Protection of member state determination of the energy mix
  - A linked desire to protect the position of nuclear power
- Protection of the UK's interest as an oil and gas producer, including potentially of shale gas

Some key areas of policy which might be affected by Brexit include:

EU-ETS	• Brexit could weaken the EU-ETS by removing one of the largest sources of demand for allowances. Brexit before the end of Phase III (2013 - 2020) could also be highly disruptive, although scope remains for agreeing that the UK remains until 2020 as part of a transition. Brexit may shift the balance towards lower ambition for further reform of the EU ETS ahead of Phase IV (2021 – 2030), weakening the EU-ETS as a decarbonisation tool. • Ultimately, any significant damage to the EU-ETS from a failure to manage a UK exit could encourage the spread of carbon tax measures in more ambitious EU member states, fragmenting the European approach to carbon pricing.
Nuclear energy	• The UK is the largest European market for nuclear new build. Nuclear power has faced strong opposition from certain EU member states, particularly Austria. • While Article 194 of the Treaty of Lisbon guarantees the power mix to be the prerogative of EU member states, the loss of the pro-nuclear UK may cause opponents to seek tougher restrictions in flanking areas, such as application of State aid rules. • A UK exit from Euratom may raise the possiblity of Euratom being consolidated into the EU treaties at the next moment of treaty change. This would give far greater role for the EU institutions on nuclear safety and safeguarding. • The weakening of Euratom in favour of the EU institutions could provide an opportunity for opponents to seek to raise standards to prohibitively costly levels, particularly within the EU Parliament.
Offshore oil and gas	• Brexit will remove the EU's largest oil and gas producer leaving the industry with few advocates in Brussels. Exemptions from EU regulations opposed by the industry, such as the hydrocarbon BREF, may become harder to secure.

Shale gas	• The UK is arguably the most viable source of shale gas production in the EU. Post-Brexit the European Commission may come under pressure from EU member states such as Germany, to regulate the industry directly.
International climate negotiations	• The UK has played a key role in influencing and carrying out the EU's engagement in international climate negotiations, due both to its relatively high level of ambition and capacity in international climate diplomacy. • The loss of UK ambition may lead to lower levels of EU ambition during review cycles for updated nationally determined contributions (NDCs) under the Paris Agreement in 2018 (for 2020), 2023 (for 2025) and 2028 (for 2030). • While the UK and EU are likely to continue to engage closely, Brexit will weaken the voices of both during future negotiations.

Nevertheless, it is important not to overstate the impact of Brexit

In the European Commission a liberal economics approach is strongly advocated, and while enforcement of the rules could be stronger, a volte face on the 'desirability' of liberalisation is unlikely. In any case, despite a rhetorical commitment to the market, much of the UK's engagement with the European Commission has in fact been to protect its ability to pursue policies such as contracts of difference, the carbon price floor and the introduction of capacity payments, under EU State aid rules.

And while attitudes towards liberalisation within the Council are more mixed, energy policy is a sensitive area in which few countries will countenance concessions they are uncomfortable with, regardless of the UK's influence.

Ultimately, more significant may be the fact that Brexit removes a large net contributor to the range of policy tools which act as compensation for concession in these areas, such as the EU-ETS modernisation fund, the Connecting Europe Fund, European Fund for Strategic Investment (EFSI) and more broadly, EU structural funds.

Questions businesses should ask

1. How would a UK exit from the internal energy market affect our business? What would be the strategic and operational implications if the UK becomes a 'rule-taker' in some areas?
2. How would a UK exit from the EU-ETS affect our business and ability to compete internationally? What would be our preferred alternative carbon pricing mechanism?
3. How will Brexit affect the investment environment, including access to sources of funding such as the European Investment Bank? Have we ensured that our contracts are resilient to any changes from Brexit and will not be subject to cancellation or renegotiation?
4. To what extent are our supply chains vulnerable to disruption from Brexit, including the potential imposition of tariff barriers, divergent regulatory environments and additional customs formalities?
5. Beyond the energy market, how is my business exposed to cross-sector issues such as: tax, the availability of the necessary human resources, data protection, and intellectual property rights?
6. How can we effectively engage with government in the UK and other EU member states, or with the EU institutions to ensure positive post-Brexit energy outcomes? What are my priorities in the negotiation?
7. What are the opportunities for our business if the UK gains greater autonomy in areas such as state aid?
8. How will Brexit affect the future regulatory environment for my European operations?

Voice of industry

Compared to other, more vocal sectors, the UK energy industry has to date been relatively quiet on Brexit. Rightly, many in the industry feel that the resilience of the energy market, and the strong commercial and economic logic of maintaining existing physical integration into European power markets, provide a good foundation for continued cooperation.

There will be strong incentives for both the UK and its European counterparts to maintain energy market integration. And with UK having been at the forefront of much recent European energy market reform – notably on market liberalisation and decarbonisation - EU and UK energy policy are unlikely to diverge radically in the immediate future.

Nevertheless, status quo is almost certainly untenable post-Brexit, and in adapting to the new reality, businesses will need to engage with governments on both sides to find the best technical solutions to new challenges. But businesses should also take care to avoid the complacent assumption that the energy market will be depoliticised and adapted pragmatically. As Duhan argues, "A key role for business will be in ensuring that political pressures on both sides – in negotiations over energy and other areas of the Brexit negotiations - do not lead to economically suboptimal outcomes".

This is particularly the case given the multiplicity of challenges being faced within the two-year negotiating framework for exit and beyond, including: transitional arrangements, access to the internal energy market, building interconnector capacity, avoiding disruption in Ireland, and agreeing a level of ongoing regulatory convergence that will suit both the UK and the EU going forwards.

Most businesses will of course be focussed on their own internal challenges. Companies will need to undertake operational and structural assessments to determine their exposure to a no deal scenario and devise strategies to mitigate the risks, as well as identify any opportunities. But here too it is important that businesses understand and engage with political and policy developments. "The future of the UK energy market will be dictated by policymakers' choices during this period, so it is vital that businesses equip them with both evidence and argument to make the right decisions for the UK, and the EU," says Duhan.

How we can help

Brexit – and the challenge that it represents - has many facets. Our three firms' collaboration on this report and in advising organisations on Brexit, is borne out of this very fact. A measured and methodical response to the questions raised requires **legal, regulatory and supply chain analysis, political and policy insight** and **strategic advice** and **implementation**.

The Boston Consulting Group, Herbert Smith Freehills and Global Counsel recognise the importance of these essential elements and of offering holistic assessments on the impacts of, and possible responses to, Brexit aligned with individual clients' needs and strategies.

Initial analysis or due diligence of Brexit-related risks and opportunities, establishes risk exposures and opportunities - a "**Brexit audit**". Issues affecting organisations may be general, they may affect an entire sector, or they may be idiosyncratic and only affect a specific business. For this reason, review exercises must be tailored for individual organisations to reflect their business activities and their specific operating environment.

Given the uncertain timescale and outcome of Brexit, analysis must be scenario based using a hard Brexit base case as suggested by this report alongside selected alternatives.

The focus of any review will be dictated by the nature of the underlying business but might include **regulatory analysis** (eg, market access issues and deregulation opportunities), **supply chain analysis** (eg, impact of tariffs and non-tariff barriers) and **contract reviews** (eg, identification of problematical terms and contracting strategy issues).

The conclusions of this type of analysis allow organisations to assess identified risks and opportunities, calibrating their relative importance and likelihood, and to prioritise further action. Understanding the **interdependencies** and **lead times** (political, operational and regulatory) is crucial to the development of a **phased** and **proportionate** response.

As and when the time comes to take action to mitigate risks or seize opportunities, this may involve **deploying arguments with government** (UK, EU and third countries) directly or through industry bodies to influence their approach based on **prioritised analysis**. On the operational plane it may mean **strategic M&A**, devising **alternative legal structures**, changes to **geographical footprint and workforce**, re-assessing **investment plans**, revising **compliance frameworks** and so on.

Given the evolutionary nature of the Brexit process, any response requires an element of on-going **monitoring** in order to sequence and trigger planned actions but also to continually re-validate adopted strategies.

"...review exercises must be tailored for individual organisations to reflect their business activities and their specific operating environment"

About us

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The Boston Consulting Group is a global management consulting firm and the world's leading advisor on business strategy. We partner with clients in all sectors and regions to identify their highest-value opportunities, address their most critical challenges, and transform their businesses. Our customised approach combines deep insight into the dynamics of companies and markets with close collaboration at all levels of the client organisation. This ensures that our clients achieve sustainable competitive advantage, build more capable organisations, and secure lasting results. BCG is a private company with 85 offices in 48 countries.

Global Counsel

Global Counsel is an advisory firm that works with clients navigating the critical area between business, politics and policymaking. We help companies and investors across a range of sectors to anticipate the ways in which politics, regulation and public policymaking create both risk and opportunity – to develop and implement strategies to meet these challenges.

Global Counsel can provide support in specific markets or policy areas, or build teams to embed alongside strategic decision makers for projects or transactions. Our work is backed up by high quality analytical content and collateral that is politically and economically informed, and which builds quickly into executable strategy. Our team incorporates an international network and is led by former public policymakers and political advisors with experience at the highest level of government and policymaking.

Herbert Smith Freehills

Herbert Smith Freehills is one of the world's leading professional services businesses, bringing together the best people, to meet client's legal services needs globally. Accessing our deep global sectoral expertise, as well as our local market understanding, we help organisations realise opportunities while managing risk to help them achieve their commercial objectives. Operating as a single, globally integrated partnership, we work as a team, using innovative systems and processes to ensure client work is delivered intelligently, efficiently and reliably. When working with Herbert Smith Freehills, clients are assured world class, full-service legal advice and the best results.

Contacts

The Boston Consulting Group

Kiril Bliznakov
Partner and Managing Director,
T +44 7507 858 948
Bliznakov.Kiril@bcg.com

Anu Bhambi
Principal
T +44 7917 090 594
Bhambi.Anu@bcg.com

Global Counsel

Matthew Duhan
Practice Lead Energy
M+44 7867 357 720
m.duhan@global-counsel.co.uk

Geoffrey Norris
Senior Adviser
T +44 20 3667 6500
g.norris@global-counsel.co.uk

Herbert Smith Freehills

Silke Goldberg
Partner, Energy and Infrastructure
T +44 20 7466 2612
T +33 1 53 57 76 69
T +49 30 221 510 419
silke.goldberg@hsf.com

Paul Butcher
Brexit Director, Herbert Smith Freehills
T +44 20 7466 2844
paul.butcher@hsf.com

Matthew Job
Partner, Energy and Infrastructure
T +44 20 7466 2137
matthew.job@hsf.com

Lode Van Den Hende
Partner, Competition,
Regulation and Trade
T +32 2 518 1831
lode.vandenhende@hsf.com

Gavin Williams
Partner, Corporate, M&A
T +44 20 7466 2153
gavin.williams@hsf.com

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