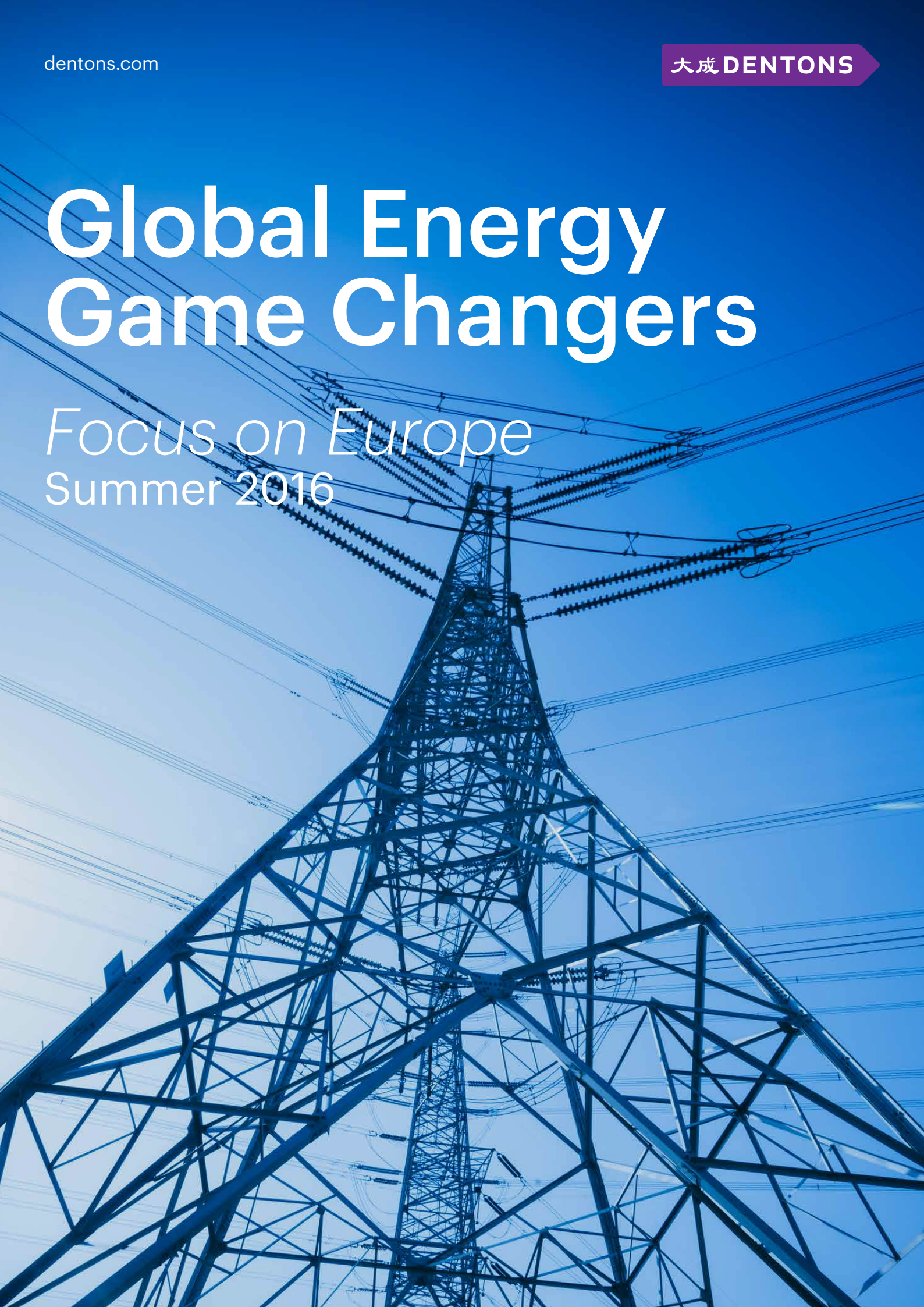


Global Energy Game Changers

Focus on Europe
Summer 2016



Contents



Introduction

Dentons' Global Energy team is excited to present the newest edition of its Global Energy Game Changers series, a compendium of insightful analysis of the most important issues facing the energy industry. Our Summer 2016 issue is focused on key developments in Europe.



Quantum viewpoints:

Trends and projections for the energy industry
In keeping with the focus on Europe of this edition, we asked key thought leaders in our UK and European Energy practices to share their views on what they believe are the most significant trends, issues and challenges facing the energy sector in Europe today.



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Introduction

As global Energy lawyers, we know that our clients, their counterparties and those who have to regulate or adjudicate in the markets in which they operate are grappling with the same fundamental issues everywhere—from Calgary to Cape Town, Berlin to Bogota and San Francisco to Shanghai. For example, nobody who consumes, produces or transports oil, gas or networked power is immune to the impact of the technologies and geopolitics that are driving the price of oil, or the moves towards a lower carbon, more efficient energy mix that were recently boosted by the CoP21 Paris Agreement.

In this volume, we cover key issues and drivers of change in the European Energy sector. We hope that the perspectives and insights we offer will be of interest to you whatever the geographic focus of your business, because we believe a major part of the value of our global Energy practice lies in spotting parallels, drawing comparisons and applying lessons learned from one geographic, commercial or regulatory context to another.

With oil prices in mind, we look at the relationship between contractual disputes and market volatility, as well as the challenges of upstream activity in the high cost, mature basin of the North Sea and how new regulatory approaches may help to improve the industry's prospects. We take an overview of how the European Union is setting about responding collectively to the challenges that the threat of climate change and the need to reduce dependency on single sources of energy imports pose for energy policy—challenges that, in their way, are as significant a test of the EU's political and administrative effectiveness as maintaining the coherence of the Eurozone or dealing with the influx of refugees from Syria and other troubled near neighbours.

Going a bit deeper, we look at efforts to deal with the problems caused by surges in cross border flows of power from large areas of renewable electricity generation; at the challenges and opportunities posed by Smart Grids; at the possibilities of energy and communications companies sharing their infrastructure; and at what investors can do to protect themselves against the fickle winds of political change that sometimes turn, retrospectively, against state financial support for renewables projects, leaving their business models undermined. Finally we look at what may be the newest game changer on the European energy scene and contemplate the options facing the UK after its June 2016 referendum vote to leave the EU.

Whatever the focus of your own interest in global energy markets, we hope you will find something in these pages that resonates with you. Needless to say, the authors would be more than happy to discuss any thoughts or questions you have arising from what they have written.

Yours sincerely,

Adam Brown, Editor

Dentons was named the “Energy Firm of the Year” for the second straight year by *Who's Who Legal Awards 2016*



Quantum viewpoints:

Trends and projections for the energy industry

In keeping with the focus on Europe of this edition, we asked key thought leaders in our UK and European Energy practices to share their views on what they believe are the most significant trends, issues and challenges facing the energy sector in Europe today.

Q : How can energy companies and governments in Europe and their neighbors cooperate to address the most pressing issues facing the global energy sector? What are the obstacles to such cooperation? How could they be removed/reduced?

HOGAN (AZERBAIJAN): In Azerbaijan we have an excellent example of intergovernmental cooperation in the energy sphere, namely the Southern Gas Corridor project, which will deliver natural gas from the massive Shah Deniz field in the Caspian Sea to Turkey and Western Europe. The project involves the expansion of the existing Southern Caucasus Pipeline from Azerbaijan through Georgia to Turkey, where it will connect to the new Trans-Anatolian Pipeline to the Greek border, then on to the new Trans Adriatic Pipeline through Greece and Albania, finally terminating in Italy.

Initially, the project will deliver 6 bcm of gas to Turkey by 2018 and a further 10 bcm to Italy by 2020, with the possibility of expansion to 31 bcm per year to accommodate new sources of gas from Azerbaijan and, potentially, other countries in the region. Though modest in terms of satisfying overall European demand for gas, the Southern Gas Corridor will achieve a measure of diversification of gas supplies and is a key component of the EU's energy security strategy.

KRASNODEBSKI (POLAND): For power, Poland is one of the hubs in the Central and Eastern European region and is strongly involved in cross-border cooperation. With the recently launched Lit-Pol Link interconnection with Lithuania, the Polish government and the transmission system operator (Polskie Sieci Elektroenergetyczne S.A.) have helped to close the Baltic Ring of interconnections integrating Lithuania, Latvia and Estonia into the EU continental power system. The region is also a focal point for the implementation of the 2015 Capacity Calculation and Congestion Management Regulation, with already two foreign power exchanges involved along with the Polish POLPX in facilitating day-ahead and intra-day market integration as Nominated Energy Market Operators.

However, technical issues remain unresolved with uncontrolled power-loop flows affecting the availability of cross-border capacities. While the Polish regulator, with support from many neighbors, secured a favorable opinion of the Agency of Cooperation of Energy Regulators, that decision is strongly opposed by the Austrian energy regulatory authority and a balanced approach to how this issue affects economic welfare in the whole region has not been found yet.



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Q : What is the greatest challenge for the energy sector in your region in the immediate future?



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PIPE (UK): At present the most significant challenge for upstream oil and gas exploration and production (E&P) companies in the UK North Sea is access to capital. From a period of easy capital in the period 2010 to 2014, with multiple new commercial banks entering the loan market, unprecedented debt capital market access and new sources of capital in private equity, commodity traders and mezzanine finance, E&P companies now find themselves struggling with very limited access to debt capital, with commercial banks nursing significant losses from the sector over the past two years and bond markets closed. Access to fresh equity is also limited, with market capitalizations decimated. To the extent that capital is available to fund E&P companies, the relatively high cost of production, the maturity of the fields and uncertainty regarding decommissioning liabilities makes the UK North Sea less attractive than other regions. The industry is looking to the newly established Oil and Gas Authority and the UK Treasury to improve the regulatory and fiscal environment to attract investment.

HOGAN (AZERBAIJAN): As a leading oil and gas exporter, in which hydrocarbons have traditionally accounted for more than 85 percent of total exports, more than 45 percent of GDP and more than 70 percent of state revenues, Azerbaijan has been hit hard by the severe drop in the price of oil. After defending the national currency for more than a year, and using up 75 percent of its foreign exchange reserves in the process, the Central Bank orchestrated two major devaluations of the Manat in 2015, the most severe occurring on December 21, which reduced the value of the national currency by 50 percent against the US dollar. The economy is widely predicted to contract in 2016.

As a consequence, state spending has been severely cut, and many planned infrastructure projects have been suspended or slowed down, including the widely anticipated Oil and Gas and Petrochemical Processing Complex (ONGC) of the national oil company, SOCAR, which ultimately will attract in excess of US\$15 billion in investments. A number of banks operating in the country have become insolvent, and many businesses in the country, particularly in the construction and oil services sectors, have been severely affected.

At the same time, certain high priority projects that are operating according to a strict timeline are proceeding normally. These include the Stage II development of the Shah Deniz offshore gas field and the construction of the various components of the Southern Gas Corridor, which will bring Azerbaijani gas into Southern Europe by 2020.

The government of Azerbaijan has responded to the economic crisis with certain reforms and incentives designed to attract foreign investment, particularly in the non-oil sector. These include a liberalization of the regime for granting licenses and permits and the establishment of industrial parks and special economic zones. It also has been promoting new projects, such as the new Baku International Sea Trade Port, which will be the site of the country's first free trade zone, with the potential to become a major trade and logistics hub in the Caspian Region.

MCGRATH, TURAN (TURKEY): The enthusiasm for increasing the share of renewables in power generation has been among the hottest agenda and policy items in regions covered or influenced by European energy policies and priorities. Driven by global environmental concerns, many countries developed support schemes, and schemes have been implemented in many jurisdictions at the expense of conventional power generation methods, with high capital / marginal costs.

Although enthusiasm does still exist on the macro-policy making stage, and international commitments announced in Paris in December 2015 still keep public opinion optimistic about the continuity of support schemes, at the micro-policy level, adjustments to the schemes in different countries often turn out as restrictions or backward steps in the sense that willingness to incur more costs for supporting renewables has been decreasing.

Turkey is following other jurisdictions such as Spain, Greece, the UK and Germany, in making its support for renewable electricity generation less generous. As well as adjusting its renewable support mechanism it is also curtailing certain opportunities for connecting new distributed generation to distribution networks.

It may well be the case that low-cost domestic energy sources for power generation, such as coal, may undergo a renaissance at least in some countries despite international commitments to reduce greenhouse gas emissions. Turkey, for instance, has introduced a support scheme for domestic coal in power generation through the same legislative adjustment that revised the scheme for renewables. Ultimately, in Turkey, cost control, security of supply and lessening of dependency on energy imports are likely to trump environmental concerns as policy drivers. The view that international investors take of the implications of the recent failed coup and its aftermath for the risk profile of energy sector projects in Turkey will obviously also be a factor.



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As countries, on an increasing scale, start to feel the burden of renewable support schemes on their energy bills, it is likely that we will encounter harsher debates on supporting renewables. Countries and investors who better understand that renewables and conventional sources are not mutually exclusive and juxtapose them in a robust national generation portfolio will most likely be less negatively influenced by this mixed debate.



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ŠTOREK, SLACH (CZECH REPUBLIC): In May 2015, the government of the Czech Republic articulated priorities and strategic objectives within the energy sector for the next 25 years in the updated State Energy Policy (SEP). The SEP identifies uncertainty as the biggest challenge that the energy market is currently facing. The government intends to face this challenge by the effective use of domestic sources of energy and stabilizing the regulatory framework at both the national and European level. At the same time, the SEP puts emphasis on promoting environmental friendliness, a reliable infrastructure and efficient state administration, which should result in increased investor interest in the Czech energy market.

The government further intends to focus on retaining a balanced mix of primary energy sources and the structure of the energy market. It also aims to transition to a low-carbon economy and implement energy saving policies. In this regard, the government is still confident about the use of nuclear power and expects it to replace a portion of coal power plant capacity. The contribution of renewable energy sources is also expected to grow, especially with regard to energy production using biomass. The effectiveness of the use of other renewable energy sources is, however, limited by the Czech climate. In respect of infrastructure, the government aims to increase the effectiveness of energy production and establish better systematic control of the cross-border flows of electricity. Key concerns in this regard are foreign renewable resources, which tend to overload the capacities of the Czech distribution system.

The specific challenges which are crucial for the stability of the Czech energy market are as follows:

- Energiewende in Germany without an intelligent grid
- Non-existence of the North-South line in Germany and excessive wind power generation off the German north coast is threatening the stability of the Czech grid

- Potential usage of gas as a coercive means by the Russian Federation, which is the dominant supplier of gas to the Czech Republic
- The need to secure viable sources of liquefied natural gas (LNG) and transport routes, in response to the above
- Potential uncertain future of Unipetrol, currently owned by PKN Orlen
- Drop in the price of coal and the need to decrease reliance on it as a source of power
- Extension of operations of Czech nuclear power plants

The policies of the government of the Czech Republic focus on keeping the Czech market stable and sustainable. Unlike many other European countries, the Czech Republic has a relatively reserved approach towards renewable energy sources. Instead, the Czech Republic intends to decrease its reliance on coal power plants, by making further investments in nuclear energy.

RÉCZICZA, VÁRSZEGHI (HUNGARY): We believe that currently the greatest challenges for Central and Eastern European (CEE) energy markets are regulatory uncertainty and accompanying populist measures aimed at foreign investors. These factors erode investors' trust and contribute greatly to the fact that investments into regulated CEE energy sectors have not taken new impetus after the crisis.

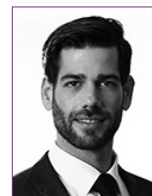
Regulatory uncertainty probably affects the green energy sector the most, where investments are simply not viable without a stable, calculable and sufficiently long-term support regime, which is not the case in many CEE countries. Green energy players would be glad to invest and develop even with a lower level of subsidy if only they could be sure that the rules of the game will not change for the worse until their investment is returned. In order to reach their target in green electricity production, CEE countries must address this issue rather soon.

Populist measures initiated by politicians affect mostly the downstream energy markets which are in direct connection with customers: household distribution and supply of energy. While fair competition must be ensured even in regulated markets and consumer sensitivity to domestic energy prices must be taken into account, using capital intensive energy distribution and supply industries for social transfers carries the risk that it will only achieve something completely contrary



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to the original intentions: security of supply will decrease due to insufficient investment in energy supply and limitation of available sources, and the price of energy will not be lower in the long run either. Such a model is unsustainable in the long term and investors will force changes either through EU measures or by international investment protection instruments.



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MOTYLEWSKI (POLAND): The biggest challenge remains generation adequacy, both with respect to the scale of investment needed for replacement of aging plants as well as technology focus, with some controversy over the government's approach to renewable generation, on-shore wind in particular.

Poland is likely to continue and even strengthen its commitment to hard coal generation, very much in opposition to current European and even global trends of decarbonization and emissions reductions, following the CoP21 Paris Agreement. At the same time, with newly developed and planned power plants, a significant positive effect on emissions reductions and increased efficiency of generation is likely to be achieved over the next decade. Sources of funding of such new projects are another crucial issue, both system support mechanisms (e.g. capacity market), as well as equity and debt, which to a much larger extent may be expected from Asian industry players and financial markets.

Recently the main principles of a future capacity market have been disclosed by the government and are subject to public consultation before the detailed regulatory framework is developed and state aid approval of the EU Commission sought.

In the natural gas market, the biggest challenges remain related to the security of supply and development of alternate supply routes. Poland has succeeded in launching the first stage (5 bn qm) of its LNG terminal in Świnoujście, the biggest of this kind in the region, with expansion potential up to 7.5 bn qm. Other opportunities are being reviewed with interest in supplies from Norway and expansion of the existing transmission network to create a regional North-South corridor. There is even the possibility of gas delivered into Western Europe flowing back from West to East.

MUNTEANU-JIPESCU, POPUTOAIA (ROMANIA): The greatest challenge for Romanian renewable energy producers is uncertainty over the legal framework, where amendments have affected investments already made. Romania employs a quota scheme based on green certificates to support renewable energy producers. The latest uncertainty faced by Romanian renewable energy producers relates to the level of the green electricity quota benefiting from green certificates. This is determined on a yearly basis by the Romanian government.

Renewable energy producers lack any certainty over the quota's level from year to year. Although it might be expected that the quota would increase over time, in theory nothing prevents the Romanian government from approving—for one specific year—a lower quota than that of the previous year. For example, in an attempt by the Romanian government to protect final consumers from increased electricity bills, the quota debated in the public space for 2017 is 8.3 percent while the quota for 2016 was set at 12.15 percent. This means that there will be a surplus of green certificates in the market which will not be tradable. However the debate over the quota for 2017 is expected to be settled in late September 2016, and producers still have hopes of a 2017 quota at the 2016 level at least.

FALCIONE, GIULIANI (ITALY): The future challenges facing Italian energy markets mainly focus on energy dependency, the need to diversify the geographical sources of hydrocarbons, and the need to reduce the costs of energy commodities. The country is very dependent on imports of natural gas, but has developed significant renewable capacity, mostly hydro and solar. There is an active market in the acquisition of existing solar plants and the financing of the construction of new wind farms. As elsewhere, support for renewables projects is moving from feed-in tariffs to an auction-based mechanism.

Natural gas distribution concession agreements in Italy represent both a challenge and an opportunity for investors. These are due for renewal in 175 geographical macro-areas, covering the entire national territory, during the next two years. The awards of the concession agreements are tendered, and the winner will be obliged to purchase the existing grids from incumbent concessionaires. This process will require large capital injections that best fit equity investments, due to the reluctance of lenders to finance such deals without the possibility of taking security over the grids or assigning of distribution tariff receivables from households. This is expected to make private equity funds amongst the likely bidders. The industrial know-how can be obtained by joint venturing with incumbent concessionaires in need of capital injections to win the tenders.



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Q : How are emerging mega-trends such as big data, proactive consumers and non-traditional competitors impacting the energy landscape in your region?



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MCGEE-OSBORNE (UK): The short answer is "patchily." In the UK, the projected roll-out of smart meters to all consumers is progressing very slowly; consumers aren't really switched on to what this means for them. If politics is reflective of consumer attitudes, consumers seem to be more focused on reducing their energy costs than behaving as "prosumers;" UK energy policy has taken several steps back from the funding of clean generation technologies to moderate the impact of decarbonization on consumer bills.

That said, the traditional utility model is under threat, right across Europe: witness Engie's complete write-down of its thermal generation portfolio and refocus of its business. Changes in domestic law and regulation allow non-traditional suppliers to bundle utility supplies and further combine these with other services such as financial services (e.g. insurance). There is much talk about major retailers offering such bundled services. So far, market take-up is relatively low profile. Take-up of new technology is quietly gaining momentum and is set, eventually, to revolutionize the industry; for example, free re-charging of electric cars on UK motorways has ended, because take-up has reached critical mass.

In the emerging markets of the Middle East and Africa, there is little penetration of these concepts. Yet. The preoccupation of governments in these regions is (for those with established resources industries), diversification of the economy and dealing with the consequences of lower oil prices; for those without resources, rural electrification and infrastructure development are policy drivers. It is hard to escape the thought that, in the same way that rapid mobile phone take-up obviated the need to develop fixed line telecommunications systems in many less mature economies, the adoption of small-scale, locally-distributed generation technologies may displace investment in grid expansion in less developed economies.



Q : What effect are global and local initiatives to combat climate change having on your clients' businesses and decision-making?

MCGEE-OSBORNE (UK): The events leading up to and following Paris CoP21 have been seismic in their effect. Paris reset the "factory settings" for generation development decisions to put renewables first. In 2015, investments in renewable technology exceeded those in conventional generation for the first time. Markets previously impervious to the "fad" of renewable energy deployment have now adopted clean energy policy. Battery and storage technologies are emerging rapidly. Small and modular nuclear reactors are the subject of facilitation policies in several markets. Infrastructure fund investors have changed their policy from investing only in built assets to investing in development projects, with ever-more appetite for emerging technology risk. One brake on the emergence of climate-driven technologies is the willingness of governments to commit consumer or taxpayer investment to technologies the subsidies for which increase energy bills; witness the UK's withdrawal of support for CCS and rowing back of renewables support. CoP22 in Marrakech will be a critical check-point, to see whether policy-makers have stepped up to honor their commitments given in Paris; ultimately, whilst the climate change genie is out of the bottle, whether or not the surge of clean technology development will be maintained depends on their doing so.



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BLACK, DE SILVA (UK): The growth in European deployment of renewable electricity generation, and in particular solar PV technology, has so far been driven by subsidies that were awarded automatically to all eligible plants. As these subsidies are abolished, or the budgets for them are capped or reduced, renewable generators have a number of options to continue growing their market share. They can hope to reduce costs, by looking for operating efficiencies or economies of scale, or (in the case of solar operators) lobbying for a removal of the minimum import price rules that prevent them from benefiting the full reductions in panel costs achieved by some Chinese manufacturers. They can find corporate end-users of power willing to enter into long-term power purchase contracts, hoping that this will provide certainty of revenues at a level above current market reference prices. They can seek to optimize the value of their grid connections by sharing them with complementary power generation technologies (e.g. solar + wind, or solar / wind + a small gas / diesel-fired unit) or experimenting with energy storage (e.g. with co-located batteries). This kind of grid-sharing arrangement may also allow renewable generators to supplement their revenues from power sales with additional income streams derived from providing ancillary or balancing services to grid operators, or even participating in capacity markets.

In the long term, given the variable/intermittent nature of solar and wind generation in particular, the development of large-scale storage capacity, along with other sources of flexibility in the power system (such as demand-side response and interconnection) must play a crucial role in maintaining a secure supply of low carbon power. Already, battery storage is demonstrating its capability to react very quickly to system balancing needs, potentially also reducing the need for peaking plant or grid reinforcements. For those who invest in storage capacity, the most popular strategy in the short term is likely to be to contract with an aggregator, but this may change if distribution network operators are given a more active responsibility to balance supply and demand within their own networks (rather than balancing only being carried out by transmission system operators at a national level) and if they are able both to monetize the value of storage to their own businesses (for example in avoiding the need for network reinforcements) and to share that value with renewable generators. But it seems likely that to enable storage technologies to flourish, legislation and policies will need to be updated. For many years, European markets have been regulated in terms of four basic activities: generation, transmission, supply (retail) and distribution. There is a strong case that mass demand for storage (which will in turn reduce its price) will only come when the regulatory paradigm—so much of which is based on the notion that grid-scale electricity essentially cannot be stored—is adapted to recognize storage as a distinct activity which may be entered into by operators carrying out any of the four traditional functions. Given that most storage technologies are generally considered to be only borderline commercially viable, a push by regulators to clarify the rules and provide certainty on future revenues is likely to be needed if Europe is to help lead the development of energy storage in the same way that it helped to lead the development of large-scale renewable generation.



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Q : What changes do you foresee in the energy sector in your region over the next decade or so? What will be the key drivers of those changes?



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FORNACCIARI (FRANCE): The French multi-annual energy plan is the main tool to implement the objectives of the Energy Transition for Green Growth Act of 17 August 2015. The renewable energy part of the program has been established by a decree of 24 April 2016. It sets ambitious goals in terms of increasing the role of renewables in the energy mix and lays down measurable objectives.

However, the government has not yet disclosed the nuclear part of the plan. The Energy Transition Act of 2015 sets the objective of reducing the share of nuclear power in electricity production to 50 percent by 2025 (compared to 78 percent currently). However, the medium-term plan does not explain how this objective should be reached. It mentions a reduction of the nuclear element in the annual electricity generating mix of between 10 TWh and 65 TWh. The French government said that this implied the closure of 10 nuclear power plants, in particular the Fessenheim plant (12 TWh). However, the National Audit assessed the number of plants that would need to be closed down to be between 17 and 20, in order to reach the 50 percent mark. The Parliament regretted that the government was unable to specify which plants needed to be closed, thus increasing the lack of visibility on EDF's future.



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MAYER (GERMANY): Germany continues on its path to Energiewende. Germany has raised the bar in terms of setting the pace for renewable energy policies. By going renewable, Germany has created more than 350,000 new jobs, built up the world's leading green technology sector, and has reduced its dependency on fossil fuel imports. However, the feed-in tariff system has been expensive. The above-market prices meant that many investors rushed into renewables and renewable capacity expanded quickly. At the same time utilities also invested heavily in new fossil-fuel generation, especially modern gas-fired power plants. The simultaneous dash to renewables (which were given priority grid access) and new fossil-fuel power plants resulted in overcapacity and caused wholesale prices to tumble, which has battered the utilities' profits. At the same time, the prices paid by consumers have been rising because of the above-market prices guaranteed for renewable energy. The latest reform of the Renewable Energy Act has now introduced a new system of auctions that aims at controlling how much capacity is added each year and introducing market-based elements to support renewable energy investment. In principle, the reform provides that feed-in tariffs will now be discarded in favor of an auction system for renewable technologies. The developments in the coming years will

be determined by the nuclear phase out by 2022, continuing growth in the renewable energy sector, decarbonizing electricity production, expansion of the power grid, diversification of the big utilities and an ever growing digitalization of energy supply.

LASA (SPAIN): The start of operations of the Iberian gas hub (MIBGAS) last December 2015 is expected to benefit the competitiveness of Spanish industry with a drop in gas prices and alignment with other European gas hubs. The new electricity interconnection between the Bay of Biscay and France, planned to be built in 2019, will reinforce the integration with the European electricity network, as a back-up to the Spanish electricity system, and will result in lower electricity prices. Renewable sources of energy should be promoted through adequate economic incentives to foster innovation and environmental sustainability, with a special focus on non-mainland territories where the integration of energy storage methods would eventually become essential to guarantee their energy supply.



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The EU's Energy Union project: a progress report

By Adam Brown



As described by the European Commission: “The Energy Union means making the EU’s energy more secure, affordable and sustainable. It will allow a free flow of energy across borders and a secure supply in every EU country, for every European. New technologies and renewed infrastructure will cut household bills and create new jobs and skills, as companies expand exports and boost growth. It will lead to a sustainable, low carbon and environmentally friendly economy, putting Europe at the forefront of renewable energy production and the fight against global warming.”

That, at least, is the theory. The European Commission’s Energy Union project is nothing if not ambitious. It has five “dimensions:” supply security, a fully integrated internal energy market, improved energy efficiency, climate action and research and innovation (supporting breakthroughs in low carbon technologies). Amongst its objectives are to:

- “pool resources, connect networks and unite the EU’s power when negotiating with non-EU countries;
- diversify energy sources – so Europe can quickly switch to other supply channels if the financial or political cost of importing from the East becomes too high;
- help EU countries become less dependent on energy imports;
- reduce Europe’s energy use by 27 percent or greater by 2030;
- build on the EU’s target of emitting at least 40 percent less greenhouse gas (GHG) emissions by 2030; and
- make the EU the world number one in renewable energy and lead the fight against global warming.”

In effect, the Energy Union is a rebranding of much of previous EU energy policy that attempts to drive a number of existing initiatives to the logical next step whilst also making them politically acceptable. Issues like energy security—“keeping the lights on,” making sure that there is enough fuel to go around—are quintessential concerns of the state and therefore of national governments. At one level, the Energy Union is arguably an attempt to solve the energy policy problems that all EU member states face at the EU level—or at any rate to take EU level action that will help them solve those problems at a national level and allow the EU to take some of the credit for the solutions. This of course makes it more likely that the EU (or indeed the European Commission) will end up taking what would normally be political decisions for the governments of individual member states.

The overall plan for the Energy Union was launched on 25 February 2015, when the Commission adopted “A Framework Strategy for a Resilient Energy Union with a Forward-Looking Climate Change Policy.” Since



then, a number of consultations have been launched on specific policy areas; Commission Vice-President Maroš Šefčovič has been engaged on a tour of member states to discuss the ideas of the Energy Union with them and other stakeholders; a series of “State of the Energy Union” reports has been issued (covering progress at both member state and EU level); and some specific legislative proposals have been advanced, with more to come.

It is much too early to analyze fully what the ultimate contribution of the Energy Union will be in the various areas it is intended to affect. Here, we offer an overview of progress to date.

Decarbonization

The EU fully supported the CoP21 Agreement reached in Paris in December 2015 under the auspices of the United Nations Framework Convention on Climate Change (UNFCCC). It is on track to meet its 2020 target for reducing GHG emissions by 20 percent below the 1990 level, but needs to do more to meet the 2030 emissions reduction target of at least 40 percent. In 2015, the Commission proposed a revision of the EU Emissions Trading System (ETS), to cover the period from 2021 to 2030. In July 2016, the Commission took a further significant step by publishing draft Regulations that would set binding GHG emissions reduction targets for individual member states to achieve by 2030 in sectors not covered by the EU ETS and require them to achieve a position of no net emissions arising from land use, land use change and forestry over the periods 2021 to 2025 and 2026 to 2030. At the same time, the Commission published “A Strategy for Low-Emission Mobility” which, amongst other things, seeks to align energy and transport policy more closely in this area.

However, there is no room for complacency. It has been estimated that in order to have a 50 percent chance of keeping global average temperatures below 2°C, global net zero emissions would need to be achieved by 2050. To have a similar chance of achieving the more demanding 1.5°C target that is recognized as highly desirable by the Paris Agreement, net zero emissions would have to be achieved by 2035. Of course, most of the “Intended Nationally Determined Contributions” submitted by individual countries around the world prior to the Paris Agreement were no more ambitious (or were not even as ambitious) in terms of their targets or more explicit (or were not even as explicit) about how they would be reached than the EU’s. But the fact remains that in order to maintain its claims to global leadership in this area, the EU faces considerable challenges.

Much of the reduction in GHG emissions to date has been driven by factors other than the EU ETS (notably the recession that followed the financial crisis of 2008, the closure of old combustion plants as a result of Directives designed to reduce pollution in the form of SO_x, NO_x and dust,

and the movement of production by global companies away from the EU's relatively high labor costs). These factors have masked the inherent weakness in the overall cap on emissions imposed by the EU ETS, which has resulted in a "carbon price" for allowances issued and traded under the EU ETS that provides an inadequate incentive to decarbonize. Against this background, and with the coal-fired power sector still strong in Germany and enjoying political support in Poland, it remains unclear whether the political will can be found to adopt sufficiently rigorous emissions limits going forward. Although the Commission blandly asserts, in response to the question, "how will the emissions reduction targets help the EU's economic competitiveness?" that "the targets are delivering several economic benefits," the fact remains that unless we move into a world of permanently lower gas prices (as may already have happened in the US), there is likely to be continuing pressure to allow room in the EU ETS for more coal-fired plant than is really desirable from the perspective of an ambitious emissions reductions policy.

27 percent renewable energy by 2030

Although the EU has set a target of 27 percent renewable energy by 2030, it has also decided (in contrast to its approach to its 2020 renewables target) not to have separate targets for individual member states as a way of ensuring that the overall target is met. What, then, will be done to encourage further deployment of renewables as part of any successor to the current Renewable Energy Directive?

As part of the Energy Union project, the Commission has consulted, in a fairly open-ended way, on both the future of EU renewable energy policy and possible EU-level reforms of electricity market design. The two topics are closely linked, as many member states are finding that even within their own borders, markets designed around a model of large, centralized and readily despatchable fossil-fueled generating plants are having difficulty accommodating the increasingly decentralized and variable generating capacity that comes with a shift towards renewables; whilst the surges in exports across interconnectors that can be produced when surplus solar or wind power moves from one country to another cause a range

of problems. Amongst the questions raised in the consultation on the future revision of the Renewable Energy Directive were:

- Should future renewables subsidies be awarded, or set, at EU or regional level?
- Should the EU regulate to enable thermal, electrical or chemical storage of energy?
- Should there be "market-based incentives" to locate renewables projects in areas where the grid is not congested?
- How to ensure that power price formation better reflects actual supply and demand (and locational differences in scarcity)?
- What measures should be taken to increase access to alternative fuel infrastructure in order to promote the decarbonization of the transport sector?
- Do existing bioenergy policies do enough to prevent the potential negative environmental impacts of using biomass to generate heat and/or power?
- Which of the different existing uses of bioenergy should continue to be promoted?

It remains to be seen how many of these issues are tackled, and how radically the Commission is prepared to approach them as we move from a world in which the problem is no longer so much how to make renewable technologies part of the mainstream energy industry as, for example, coping with the systemic consequences of large-scale deployment of renewable electricity generating technologies whose output is often less than ideally matched to the profile of demand for power.

Energy efficiency

In July 2015, the Commission concluded that the 20 percent energy efficiency target will be achieved, "provided that existing EU legislation is fully implemented"—perhaps a not insignificant qualification. However, as with the other 2020 targets,



more progress is required. In 2014 the European Council agreed an indicative EU-level target of an at least 27 percent improvement in energy efficiency by 2030, which “will be reviewed by 2020, having in mind an EU level of 30 percent.” Corresponding revisions to the Energy Efficiency Directive are expected to be proposed shortly. So far, a number of different strands have emerged as the Commission attempts to adopt a principle of “Energy Efficiency First” and treat “energy efficiency as a source of energy in its own right.”

In July 2015, the Commission proposed a revision of the Energy Labeling Directive. Amongst other things, this would return to the simplicity of “A to G” ratings for appliances, (no more “A+++”). Just under a year later, the European Parliament has adopted a series of amendments to this proposal. Further advances in respect of energy efficiency are to be expected from the policies emerging from the Commission’s Circular Economy work stream, which although not formally part of the Energy Union project is closely linked to it at a number of points, including product regulation.

Heating and cooling account for half of the EU’s energy consumption, and 75 percent of the energy used for heating and cooling comes from fossil fuels. The Commission has begun to address the huge challenges in this sector, which are harder to attack by conventional regulatory means than the reduction of industrial GHG emissions or the promotion of renewable electricity generation because of the sheer number and variety of decision-makers involved—essentially, any individual or business that owns or has an interest in a building. It does not help that 75 percent of EU housing stock is energy-inefficient, two-thirds of which will still be in use in 2050. The first EU Strategy on Heating and Cooling, promulgated in February 2016, therefore focuses on four main areas:

- Making it easier to renovate existing buildings (particularly those in public ownership and/or multiple occupation) so that they are more energy efficient.



- Increasing the use of renewable heat technology.
- Making more effective use of waste heat from industrial sources.
- Making consumers (both domestic and industrial) more aware of their heat use and the potential for savings.

Perhaps unsurprisingly, the strategy does not hold out any “silver bullet” solutions. The merits of infrastructure choices that have been promoted by EU policy on more than one previous occasion, such as cogeneration / combined heat and power and district heating (and cooling) are rehearsed once again. The strategy also has no legal teeth—member states are “invited,” rather than being under any obligation, to take the various (entirely sensible, but potentially quite complex) steps identified, such as “review[ing] their property laws to address how to share gains from energy improvements in private rented properties between landlords and tenants.” The Energy Performance of Buildings Directive is also due for revision following a consultation in 2015.

Internal energy market

“Completion of the EU single energy market” is a familiar rallying cry. Given the extensive legislation in the “third package” of energy market liberalization measures of 2009, which is still in the process of being implemented in more detail both at an EU and member state level, one might be forgiven for asking

what the Energy Union can or should be seeking to contribute in terms of the internal energy market. As in the case of renewables, the Commission has held a consultation with some fairly open-ended questions (some of them not unrelated to the themes of the renewables consultation).

The aspirations of the “market design initiative” include optimizing the market signals for new investment in generating capacity and empowering consumers (including “prosumers” who produce a substantial amount of their own power) to benefit from flexible market arrangements, whilst also protecting the vulnerable or “energy poor.” Stakeholders have been asked for their views on a variety of topics, including:

- Whether the EU should try to accelerate the process of aligning national balancing markets.
- Whether long-term contracts between generators and consumers are required to provide investment certainty for new generation capacity.
- What obstacles need to be removed to kick-start the uptake of demand-side response.
- Whether “the current national responsibility for system security” is an obstacle to cross-border cooperation, and whether a regional responsibility for system security would be better.
- Whether there is a need for more centralized or pan-EU regulatory control.

- What the future role and governance rules should be for distribution system operators, and whether their tariffs should be regulated at the EU level.
- Whether there should be EU regulation of the circumstances in which capacity markets are introduced and how capacity providers participate in such markets across borders.

The Commission has published the “first results” of this consultation, indicating a variety of views on most topics. It remains to be seen what the Commission will propose by way of “new market design.”

Meanwhile, some tangible progress is being made in developing the physical infrastructure that is indispensable to the operation of the single energy market—physical links between national gas and electricity transmission systems. The Commission has been pleased to note that in the period since the launch of the Energy Union in February 2015 (although not specifically as a result of it), there has been progress in this area: interconnector capacity between France and Spain has doubled, the Baltic states have been integrated into the Nordic electricity market, and the isolation of Malta has been ended by a connection to Italy.

These developments have helped to move towards the achievement of a target, originally set in 2002, for all member states to have interconnection capacity of 10 percent of their electricity production capacity. In 2014, 12 member states still had not achieved this, and the Commission proposed a new target of 15 percent interconnection by 2030. There is, of course, something rather arbitrary about applying such targets to all member states indiscriminately, without regard to geography, generating mix or market structures, and the European Parliament has pointed out the desirability of a more nuanced and evidence-based approach. Nevertheless, it is likely that if anything even the 15 percent target may be something of an underestimate of what is needed in markets with the potential to benefit from high levels of cross-border exchange.

In this context, the mechanisms put in place in 2013, by way of legislation to ensure more efficient national permitting and regulatory processes for infrastructure proposals that are identified as Projects of Common Interest (PCIs, which are often interconnectors) and the establishment of a fund (the Connecting Europe Facility or CEF) to fill in some gaps in the financing of such projects, are proving helpful. For example, on 15 July 2016 it was agreed that €263 million of CEF money should be allocated to projects including a new 100 km electricity line between Dobrudja and Burgas in Bulgaria, a study of whether the Baltic states’ power system can operate in isolation and the options for its synchronous connection with either the Continental European Network or the network of the Nordic countries, as well as the first bi-directional sub-sea gas pipeline

between Estonia and Finland. The European Fund for Strategic Investments is another useful initiative in this area.

Energy security

For many observers, energy security constitutes the defining concern of the Energy Union as distinct from other phases in the evolution of EU energy policy, and which is understood as being heavily focused on the security of gas supply to the EU. In February 2016, the Commission proposed:

- A revised Security of Gas Supply Directive, with a shift from a national to a regional approach when designing security of supply measures and introducing a “solidarity principle” to ensure the supply of households and essential social services when supply is severely disrupted.
- A Decision on intergovernmental agreements that would require their compatibility with EU law to be assessed in advance by the Commission.
- A strategy for LNG and gas storage, to extend the ability of the EU (and particularly those parts of it that are not currently in a position to do so) to benefit from the use of LNG as an additional source of supply.

It appears from the record of the European Council meeting of June 2016, that some progress has been achieved on all of these. In particular, the basis of a compromise approach on the Decision has been reached between the Commission and member states. Negotiations with the European Parliament will begin later in the year. With regard to the Directive, it is clear that the definition of “regions” and the detail of the proposed solidarity principle will continue to be debated for some time.

Research, innovation and competitiveness

In order to help deliver a “vibrant innovation ecosystem” that will help to achieve the other objectives of the Energy Union, the EU’s existing Strategic Energy Technology (SET) Plan is being refreshed. In process terms this will mean a tighter

focus on areas relevant to Energy Union policies (notably renewables, consumers, energy efficiency and transport, as well as carbon capture and storage and nuclear “for those member states interested in those technologies;”) a more integrated approach and tighter and more transparent management. In substantive terms, 10 priority actions have been identified. These include maintaining leadership in renewable technologies and reducing the costs of specific “key technologies” ranging from offshore wind and “ocean energy” to solar systems and algae; developing technologies that can enhance “smartness” and resilience at both a systemic and household level; developing more energy efficient building materials and techniques; and “becoming competitive in the global battery sector to drive e-mobility forward.” These priorities will direct the way in which significant amounts of research funding are allocated.

Governance of the Energy Union

Finally, “governance” of the Energy Union has emerged as an important topic in its own right. The European Council adopted some quite lengthy conclusions on governance in November 2015 and a consultation has followed. Once again, a legislative proposal is awaited, but central to the scheme set out in the Council conclusions is a new sort of national plan.

These plans will cover, in the first instance, 2021-2030. They will be prepared for the first time in 2019 and revised every other year. They will “outline the state of the national energy system, national climate policy, and the national policy framework for all five dimensions of the Energy Union, including relevant national specificities and challenges such as the degree of integration in the internal market.” Whilst “guaranteeing sufficient flexibility and the right of each member state to choose its energy mix,” they “will contribute to the EU climate and energy policy goals and targets for 2030” and the objectives of the CoP21 Paris Agreement and “serve as initial reference points for monitoring the achievement of all EU energy policy objectives and targets.”

Clearly the detail of this feature of the Energy Union is yet to emerge. When it does, it will be instructive to compare it with the system of “legally binding” carbon budgets adopted by the UK under the Climate Change Act 2008. At first sight, although the scope of these new national plans may be somewhat broader, the Commission might be thought to be missing a trick if it did not at least require member states to make it possible to hold their national authorities to account for failure to stick to these new national plans, if only as a matter of national, rather than EU law.

Where will it all end?

It is quite easy to be cynical about the Energy Union. It can readily be criticized as too ambitious (because it is trying to do too much at once) or not ambitious enough (because its key targets look potentially less than world-leading after the CoP21 Paris Agreement, or because, so far, it does not look as if it will adopt any very radical approaches to market design). It is also easy to scoff at the Commission’s insistence on maintaining the “number one” position for the EU in areas such as renewables, or at the rhetoric of “putting consumers first,” when so many sectors of the renewables market are dominated by Chinese manufacturers, and their efforts have driven down prices to consumers lower than the EU—seeking to protect remaining European production of solar PV panels, for example—is prepared to allow EU consumers to enjoy.

But since none of the new legislation that will underpin the Energy Union has been adopted yet, and most of it has not even been proposed in draft form yet, the critics would do well to engage constructively rather than carping from the sidelines. Nothing is ever going to be perfect in a piece of EU regulation: The process of achieving consensus between the Commission, 28 member state governments and the European Parliament makes compromise and the second-best almost inevitable. Whatever is agreed will take a long time to implement and will probably be overtaken by some fresh series of initiatives before that implementation is complete (just as has happened with the “third package” and the Energy Union itself). But it would be quite wrong to conclude from this that the Energy Union does not matter. If the EU cannot achieve fully functioning single markets in such a crucial commodity as energy, it will have failed in part of what some would see as its core mission as a free trade organisation. If it cannot achieve progress significantly beyond the 2020 targets for GHG emissions, renewables and energy efficiency, it will call into question the effectiveness of the EU as a vehicle for achieving wider socio-economic benefits. And if a group of countries that have to some extent pooled their sovereignty and have been co-operating on energy matters for decades cannot agree an effective framework for moving closer to the goals of the Energy Union, what hope is there for the world as a whole to achieve the objectives of the Paris Agreement and avoid dangerous climate change and all the adverse geopolitical and economic consequences it is likely to bring with it?



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Making the single EU electricity market work: ACER and cross-border capacity allocation

By Michał Motylewski

How do you realize the goal of a single EU-wide energy market work when the transmission networks within each member state and the interconnections between them are owned by dozens of different operators, who are regulated by 28 separate national regulatory authorities (NRAs)? For example, how do you reconcile the need that now arises to accommodate cross-border power flows with the physical constraints imposed by existing transmission infrastructure? This is a hot topic today, as German renewable electricity generating plants are producing much more power than German consumers are using and doing so at prices which are highly attractive to consumers in neighboring markets.

Part of the answer to these problems is ACER—the EU Agency for the Cooperation of Energy Regulators. Created under a dedicated EU Regulation¹ and officially launched in 2011 in Ljubljana, Slovenia, ACER has gained importance in European efforts to advance the development of the EU's internal gas and power markets. Currently it is perhaps best known for its work in monitoring wholesale energy markets under the REMIT reporting scheme² and opining on the proposals of the European networks of transmission system operators for electricity and gas (ENTSO-E and ENTSO-G) on EU-wide standards for the operation of the electricity and gas networks and network development plans. But in some of its more recent decisions, ACER has begun to show how it can help to resolve potential disputes between different member states' views on how to deal with the interaction of increasingly interdependent national energy infrastructure systems.

Structure and governance

Managing the integration of highly meshed power systems inheriting varying problems from past policies and business decisions is a complicated task. ACER's composition proves how political balance remains an essential ingredient in advancing the integration of EU energy markets.

ACER is managed by a director appointed by an Administrative Board. The European Commission and the Parliament each appoint two members and the European Council (representing member state governments) appoints five. However, key decisions and positions of the Agency relating to cooperation of transmission system operators (TSOs), including the establishment of EU-wide network codes, compliance of NRAs with

1 Regulation (EC) No 713/2009 of the European Parliament and of the Council of 13 July 2009 establishing an Agency for the Cooperation of Energy Regulators

2 Regulation (EU) No 1227/2011 of the European Parliament and of the Council of 25 October 2011 on wholesale energy market integrity and transparency

relevant EU law on power and gas markets, or access to and operational security of cross-border infrastructure, require a two thirds majority approval of the Board of Regulators, representing NRAs of all member states. On a number of occasions, the Agency has failed to obtain the necessary favorable opinion from the Board of Regulators.

One obvious way to push forward the development of the single EU energy market from a regulatory point of view would be to turn ACER into a single, central regulatory authority with wider-ranging powers and more autonomy from national authorities. While we wait to see how far the Commission may be prepared to travel down that road as part of the Energy Union project, it is instructive to focus on the use that ACER has started to make of its existing powers in the power market to see what authority ACER already has and in what direction its competences may be developing.

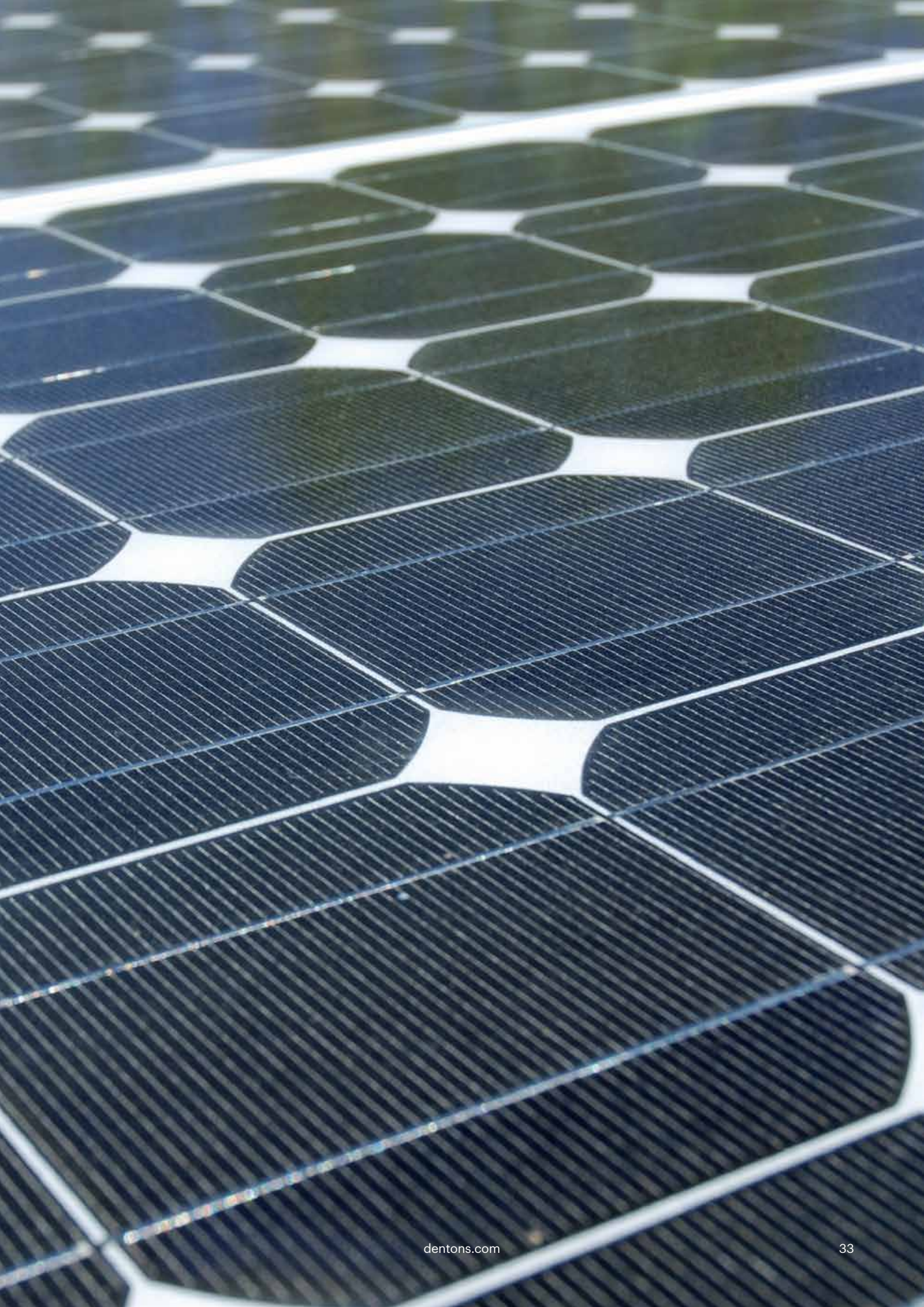
Delegated competences

The third energy liberalization package of 2009, comprised of three Regulations and two Directives, is in many ways really only an enabling framework for the development of single EU-wide gas and electricity markets—each of which is composed of a series of geographic regions. The adoption of these measures, and their implementation by individual EU member states (to a greater or lesser extent) has been followed by a range of subsidiary pieces of regulation, such as the “network codes,” each of which in turn then sometimes requires TSOs or other bodies to cooperate to formulate the further, often highly technical rules (often referred to as “methodologies”) on which the day-to-day working of these markets will ultimately depend, at both an intra-regional and inter-regional level, impacting not only power market players, but more generally the economies of the member states concerned.

In this context, at one level ACER is required to give opinions on a multitude of issues relating to the redesign of the regulatory framework. This includes establishing the ENTSOs and monitoring their activities, rules on regional cooperation, drafting of network codes or network development plans. In this role, the Agency is effectively a specialized advisory body to other authorities, in particular the Commission, rather than a decision-maker.

The EU Regulation on cross-border power exchanges (No. 714/2009) includes only one instance where ACER was expressly authorized to issue a legally binding decision. It concerns exemptions requested for new cross-border merchant lines where the NRAs involved are not able to reach an agreement within a specific deadline or jointly request ACER to resolve the matter instead.

The ACER Regulation, however, includes a broader delegation of decision-making powers where access to and operational security of cross-border infrastructure is concerned. This includes issues that fall within the



competence of NRAs, but again only where the NRAs involved are not able to reach an agreement within a specific deadline or jointly request ACER to resolve the matter instead. The Commission was authorized by member states to adopt detailed guidelines to be followed in such cases.

The Commission has made extensive use of this delegation by adopting the CACM Regulation in 2015.³ It sets an ambitious target in the range of 2017-2019 for the introduction of regionally coordinated day-ahead and intra-day capacity markets, preparation to move to a flow-based capacity calculation model and use of market coupling as a standard capacity allocation arrangement.

ACER was already involved in what may prove to be a landmark case under the new Regulation, as NRAs were not able to reach agreement on the delimitation of capacity calculation regions. Public consultations were launched in June 2016 and touch on significant issues like the merger of the Central and Western European (CWE) and Central and Eastern European (CEE) regions, as well as the introduction of new bidding zone borders between a number of transmission systems. These points of dispute could potentially significantly alter conditions for cross-border power trading in those regions.

The way ACER handles these precedent matters will showcase to what extent the Commission may rely on ACER, considering the level of influence member states have over this authority, to resolve politically sensitive issues such as are likely to arise particularly during the process of power market integration, or may wish to strengthen the Agency's position by giving it decision-taking powers in a wider range of circumstances.

Opinions on compliance with EU energy law – ACER's soft powers

In many respects 2015 was a landmark year for ACER. Apart from the introduction of the CACM Regulation and ACER's involvement in its implementation, the Agency issued its first two opinions assessing the compliance of NRAs' decisions with the relevant provisions of EU legislation on energy markets. These opinions are non-binding. However, we find that they provide an excellent tool for dispute avoidance or amicable dispute resolution of issues that may arise with the advancing integration of national energy markets into regional structures.

In November 2014 the Lithuanian NRA, the National Commission for Energy Control and Prices (NCC), sought an opinion on the compliance of its approach to the methodology for the calculation of regulated transmission prices. The NCC adopted a decision moving from a distance (point to point) to an entry-exit tariff system. In its first opinion, published in July 2015, ACER found misalignment in some of the methodologies and invited the NCC to remove these to achieve compliance with EU law.

In this case a national NRA made its own decision subject to a compliance check by the dedicated EU authority. The NRA and, as a consequence, market participants were able to become reassured which gas pricing policies are in line with the relevant EU law before any dispute had arisen and business was affected. ACER's soft power proved a useful tool in securing uniform implementation of EU wide rules without launching an infringement investigation or court proceedings.

The second case closed a ten-month long investigation into a number of decisions of NRAs in the CEE region on compliance with detailed guidelines on the management and allocation of available transfer capacity of interconnections under Regulation 714/2009. In contrast to the NCC, which had sought confirmation about the compliance of its own proposed rules with EU law, on this occasion the Polish NRA requested a compliance assessment of decisions of NRAs in four other jurisdictions in the context of significant uncontrolled power flows (loop-flows) relating to commercial power exchanges between Austria and Germany.

ACER found that interconnections at three borders in the region as well as network elements within Germany, involved in realizing power trades between Germany and Austria, were subject to structural congestion—a legal term which involves not only cases of congestion on interconnectors themselves but also where elements of neighboring power systems required for management of cross-border flows are congested. As the capacity allocation mechanism required in such cases was not implemented between those two markets, ACER found that the corresponding NRAs' decisions were not in line with requirements of Regulation 714/2009 and invited the TSOs and NRAs of the CEE region to take remedial action, including potential transitory regulatory measures to prepare market participants for any ensuing changes in how the power markets would be organized.

The assessment was formulated in a non-binding opinion. The Austrian TSO and NRA appealed against it to the ACER Board of Appeal. Although these appeals were found inadmissible, further cases are pending with the General Court of the European

Union. It remains to be seen whether the compliance of the disputed capacity allocation schemes will be pursued by the Commission and even result in formal infringement proceedings.

Setting aside the details of the individual cases, it seems that ACER has the capacity to be a useful venue for consultations on the uniform application of EU standards and designs for the power market, where a number of cross-border issues arise. Such matters will usually involve complex and interrelated technical and economic problems, where the insight of a specialized body will prove invaluable, and where a quick fix is either unavailable or would not serve market users' interests well.

The advantage of a procedure, that ensures the compliance of a specific regulatory measure within a wider framework without immediately castigating the national authorities involved, should be underscored. In this particular case, ACER handled a significant set of network operation data and left room for the NRAs and TSOs to work out an appropriate solution. The need of adequate transitional measures was highlighted, adding flexibility to determine how to approach the compliance issue identified. The vigorous opposition by the Austrian NRA shows that for various reasons, NRAs might not always be quick to embrace this opportunity. However, with the growing interdependence of power systems and markets, following in particular implementation of the CACM Regulation, the desire to refer cases to a specialized body driven by consensus and allowing for a flexible approach to remedies may sometimes be more attractive than making matters immediately subject to more formalized and stringent infringement or litigation procedures.



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Smart Grids: prospects and challenges

By Peter Mayer, Marc Fornacciari, Dan Burge, Michał Motylewski, Tomasz Janas, Tracey Sheehan

Smart Grids have been a topic of conversation for a number of years, but when will they arrive and start to deliver benefits in the European energy sector? Recently, the level of activity and interest in this area—among energy sector operators, regulators and investors—has significantly increased.

Following the launch of EU initiatives such as Projects of Common Interest, the Juncker Plan, the Energy Union and the Capital Markets Union, investors are focused on future infrastructure projects, and we now seem to be at a point when that could include significant progress on Smart Grids. In particular:

- The European Commission is releasing funding into the market.
- There is increased multinational collaboration.
- Consumers are demanding better value.
- Regulation is moving in the correct direction.
- Globally, there is a move towards an understanding of the key issue of cyber security.

What is a Smart Grid?

The term “Smart Grid” has increasingly become a marketing “term of art.” However, the European Regulators Group for Electricity and Gas stated that a fully functioning Smart Grid will exploit communication networks to “cost efficiently integrate the actions of all users connected to it—generators, consumers and those that do both—in order to ensure an economically efficient, sustainable power system with low losses and high level of quality and security of supply and safety.”

Why is a move to Smart Grids important?

The main driver for change is the advancement of the EU’s carbon reduction, renewables deployment and energy efficiency targets. Traditional electricity networks were built on the assumption that power would be generated in large and often fairly centrally located coal, gas or nuclear power stations and flow “downhill” from them towards end-users, down a series of progressively narrower “channels.” But in a world where a much higher proportion of generating plants is small-scale and (in the case of renewables) its output is harder to control, power is increasingly flowing “uphill” through these networks, from the periphery to the center. To make this process sustainable and avoid excessive development of new network infrastructure, we need information and communications technology (ICT) to provide real-time information about power flows and demand at a local level, and get around the bottlenecks in the physical infrastructure that prevent efficient transmission and distribution.

Funding

The availability of funding plays a huge role in any major infrastructure project. Elsewhere in this publication we discuss how infrastructure sharing could help to bridge the gaps in infrastructure investment that need to be overcome to meet the EU's 2020 and 2030 targets and beyond. However, it is also encouraging to see that funding is also already becoming available from a number of different streams specifically for Smart Grids. This includes both private and public funding for Smart Grid Research & Development (R&D) and Demonstration & Development (D&D) projects. Overall, private and public sources of funding each account for about half of the total budget, although about 90 percent of projects receive some form of public financial support, with projects in Eastern Europe being particularly reliant on the European Commission for their public funding. Although more than half of the total budget is accounted for by projects in France, Germany, Spain and the UK, on average 70 percent of the projects in any given country are multinational collaborations of some sort.

The priority given to Smart Grids can be seen from their inclusion in the list of Projects of Common Interest (PCIs) under the Infrastructure Regulation (347/2013). Such projects are given a considerable helping hand through the planning and permit granting process, special treatment in terms of regulatory funding, and the opportunity to apply for financial support from the €5.85 billion Connecting Europe Facility (CEF). Although only three projects have so far been included under the "priority thematic area" of "Smart Grids Deployment" in the list of PCIs, it is noticeable that one of them has received the second highest amount of financial assistance of any of the electricity projects among the 60 projects that have so far been allocated CEF funds. At a national level, examples of public support or incentives for Smart Grids include the UK, with innovation funding awarded to Smart Grids by the regulator Ofgem, and Poland.

Regulation

As the decarbonization and decentralization of the electricity system progresses, it is becoming more complex to plan, control and balance. Energy regulators need to find the most efficient and effective way to deploy technology to make the grid smart and consider the right costs when approving grid connections, so as to ensure all users connected to Smart Grids are in a more efficient situation.

Collaborating on a policy and regulatory environment that supports Smart Grid investment is perhaps the single most important task for all stakeholders. As with most policy issues, the key is to find the right balance in sharing costs, benefits and risks. The responsibility for achieving this balance lies with regulators and, in some cases, legislators, but it must include input from all stakeholders.

Regulation will need to adapt to support all users connected to a Smart Grid. In doing so, we consider it will need to address a number of key issues.

With regard to electricity generators:

- Mechanisms need to be developed to encourage business models and markets that enable the flexibility required by variable generation deployment and ensure reliable system operation.
- Markets must be transparent to allow asset owners and third parties to enter and offer conventional as well as innovative solutions to provide such flexibility.
- The rise in the number of electricity consumers who produce small amounts of electricity at or near the place of consumption—often referred to as “prosumers”—needs to be accommodated (and, if possible, turned into an advantage rather than a problem).

With regard to transmission networks:

- Regulatory mechanisms need to be refined to deal with transmission capacity and interconnections with other countries. Deploying new transmission is often complicated by the unbundled and liberalized nature of electricity systems and by lengthy approval processes.
- Policies must allow timely and adequate transmission system investment; inadequate investment brings risks of higher costs in the future and of system failures.

With regard to distribution networks:

- Introducing “smartness” into distribution networks is more challenging than it is for transmission networks because there are typically hundreds of times more “nodes” to be integrated into the ICT systems than there are in a transmission network.
- Users—whether business or consumers—will increasingly have some form of generation or energy storage system; regulation will need to address supply into grid as well as safety and security.

- It will be important to adopt regulatory, business and market models that ensure that the costs and benefits of Smart Grids are shared fairly across the value chain, including system operators, generators, retailers and other intermediaries and end users.

With regard to consumers:

- Detailed data sets generated by Smart Grids operation will need to be considered, maybe by way of license condition.
- Security of supply in the more complicated / automation driven networks will be a concern to consumers.
- Should vulnerable customers be protected from the possibility of higher bills? If so, how?
- Should some customer groups less able to participate in dynamic pricing be excused from bearing the extra costs of Smart Grids or being subject to new service conditions? If so, what can or should be done for these customers?
- For consumers, the most obvious manifestation of Smart Grids will be the presence in their homes of a smart meter. The extent to which they feel the full benefits of Smart Grids will depend in part on the choices made at a national level with regard to the implementation of a smart meter roll-out program under the 2009 Internal Electricity Market Directive, including the degree of sophistication mandated as part of any national technical specification for such meters.

Cyber security

The one overriding issue on the minds of chief technical officers of many energy companies is cyber security. Cyber security is rightly perceived as a key issue, as the deployment of increased ICT introduces new vulnerabilities to the system.

These vulnerabilities may stem either from accidents, such as a local communications failure, or from deliberate malicious acts by third party attackers or potentially fraudulent or even disgruntled employees.



The cyber security risks involved are magnified by the difficulty of remedying systemic vulnerabilities across such broadly deployed infrastructure and the very serious potential consequences of a failure. For example, it has been speculated that a widely based cyber-attack could shut down a whole city if it were supplied by a Smart Grid.

Conclusion

The transition to Smart Grids will have to deal with the challenges of security, transformational change, demand management and uncertainty, but the economic benefits should ultimately outweigh these costs. In one sense, Europe presents a particularly challenging environment for Smart Grid projects: it is probably technically easier to design or regulate a Smart Grid in a developing country which has limited legacy infrastructure. But on the other hand, it is the very characteristic problems of Europe's legacy network infrastructure—built as much of it was to accommodate models of power generation and consumption that are in the process of being superseded—that could provide the stimulus and opportunities for companies involved in European Smart Grid projects to take a leading role in the sector globally: a case of “if you can make it there, you can make it anywhere.”



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Stormy weather in the UK North Sea

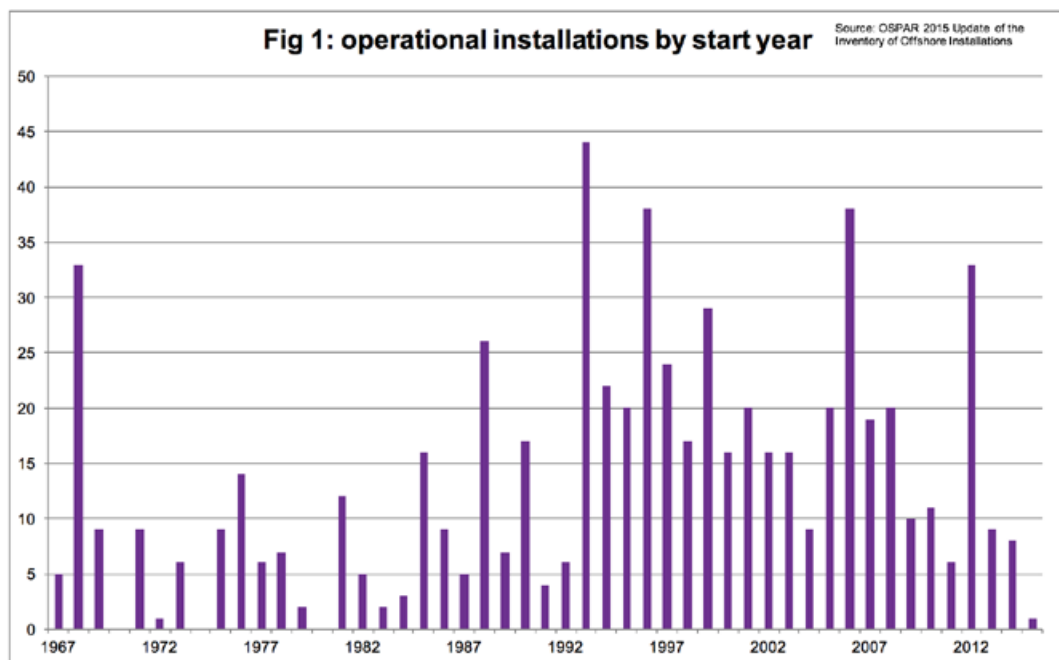
By Chris Thomson



The offshore upstream oil and gas industry on the UK Continental Shelf (UKCS) appears to be facing a perfect storm of converging headwinds.

While substantial petroleum reserves remain unrecovered from the UKCS (estimates range from 11 to 21 billion boe against historical production of 42 billion boe), the basin is now undeniably more mature than most of its competitors for investment.¹ One indication of this maturity is the shift in the production base from a smaller number of larger fields to a larger number of smaller fields. This change has increased the level of interdependency between projects and contributed to the cost escalation that the UKCS has experienced since production peaked in 1999.

At that time, average unit lifting costs were about £3-5/boe but they have since increased to about £17/boe.² There are a number of factors behind this rise, in addition to the maturing production base, including increased activity levels (and therefore input costs), a significant reduction in production efficiency and increased regulatory costs. One of the drivers for recent activity levels has been the growing amount of work required to maintain a fleet of aging installations.



The chart above demonstrates not only the extent to which an increasing proportion of the UKCS' installations are approaching or beyond the end of their design lives, but also the rising number of installations, which are in many cases dependent on the integrity of the infrastructure system as a whole, even as this becomes increasingly complex.

¹ <https://www.gov.uk/guidance/oil-and-gas-uk-field-data>

² Oil & Gas UK: Economic Report 2015

While as recently as 2012, the UKCS had one of its busiest years for new installations, and capital investment hit a new record level in 2014, the stresses outlined above have become increasingly exposed since the decline in oil prices from June 2014.

Even before the price environment changed, the UK government had begun a process of reviewing and reforming the UKCS' regulatory regime. While these reforms are timely and potentially give the government the tools to intervene in support of the industry that it lacked previously, they have also introduced an element of uncertainty about when and how such tools will be used, which may be viewed by some as another barrier to investment. This uncertainty over the regulatory environment has been compounded by the result of the UK's referendum decision to leave the European Union, although it should be noted that shares in several oil companies with exposure to the UKCS have been trading up since 23 June on the basis of their weakened Sterling cost base.

The possibilities of physical and financial domino effects if key elements of the UKCS infrastructure system are decommissioned, or if there is a general collapse in investment confidence, are very real. In the rest of this article we consider what could be done from a regulatory perspective to manage the UKCS' key offshore infrastructure as the basin declines in a controlled manner and what opportunities may arise for those participating.

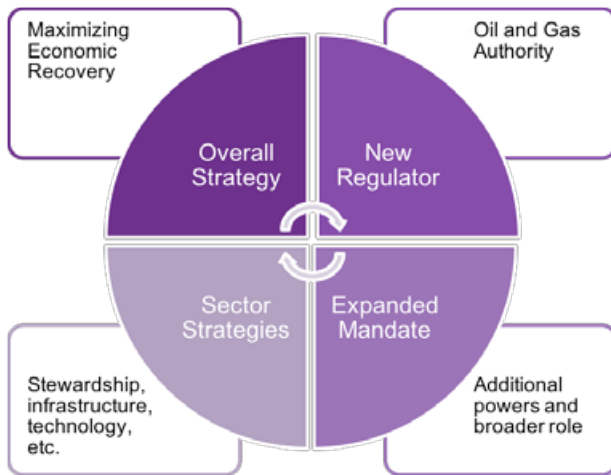
Time for a new plan

While the challenges facing the UKCS have been anticipated, if not so acutely felt, for many years, previous attempts to reform the regulatory environment have been relatively limited in scope and effect. In contrast, the pace and extent of change since Sir Ian Wood's final report was published in February 2014 have been dramatic. The Wood Report's recommendations have largely been adopted:

- Key stakeholders in offshore licenses and infrastructure are obliged to "take the steps necessary to secure that the maximum value of economically recoverable petroleum is recovered" from the UKCS under a binding strategy document known as MER UK.³
- The Oil and Gas Authority (OGA) has been established to exercise the government's existing licensing powers and has been granted a broader mandate and new regulatory powers to support the implementation of MER UK.

³ <https://www.gov.uk/government/publications/maximising-economic-recovery-of-uk-petroleum-the-draft-mer-uk-strategy>

- The OGA has published a five year plan and is currently preparing strategy papers in relation to key operational sectors which will elaborate how the central obligation of MER UK applies in these areas.



While the UK government has a track record of intervening in the UKCS, the previous regulatory framework was relatively “light touch” and previous reviews of it had argued for further deregulation. The introduction of MER UK and the OGA represents a striking change of approach, not only by increasing regulatory obligations and enhancing the power of the regulator to enforce them, but also by anticipating the OGA actively facilitating collaboration between industry participants and promoting investment in and the development of the industry.

So what now?

How the OGA will exercise its mandate remains to be seen, but it could choose to use it to intervene in the market to manage the risks of an uncontrolled domino effect.

The OGA’s corporate plan sets out what it sees as the most urgent priorities by reference to value and urgency. Of these priorities, the most valuable and urgent are identified as four key pieces of transportation infrastructure. These generally share a number of common features:

- A large number of relatively marginal upstream projects tie into them, but the infrastructure owners have no or limited interest in those projects.
- The infrastructure is at the end of its design life.
- Extending the life of the infrastructure will require capital investment.
- The longer the infrastructure remains operational the more expensive it will be to decommission.
- Passing all of the costs of life extension work and increased provisioning for decommissioning through to the upstream licensees is likely to render their projects unviable.

Resolving the tensions between the interests of the upstream licenses and the infrastructure owners in these cases is a key challenge for the OGA and an area in which it may be tempted to intervene using its new powers to enforce the obligations in the MER UK strategy document, as outlined below.

License holders and infrastructure owners are now required to sell their licenses/assets to “financially and technically competent persons” where:

- They do not have the funds to operate (having discharged an obligation to seek new investment first).
- Continued operation would generate unsatisfactory returns.

When selling, the seller must not demand compensation above fair market value or impose unreasonable conditions. A new investor is entitled to require other parties benefitting from the investment to contribute to the costs involved, but only to the extent that is fair and reasonable in the context of MER UK’s central obligation (to maximize recovery from the UKCS overall). Before decommissioning any infrastructure, the owner must demonstrate that “all viable options for their continued use have been suitably explored including those which are not directly related to the recovery of petroleum.” The OGA is entitled

to impose a sanction notice on anyone failing to comply with the obligations in the MER UK strategy document or any plans that it may issue pursuant to the strategy. Such a notice may include directions as to what the subject of the notice must do in order to be in compliance. A failure to comply with those directions could result in the imposition of further sanctions, including fines and license revocation.

The game changer

One potential approach to using the OGA's mandate to resolve the challenge of cases like the key infrastructure assets described above could be as follows.

The OGA could require the infrastructure owner to sell the asset (rather than decommission it) to an investor which thinks it can operate the infrastructure more efficiently than the incumbent.

The infrastructure owner might be persuaded to accept a nominal sale price if:

- The OGA approved a relatively benign decommissioning plan in advance of the sale.
- It had agreed an arrangement with the buyer which resulted in it not having to fund decommissioning costs above the level that it would have had to meet if the sale had not happened.

A buyer might be persuaded to invest if:

- It could acquire a business for only a nominal amount more than the capital expenditure required to extend the life of the infrastructure and any additional decommissioning costs above the seller's commitment.
- The OGA was able to obtain the upstream licensees' consent to a "fair and reasonable" cost sharing compromise, which we expect would need to include a commitment to ship a minimum volume of petroleum over a longer than normal period to allow the buyer to recover its investment.



To the extent that any parties involved objected, they could be encouraged by the prospect of fines and licence revocation for failing to comply with their obligations under the MER UK strategy.

The viability of such a compromise would, of course, be constrained by the specifics of each infrastructure asset and the parties involved as well as the extent of the decommissioning burden, which would in turn be influenced by tax considerations as well as OGA's ability to rely on derogations from the UK's obligations under the 1992 OSPAR Convention for the Protection of the Marine Environment of the North-East Atlantic.

The idea of a UK regulator taking on a brokering role as described above would certainly be game-changing territory for the UKCS, but we submit that it is worth considering because the consequences of failing to manage the late life of key infrastructure assets in a manner that permits an orderly decommissioning of the UKCS are likely to be dire for the industry and, by extension, for the British economy and taxpayers, and because the OGA and its mandate appear to be specifically geared towards fulfilling such a role.

Solutions other than the one outlined above may be more appropriate in other cases. Until recently, the UK government had been considering using depleted reservoirs for carbon capture and storage, for example. Gas storage projects may become more attractive again as UKCS gas production declines, particularly if the UK becomes less integrated with the European energy market. New ideas, such as energy storage for offshore wind farms, may emerge. In some cases there may be no solutions. What appears likely, however, is an increased appetite for intervention by the OGA to encourage creative and collaborative solutions to the challenges facing the UKCS.

The silver lining

The total cost of decommissioning the UKCS' remaining installations is probably impossible to estimate accurately: the figures still range widely between the tens of billions. Whatever the final amount, it will be a daunting sum, but it also represents an opportunity. The offshore decommissioning industry is still taking its first steps towards genuinely large projects, so the winners remain to be determined and may not necessarily include the major international oil companies; however, the scale of the prize globally is clear, and the UKCS may turn out to be the first major proving ground.



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“Help! I’m in a bad contract, get me out of here!” Disputes after the oil price crash

By Liz Tout and Matthew Vinall



The only predictable thing about oil prices is that they are unpredictable. Prices change every day, buffeted by global economic data, rumors of war and peace and unexpected changes in production. However, since late 2014, we have witnessed only the third global sea-change in the oil price during our working lifetime. Whenever one of these seismic price shifts occurs, existing contracts come under intense scrutiny. As disputes lawyers, that means we become busier. So, what have we seen (and what do we predict?) as the world adjusts to a new low oil price environment?

The starting point is to understand how the oil industry reacts to dramatic changes in price. There are two broad reactions, both rational. First, it tries to reduce costs. Second, it seeks to protect its income (preferably without having to spend too much to do so). It is that income that, hopefully, will enable the business (and its shareholders) to weather the immediate low price storm and its effects on profitability and, in time, to adjust the business to the new economic reality. Both of these reactions have led to disputes arising across the entire value chain from upstream to downstream.

Trading disputes

First, there are bread and butter trading disputes, usually arising from non-payment. These remain prevalent (and increasing) as parties suffer cash-flow problems or simply delay payments to improve their financial position. Key for sellers in this environment is to ensure strict compliance with their part of the contract, then to ensure careful internal credit control procedures and satisfactory security for payment.

Long-term supply agreement pricing disputes

While many transactions in the crude and oil products markets worldwide take place in the spot market, a few long-term oil contracts still survive. However, in natural gas and, more importantly, LNG, long-term supply agreements remain commonplace. In Western Europe (as in the USA), parties now often price piped gas by reference to hubs (e.g. NBP, TTF), but LNG, without a reliable, liquid international price marker, is still often sold using price formulae indexed to Brent or oil products. So, although local demand for gas remains the main driver of hub prices, the collapse in oil prices will have led to some LNG contract prices for deliveries to those local gas markets falling dramatically. This unexpected potential dislocation between the LNG price and the local gas price immediately raises the prospect of disputes, using price review or hardship clauses in long-term contracts.

Price review clauses set out the circumstances in which, periodically, the price formula in a long-term contract can change and, if so, how it will change. Both common law and civil law jurisdictions have enforced these clauses. English law does not consider them unenforceable "agreements to agree" provided they include objective criteria enabling usually an arbitral tribunal to decide whether and how the price formula should change.

Hardship clauses are usually looser arrangements enabling a party suffering economic hardship under the existing price terms to ask for the parties to meet to discuss and agree how to change their arrangements to mitigate this problem. In civil law jurisdictions, these clauses are often a reflection of similar relief available under the civil code. Under the common law, hardship clauses are more prone to be found unenforceable because they may lack sufficient objective criteria to apply them properly. Further, there is extensive case law stating the mere fact that a contract has become less financially rewarding (or even heavily loss-making) does not justify the suffering party failing to perform. The case of *Thames Valley Power Ltd. v Total Gas & Power* in 2005 restated this principle the last time we had an energy price shock.

Experience shows that price volatility makes parties more willing to trigger price reviews and hardship clauses, because the sums at stake can be huge and even a matter of life and death for some businesses. We saw this in 2004/5 at the start of the last sea-change in the oil price. In present market conditions, parties should keep long-term contracts under review to check when the next price review falls due and to prepare the economic and legal arguments in case a request is made, or in order to make one. Preparation is, we believe, a key determinant of the result of price reviews. Poorly thought-through requests can prejudice a future arbitration.

Further, make sure your economic and legal arguments are coherent and logical from the beginning, regardless of market conditions. This should help to avoid your claim/defense collapsing if prices change dramatically between the date of the request and when the arbitration hearing takes place (often 18-24 months later). Even though the law says an arbitral tribunal should decide the price review as at the date of the review (i.e. when the request was made), psychologically, change since then will influence them. It is easier to support a downward price review in a market that has continued to fall. However, if prices rebound, absent compelling economic and legal arguments, arbitrators may find it more difficult to accept a price reduction.

The days of the large Western/Central European gas price disputes may be over, due to the influence of hub pricing. However, price reviews in Eastern Europe (where hubs have yet to take hold) and in the LNG market look set to continue and potentially to increase.

So, what else should you do if you happen to be the beneficiary of an historical price formula? As well as getting ready to fight the next price review, you should be careful to check the other terms of the contract to make sure you are not in breach. An innocent party may overlook extra-contractual behavior during good times. Not so during tough times. Opportunism prevails, so a disciplined approach to contract management becomes vital.



Joint venture disputes

Another area where good contract management may pay dividends is in joint venture agreements. We have seen the desire to cut costs resulting in disputes between operators and other participants and between joint venture parties.

From the operator's perspective, it should be careful to ensure that all other participants agree to detailed budgets and work programs to avoid challenges later. It should obtain all necessary approvals for expenditure (AFEs) and issue cash calls as soon as possible with proper documentary support. If it becomes clear that a budget overrun is likely, the operator should ask the Operating Committee to approve a revised budget as soon as possible. Meanwhile, other participants are examining operators' behavior carefully and considering the extent of their exclusions and limits of liability to work out whether there are opportunities to leave them carrying the can for any problems that arise.

Forfeiture

One issue which we have advised on several times in the past year is the remedies available if one participant fails to pay a cash call or its share of the joint venture's costs. Most joint venture agreements contain sanctions for parties in default. The final sanction is often forfeiture, whether of the defaulting party's production / revenue share or its equity interest in the venture/license. Forfeiture provisions may or may not provide for the defaulting party to receive some form of compensation in return for losing its equity interest.

The question of whether these terms amount to a penalty under English law has been circulating without a clear answer for several years. Until recently, the central principle was that to be enforceable, a sanction for breach of contract had to be designed not to force a party to perform but to compensate the innocent party for breach. This question had to be considered at the time the parties entered the contract, not some time later when the breach occurred. However, the decision of the English Supreme Court last year in *Cavendish Square v Talal El Makdessi* has now changed the approach English law takes to penalties. English law now considers whether (1) the innocent party has a legitimate interest in enforcing the relevant contractual term; and (2) whether the sanction is proportionate rather than extravagant or unconscionable in that context.

The Supreme Court in *Cavendish* was not considering forfeiture directly and distinguished between the common law on penalties and equitable principles of relief from forfeiture. Nevertheless, and although the law has yet to be tested, we consider the spirit of the *Cavendish* decision should provide parties seeking to rely on forfeiture provisions with some comfort. In a joint venture, all parties have a legitimate interest in ensuring that every party pays its share of costs. If a party fails to do so, knowing the severity of the sanctions that the other parties may apply, it should expect to suffer the consequences.

Cavendish supports this view. That said, the boundaries of the law remain unclear. So, while a judge may enforce a forfeiture clause during the exploration phase of a project, he or she may feel less happy doing so during the production phase. After all, by then the defaulting party may have made a large investment, so it may seem rather severe to forfeit its interest, especially without any compensation.

Infrastructure disputes

Associated with disputes between operators and other participants over costs, we also predict we will see the same effect cascading down into infrastructure disputes between operators and contractors. We have seen an increase in enquiries about building contracts for both new onshore and offshore facilities signed before the oil price fall but reaching completion now. Owners/operators, under cost pressure, are more willing to hold contractors to lump sum prices by (1) vigorously defending variation and delay claims through both substantive and technical arguments and (2) making big counterclaims for defects or under-performance. Meanwhile, hard-pressed contractors with rapidly dwindling order books will be more willing to pursue their claims. Both sides of these disputes will again benefit from meticulous contract management.

Service contracts

When oil prices are high, so are costs because there is demand for skilled people and specialized materials, equipment and services. If prices fall dramatically, a retrenchment occurs, and there is downward pressure on costs. For many contractors, this is a fact of life and re-negotiations will occur, either to reduce payments or stretch commitments over a longer period in the hope this mitigates the immediate impact of lower prices. However, we have also seen a growth in contract terminations where a negotiated solution proves impossible or impractical. After all, if you no longer need a drilling rig for the foreseeable future, reducing the hire rate or stretching the time frame is not going to work. Therefore, we are receiving enquiries about the enforceability of “termination for convenience” clauses combined with termination payments and limitations and exclusions of liability. From the operator’s perspective, these

enquiries are a precautionary step before pulling the termination trigger. From the service provider’s viewpoint they are usually after the gun has been fired, and they are trying to work out if they can squeeze some more cash out of the operator. There have been some high-profile disputes of this kind in recent times, e.g. *Transocean v Providence* in 2014, and we predict that we will see some more soon.

Conclusions

We are in interesting times as the global energy industry adjusts to a new norm in terms of prices. Once the volatility has subsided and the initial pain has been endured, as it has in the past, the industry will march forward again. However, the shock waves created during the past 18 months or so will continue to fuel disputes for the foreseeable future as the dust settles.



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Energy and communications infrastructure sharing: an idea whose time has come

By Tracey Sheehan and Rebecca Clarke

Infrastructure sharing between energy and communications companies is about to become more prevalent. There are a good number of excellent examples in play within Europe already.

Across Europe, there is recognition that to support a modern digital economy and all things “Smart”—such as Smart Grids / Smart Meters and even Smart Cities:

- The development of Smart Grids will require the upgrade of Europe’s energy networks.
- Current investment levels in energy infrastructure need to increase by at least 70 percent.
- Investment levels in broadband infrastructure also need to increase significantly.

Both communication and energy companies have a vested interest in the rapid development of superfast broadband to support Smart Grids and the EU-wide requirement for the roll-out of smart metering.

The idea of infrastructure sharing between utilities and energy companies within Europe has been canvassed since the 1990s as a way of reducing costs, with very little real progress being made to date and some regulators prohibiting the core assets of energy networks being used for non-core purposes.

However, against the backdrop of the European Commission being concerned that member states will not achieve the 2020 targets that EU energy / climate change and communications legislation has set them, the thrust of regulation is clearly moving towards encouraging this type of cooperation between network operators.

EU Commission's drivers 2020	
Communications	Energy and Climate Change
<p>By 2020, Europe needs:</p> <ul style="list-style-type: none"> • Download rates of 30 Mbps for all of its citizens • At least 50 percent of European households subscribing to internet connections above 100 Mbps • Improvement in the rollout of the latest 4G technology 	<p>The EU's 20-20-20 goals (20 percent increase in energy efficiency, 20 percent reduction of CO2 emissions and 20 percent increase in level of renewable energy by 2020) all depend to some extent on the re-configuration of European electricity transmission and distribution networks into a “Smart Grid.”</p> <p>According to the 2009 Internal Market for Electricity and Gas Directives, EU member states must “ensure the implementation of intelligent metering systems” where it is cost-effective to do so.</p> <p>The Electricity Directive foresees full deployment by 2022 at the latest, with 80 percent of consumers equipped with smart metering systems by 2020.</p>

On 15 May 2014 a new EU Directive on “measures to reduce the cost of deploying high-speed electronic communications” (the Directive) was adopted. Member states were required to adopt national measures to implement the requirements of the new Directive by 1 January 2016, and they must apply them from 1 July 2016.

The Directive is addressed not only to telecommunication network providers but also to “any owner of physical infrastructures, such as electricity, gas, water and sewage, heating and transport services suitable to host electronic communication network elements (except multi-site infrastructure companies).”

The Directive looks at ways to facilitate and reduce the cost of rolling out high-speed electronic communications networks by eliminating:

- Inefficiencies or bottlenecks concerning the use of existing physical infrastructure (such as, for example, ducts, conduits, manholes, cabinets, poles, masts, antennae, towers and other supporting constructions)
- Bottlenecks related to co-deployment
- Inefficiencies regarding administrative permit granting
- Bottlenecks concerning in-building deployment

The Directive applies to “network operators.” This very broad category includes companies “providing or authorized to provide public communications networks” as well as those “providing a physical infrastructure intended to provide” a service of production, transport or distribution of gas, heat, electricity (including public lighting) or water (including disposal or treatment of waste water and sewage and drainage systems); or transport services (including railways, roads, ports and airports). In the energy sector, it is obviously applicable to companies operating transmission and distribution network infrastructure. The following key provisions of the Directive will have an impact on the operation of such companies:

- General right to offer access to physical infrastructure—network operators can offer access but also will be obliged to meet reasonable requests by undertakings authorized to provide an electronic communication network for access to infrastructure. Such access is to be under fair terms and conditions (including price). Refusals of access must be based on objective criteria including the technical suitability of the physical infrastructure, availability of space, integrity and security, “risk of serious interferences of the planned electronic communications services with the provision of other services over the same physical infrastructure,” or the availability of alternative means.
- Transparency concerning physical infrastructure—every undertaking authorized to provide an electronic communication network will have the right to access upon request, via “a single information point,” a minimum set of information concerning the existing physical infrastructure of any network operator. The information must include:

- Location and route
- Type and current use of infrastructure
- Name of the owner or of the holder of the right to use the physical infrastructure

Access to the information is to be granted forthwith in electronic form under proportionate, non-discriminatory and transparent terms. Such access may be refused only when necessary due to the security and integrity of the networks or to protect operational secrets. Public sector bodies and public sector holdings also have an obligation to provide information and to keep it updated.

Every network operator will have the right to negotiate agreements concerning coordination of civil works with undertakings authorized to provide an electronic communication network with a view to deploying elements of high-speed electronic communications networks. Every undertaking performing civil works "fully or partially financed by public means" must meet any reasonable request from undertakings authorized to provide electronic communication networks provided that this does not entail any additional costs and any request is made in a timely manner.

Perhaps inevitably given the complexity of the kinds of infrastructure to which it relates and the mixture of private and public law rights and obligations governing its ownership, operation and use, the Directive legislates in forceful but very general and high-level terms. It is the kind of EU legislation whose ultimate impact will depend very much on the effectiveness or otherwise of member states' efforts to transpose its provisions and enforce them at a national level. At this stage, a number of practical questions remain unanswered for many EU jurisdictions, for example:

- How will national regulatory authorities (NRAs) deal with network providers' reluctance to disclose details of their existing networks and plans to expand?
- Whether NRAs will have the resources to police the required updates of information and deal with disputes on terms for access to infrastructure, including whether terms imposed (including price) are fair, and disputes in respect of permits.
- Whether the communications regulator or the energy regulator will have jurisdiction.
- What will be criteria that will be used to evaluate network operators' objections to a request for access to infrastructure for reasons of e.g. technical suitability or availability of alternative means.
- How to avoid a situation in which investment in less profitable (normally rural) areas is actually reduced as a result of the Directive. This unintended consequence could come about because at present "municipal network" investors use the comparatively high profit margins earned in densely populated areas to make rural areas more affordable. This cross subsidy might be undermined by the Directive if competitors gain easy access to the profitable segment.

The Directive is an important first step at a regulatory level, but in order for consumers and communications/energy sector operators to get the most out of the possibilities that the enhancement of communications capability in and around energy networks can bring, particularly with the development of Smart Grids, they will also have to agree new ways to collaborate commercially.



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The image shows the interior of the Pantheon in Rome, a large circular temple with a massive dome. The dome is covered in a grid of coffered panels, and a large circular opening at the top allows light to stream in. Several large, fluted columns support the structure. The lighting is dramatic, with strong highlights and deep shadows.

Solar suits against Western European governments

By Michelle Bradfield

There has been an explosion of investment treaty claims against Western European countries, which has culminated in the region now being the most sued in the world at the International Centre for the Settlement of Disputes (ICSID) in 2015.

In 2015 alone, nineteen new ICSID claims were lodged against Western European countries, which is more than one-third of all the claims registered at ICSID over the course of the year. Fifteen of those were filed against Spain—all related to reforms of the solar energy subsidy regimes. In total, Spain is defending twenty-six ICSID claims over the changes it has made to its renewable energy policies, while Italy currently has six¹ arbitrations against it. Outside Western Europe, the Czech Republic is currently defending eight separate claims arising out of the government's decision to impose a new levy on electricity generated by solar power plants.²

In this article, we provide an overview of the basis for these claims—investment treaties—then summarize recent claims against Spain and Italy and set out practical tips for companies investing in the energy sector and facing similar issues.

What are investment treaties?

The reality of investing abroad is that investors must deal with political risk and instability. A significant, but often overlooked, source of protection for investors is investment treaties, whether they are bilateral (BITs) or multilateral (MITs). These investment treaties offer a simple and cost-effective method of minimizing political risk and can create significant savings compared with political risk insurance. Appropriate structuring of an investment can provide investors with substantive protections directly against a state that has interfered with its investment.

A BIT is a treaty between two states that gives rights and protections to individuals and companies of one of those states when investing in the other. In order to benefit from these rights and protections, an individual or company need only be a national of one of the states. It is not necessary for them to enter into any direct contractual relationship with a government, merely investing in the state is sufficient. The network of treaties is significant; there are more than 3,500 BITs worldwide.

An MIT is a treaty that is signed by more than two states. Examples are the Energy Charter Treaty (ECT), which has been signed by 52 states, and the European Union and Euratom treaties. The ECT is subject-specific and was designed to promote energy security through the operation of more open and competitive energy markets.

Where an investment treaty is in force, whether a BIT or an MIT, it will generally provide a number of protections for an investor, including where the state:

- Expropriates an investment without compensation
- Fails to treat an investor fairly and equitably
- Treats an inward investor less favourably than its own nationals or nationals from a third state

¹ ICSID x 5 and SCC x 1

² The Czech Republic is also the respondent in one ICSID arbitration unrelated to the solar industry.

- Fails to provide sufficient protection for the investment
- Impedes the transfer of payment out of the state

Investment treaties are governed by international law and not necessarily the domestic law of one of the states. This means that countries cannot hide behind their own law or domestic courts to justify their actions. The dispute is decided by a neutral international tribunal, which is appointed by the parties. The tribunals' awards are final and binding on the state and are not subject to merits-based review by national courts.

The content and scope of protection can vary between BITs, so an investor needs to ensure that if there is a BIT in place, its terms provide the desired protection to the specific investment.

What are the solar claims against Italy and Spain?

The claims against Italy and Spain relate to those states' amendments of their laws and regulations in relation to the renewables industry.

Both states have made numerous changes to their policies over time. One of the significant changes has been a withdrawal or modification of the feed-in tariffs (FITs) regime. FITs were introduced to encourage investment in renewable energy and typically guarantee electricity purchase prices above market rates. However, in response to the challenging economic climate, these states have "rolled back" these and other related incentives and benefits, hitting the expected profits of companies operating in this sector.

Other changes have included changing various aspects of the supporting framework, such as taxes, administrative fees, the off-take regime and the reclassification of property so as to accrue higher tax rates.

Some investors in Italy have chosen to challenge the changes domestically rather than at the ICSID. These investors challenged the *Spalma Incentivi*, which was one of the key pieces of legislation amending the FIT regime, arguing that it was inconsistent with the Constitution. "The Administrative Court of Lazio issued a judgment expressing doubts as to the constitutionality of the *Spalma Incentivi* and it stated that the legislation "raises profiles of unreasonableness and may result in contradictions with ...the Constitution since it unjustifiably affects consolidated privileged positions, established by agreements of 'private law', and the legitimate expectations of the subjects entitled to receive the incentives." The case was referred to the Constitutional Court, which has not yet decided on the matter.

Italy has responded to the onslaught of these arbitrations by withdrawing from the Energy Charter Treaty. Despite the withdrawal, the ECT will continue to cover investments that were made prior to 1 January 2016. Spain has not followed such a radical course of action.

Whilst there is some variation between the claims initiated against the states, the majority of them argue that the changes in how renewable energy companies are treated:

- Breached their legitimate expectations contrary to the ECT/BIT, which requires states to accord “fair and equitable treatment.” Some of the investors are arguing that they relied on government representations to the effect that the FIT would continue to apply.
- Constituted an expropriation in breach of the ECT. “Expropriation” includes not only the overt taking of an investment but also indirect measures (such as taxation) which erode the investment’s financial equilibrium.

Only one arbitration has been decided, and it was in favor of Spain. The Tribunal found that Spain’s actions did not amount to an illegal indirect expropriation nor did it breach the fair and equitable treatment obligation. The majority of the Tribunal found that without a specific commitment from Spain there was nothing that could have given rise to a legitimate expectation. In addition, the changes implemented by Spain were neither disproportionate, nor economically irrational nor arbitrary, and they were in the public interest. The Tribunal emphasized that a different tribunal could come to a different decision when examining all of the actions taken by Spain.

This case only examined Spain’s 2010 measures and not its later measures, including those implemented in 2013, which are also the subject of arbitrations. Additionally, the Tribunal’s rationale is not likely to apply to the Italian cases, on numerous grounds, one of which relates to the fact that in Italy the relevant government-owned entity entered into specific contracts with each investor, thus providing a clear basis for a legitimate expectation.

Practical tips

- These disputes highlight both the political risk accompanying long-term projects in a volatile economic environment, even in Western Europe, but also that national law and project contracts need not be the only sources of investment

protection available to inward investors. Before making an energy-related investment, investors should take into account the protections available under the ECT and/or BITs in force for the host state. This may require selecting a subsidiary registered in another signatory state to hold the investment, directly or indirectly. Such structuring can take place at the time the investment is made or at any time up until the dispute arises.

- Investors should also consider what other protections they can negotiate (for example, through stabilization clauses) or which are available under local investment laws.
- If an investor considers that new state measures materially depart from what it was led to believe at the time of making its investment, it should seek advice from lawyers experienced in investment disputes.



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Brexit and the energy sector: initial thoughts

By Adam Brown



On 23 June 2016, the UK electorate voted to leave the EU. The campaigning organization, leave.eu, was—as its name suggests—on the winning side. It states on its website: “By voting to leave the EU, we are taking back control of our sovereignty, we will be able to put in place our own policies and laws on immigration and our economy, including industry and energy.”

The referendum result raises a host of legal issues. Companies active or interested in the UK energy sector will want to know and understand the implications of Brexit across a wide range of matters, many of which are not specific to their industry, such as tax or employment. Here we attempt preliminary answers to three slightly narrower questions:

- What could “taking back control” from the EU actually mean in the energy sector?
- What use might be made by the UK authorities of any new found freedoms in this area?
- How might Brexit-driven changes interact with other drivers of energy policy?

Common ground and policy continuity?

A few days after the referendum, Amber Rudd, then the UK’s Secretary of State for Energy and Climate Change, began a speech by saying: “To be clear, Britain will leave the EU,” and then went on to itemize at some length why this should not mean any big shifts in UK energy policy. As she put it: “The challenges [securing our energy supply, keeping bills low and building a low carbon energy infrastructure] remain the same. Our commitment also remains the same.”

It is not hard to find examples of the fundamental objectives of EU and UK policy being aligned:

- The UK has been a leading advocate since the 1980s of the kind of liberalization of electricity and gas markets that is now fundamental to the EU’s internal energy market rules.
- EU and UK policy has favored open and transparent markets in which free competition is promoted as a way of delivering lower prices and other benefits to consumers.
- Both the EU and UK have sought to control the adverse environmental impacts of energy industry activities (including, more recently, climate change).
- In practical terms, the UK has been the most open of all EU markets to the ownership of energy sector assets by foreign companies.
- The UK can claim to have been promoting electricity generation from renewable sources for some time before the EU had an effective renewables policy.
- The UK, having adopted the first national scheme of “legally binding” greenhouse gas emissions targets in the Climate Change Act 2008, played a leading role in developing the EU’s position on the CoP21 agreement reached in Paris in December 2015.

Sources of irritation

But broad principles are one thing and the detail of regulation is another. There have been times when the existence of EU law requirements of one kind or another as a constraint on freedom of action by the UK authorities has given some ammunition to those who argue that the EU's energy policies have impermissibly eroded a part of UK sovereignty:

- EU Directives on industrial (non-CO2) pollution have driven a cycle of closures of coal-fired generating stations which some would see as having prematurely diminished the UK's security of energy supply and limited its ability to benefit from cheap US coal prices.
- Various EU rules on environmental, state aid, renewables and single market matters can arguably be blamed for fatally increasing the power costs of UK energy intensive industries to a point where the UK has hardly any steel or aluminum producers left.
- Since the UK (unlike e.g. Germany) has no domestic PV panel manufacturing interests that it wishes to protect, it would prefer not to pursue the current EU policy of imposing a "minimum import price" on Chinese solar panels (thus helping the UK solar industry to come to terms more quickly with the government's decision to curtail subsidies to it).
- Generally, as the body of EU energy regulation has grown in strength and reach, it has become a significant constraint on how the UK government achieves its objectives, even when those objectives are consistent with EU objectives.
- There is also a lingering suspicion that the UK sometimes makes matters worse for itself by taking a more conscientious approach to the implementation of EU law requirements (even those it does not entirely support) than some other member states.

No doubt the UK is not the only member state dissatisfied with aspects of EU energy policy and regulation. But no other EU member state has yet set itself on the course of withdrawal from the EU.

It is unlikely that energy policy will determine the UK government's Brexit implementation strategy. However, focusing just on this one area, if one assumes that the UK will not radically change the overall direction of its energy policies and will remain committed to tackling all three challenges of the familiar security-decarbonization-affordability trilemma referred to by Amber Rudd, how might the UK government and others seek to maximize the opportunities opened up by Brexit?



Back to the future?

From one perspective, the next best thing to being in the EU is to belong to the European Economic Area (EEA) as a member of the European Free Trade Association (EFTA). There is no clear reason to suppose that the UK would be able to leave the EU and continue as a member of the EEA without accepting both the continued free movement of EU nationals into the UK, and opposition to intra-EU immigration was one of the main reasons for the Brexit vote. Nevertheless, it is inevitable in these discussions to begin with the “EEA option(s).”

The UK left EFTA in 1972 to join the European Economic Community, forerunner of the EU. Subsequently, the remaining members of EFTA entered into bilateral trade agreements with the EU, with many later joining the EU. The EEA was formed by an agreement concluded in 1993 between the European Community (not yet officially the EU), its member states and three of the four remaining EFTA states (Norway, Iceland, Liechtenstein; Switzerland remained outside the EEA). What would it mean for the UK to leave the EU and become a party to the EEA as an EFTA state once more?

First, consider the other members of the club that the UK would be (re-)joining:

- In 2015, the UK had a population of 65 million and a nominal GDP of US\$2,849 billion. The four current EFTA states had a combined population of less than 14 million (more than half of which is made up by non-EEA Switzerland) and GDP of just over US\$1,000 billion (of which, again, Switzerland accounted for more than half).
- In 1992, Switzerland voted by a 0.3 percent margin not to join the EEA, and Norway voted by a 2.8 percent margin not to join the EU. Iceland dropped its bid to join the EU in 2015. Fisheries policy (not covered by the EEA Agreement) has always been a sticking point here.
- Norway is the EU’s second largest supplier of both oil and natural gas. It accounts for almost 30 percent of EU gas imports, as compared with Russia’s 39 percent. But virtually all of its electricity is generated from renewable sources (overwhelmingly hydropower).
- Both Norway and Iceland could export considerable amounts of power via interconnectors. For potential importers such as the UK, this is attractive because, unusually, most of these countries’ renewable power output, being hydropower or geothermal, is “despatchable” on demand rather than being a “variable” source of supply like wind or solar power.



- Switzerland has electricity interconnection capacity approximately equal to its peak power demand. It exports and imports power equivalent to more than half its total consumption to and from its EU member state neighbors. The UK is making progress on interconnection, but is still some way from meeting the current EU target of 10 percent of production.
- Norway, although not subject to the EU legislation that underpins the EU's electricity cross-border "market coupling" regime, nevertheless manages to participate in it. (Note that Switzerland is reported to have been excluded from the same mechanism after its referendum vote against "mass migration"—i.e. free movement of people.)

Next, consider how the EEA works legally:

- The EEA Agreement sets out the basic "free movement" rules as they were in the EC Treaty in 1993 so as to create an extended free trade area. This does not extend to all the goods covered by the EU single market, and it only applies to products originating in the EEA.
- If the UK were within the EEA, other EEA states would not be able to discriminate against energy products which the UK exported, provided that they "originated" in the UK.
- Most EU legislation is comprised of Directives and Regulations. These are proposed by the European Commission, negotiated by representatives of the EU member states (the European Council) with amendments typically being proposed in parallel by the European Parliament, and a political compromise being reached between Council, Parliament and Commission on a final text in the so-called "trilogue" procedure. Once they have been adopted in this way, Regulations in principle do not require national implementing measures, because they are directly applicable throughout the EU, whereas Directives generally require member states to enact specific legislation to implement them.
- EEA law is meant to correspond to EU law within the scope of the EEA Agreement. All EEA law originates from the EU legislative process described above, and the EFTA states only have the right to be consulted on its terms—they have no representation in the European Council or Parliament, and they have no vote on the final text.
- However, EU legislation does not have any effect in the EFTA states just by being adopted at EU level. Once an EU Directive or Regulation has been adopted, it must first be determined whether it falls within the scope of the EEA Agreement (which is not always straightforward).

- If a measure is in scope, Article 102 of the EEA Agreement states that it is to be adopted by the EEA Joint Committee “to guarantee the legal security and homogeneity of the EEA.” In most cases, measures are adopted in their entirety with no substantive amendments. However, amendments are possible if it is agreed that they do not affect “the good functioning” of the EEA Agreement. Adoption, and any amendment, is recorded by making entries in the various topic-based Annexes to the EEA Agreement. Energy is dealt with in Annex IV.
- The EEA Joint Committee takes decisions “by agreement between the [EU], on the one hand, and the EFTA states speaking with one voice, on the other.” Article 102 is in effect an “agreement to agree.” Absent such agreement, it allows the relevant part of the relevant Annex to the EEA Agreement to be “suspended”—so far, apparently, an unused mechanism.
- Compliance with EEA laws is enforced both by national courts in EFTA states and by the EFTA Surveillance Authority (ESA), whose position is analogous to that of the European Commission in that respect. Amongst other things, the ESA performs the function of determining whether cases of state aid are compatible with the EEA Agreement just as the Commission does in respect of EU law.
- Finally, the EFTA Court is there to hear cases brought by EFTA states against each other or by or against the ESA as regards the application of the EEA Agreement. As in the case of EU law, failure by a member state to implement EEA requirements can result in infringement proceedings before the Court.
- The EU adopted its “Third Package” of electricity and gas market liberalization measures in 2009, and they came into force in the EU in 2011: The process of EEA adoption has not progressed beyond submission of a draft decision to the European Commission (in 2013).
- The REMIT Regulation on energy market transparency, adopted and in force in the EU since 2011 is still “under scrutiny” by EFTA. Neither of the general Directives on energy efficiency, 2006/32 and 2012/27, yet appears close to being adopted.
- The EU Emissions Trading Scheme Directive of 2003 and Industrial Emissions Directive of 2010 had to wait until 2007 and 2015 respectively to be included in the EEA Agreement.

Other EU energy measures have been considered to fall outside the scope of the EEA:

- The Directives on security of gas or oil supply, such as the Oil Stocking Directive, 2009/119, do not form part of the EEA Agreement.
- Since tax harmonization falls outside the scope of the EEA Agreement, the Energy Products Taxation Directive (2003/96) has not been adopted by the EFTA states.
- The EU’s continuing sanctions measures against Iran (those adopted “in view of the human rights situation in Iran, support for terrorism and other grounds,”) like other EU Common Foreign and Security Policy measures, are not part of EEA law.

In some cases, adoption of EU measures into the EEA Agreement has included significant derogations, such as for Iceland in relation to the energy performance of buildings and geothermal co-generation, and for Liechtenstein in relation to rules on renewable energy. Derogations and other amendments involve a more protracted process of approval on the EU side, since they are a matter for the Council and not just for the Commission.

There have been a number of ESA/EFTA Court proceedings in respect of alleged state aid of various kinds in the energy sector.

The EEA Agreement in action

The way in which some familiar pieces of EU legislation have been processed for the purposes of the EEA Agreement provides some interesting examples of how the EEA works in practice.

It can take a long time to adopt some measures:

How would the UK fit in to the EEA/EFTA energy sector?

If the UK were to become an EFTA/EEA state tomorrow, it would find itself, by virtue of its generally fairly scrupulous past compliance with its obligations as an EU member state, considerably ahead of its EFTA peers in implementing EEA law.

As in every other area of policy, legislating for Brexit at UK level involves, at least in theory, a large number of choices. Any domestic legislation that implements a Directive could in principle either be left as it is, amended or repealed. The government would also have to decide whether to legislate, if only on a transitional basis, to preserve (with or without amendment) the application of each EU Regulation that currently has effect in the UK without any implementing domestic legislation.

In some cases (such as the Regulations which impose the minimum import price for Chinese solar panels in the UK), allowing such Regulations to cease to have effect on Brexit would be an easy choice. In other cases (for example REMIT, or the various Regulations made under the Energy-using Products Directive that impose labeling requirements on electrical goods based on their energy efficiency), there could be a strong case for preserving their effect as a matter of domestic law even as they ceased to apply as a matter of EU law.

But for a government of ministers who have long harbored ambitions of doing more to “get rid of red tape,” Brexit may feel like too good an opportunity to pass up. In so many previous attempts to shrink the statute book, ministers have had to accept—however reluctantly in some cases—that measures which implemented EU law were untouchable. This time, there will be pressure to get rid of some of those. In each case where a straight repeal is contemplated, the consequences of having a regulatory vacuum in the relevant area should be carefully considered, and the views of relevant stakeholders taken into account. Business may need to be alert to what is proposed and ready to engage fully at short notice whenever this process takes place—which could either be in parallel with Brexit negotiations or after they are concluded. It would make sense for the default position at the start of the UK’s EU non-membership to be one in which the effect of pre-Brexit Directives and Regulations is preserved, at least for an initial transitional period, by a widely-drafted general saving provision.

However, if the government plans to join the EEA as an EFTA state, the task of sifting through decades of EU legislation on this “pick ‘n’ mix” basis should arguably only be a priority in relation to two classes of measures: (i) those that fall outside the scope of the EEA Agreement; and (ii) those that have yet to be adopted at EEA level, to the extent that there would be a clear UK advantage in disapplying them or modifying their effect on a temporary basis.

In the first category (measures outside EEA scope) it is not clear there would be many “quick wins.” One possible example is the suggestion made by Brexit campaigners during the referendum that leaving the EU



would enable the government to abolish VAT on domestic energy bills—a move that would help to offset the increases in electricity bills driven by levies on suppliers to pay for the cost of renewable electricity generation subsidies. In other areas highlighted above as falling outside the scope of the EEA Agreement, it is less clear what would be gained by an immediate move away from the existing EU-based law. In the second category (candidates for possible temporary disapplication), there may be more scope for opportunistic (de-)regulation, but it is not obvious what the overall strategy would be.

Another important question in this scenario, and one which we can only touch on here, is the impact of Brexit on the EU's Energy Union project. Some elements of the proposed Energy Union package may well fall outside the scope of the EEA Agreement. Other elements could conceivably result in a "Fourth Package" of internal electricity and gas market measures—parts of which the UK might wish to implement before the other EFTA states have implemented the Third Package, but in the negotiation of which, even if it is completed during the time of the UK's remaining EU membership, it is hard to see the UK playing a decisive role.

If the UK were to join the EEA as an EFTA state, it would remain subject to EU state aid rules, under which state aid which distorts competition is unlawful and liable to be repaid if it is not first cleared by the European Commission / ESA. Many of the UK's key current energy policies, such as the Capacity Market and Contracts for Difference (CfDs), involve an element of state aid. State aid clearance for them by the European Commission has been very carefully negotiated, and the need to seek clearance for any significant changes to them has been a constraint on recent policy development. The ESA has adopted guidelines on state aid for energy and environmental protection that are effectively identical to those of the Commission, and it is likely to take a similar view of UK energy policies involving state aid.

In the field of climate change, the UK would no longer be represented by the EU at future UNFCCC conferences. Like the other EFTA states, it would be required to submit its own nationally determined contribution (NDC) towards the achievement of the goals of the CoP21 Paris Agreement, rather than coming under the umbrella of the general EU-wide NDC. The mechanisms of the Climate Change Act 2008 should provide a sound basis for this.

In short, in the "EEA scenario," the energy sector is unlikely to see big changes from the UK side as a result of Brexit, but as there may be a sustained effort by ministers to make the most of even temporary flexibilities, the industry will need both to be alive to the detail of proposed changes and prepared to advise the government on how the inherent flexibilities described above can best be used in UK policy changes. It is also possible that the arrival of the UK would put some aspects of the way that the EEA operates under strain, both within EFTA itself and in its relations with the EU. One can imagine the UK sometimes being impatient

at the slowness of EEA adoption of some EU law and at other times wanting to push the boundaries of EFTA independence further than the EEA Agreement will easily tolerate. Inevitably, a recalcitrant UK would be a bigger problem than a recalcitrant Liechtenstein.

Nuclear options?

It is a fair bet that very few voters on 23 June 2016 were asking themselves whether a vote to “leave the EU” was meant to suggest to the government that it should cease to be a party to the Euratom Treaty establishing the European Atomic Energy Community. For what it is worth, in strict legal terms, Brexit should not necessarily imply leaving Euratom, since it, alone of the three original “European Communities” has not been terminated or submerged in the EU. (It also forms no part of the arrangements between the EU and EFTA states in the EEA Agreement.)

The UK government may feel that these subtleties are not to be relied on in implementing the “will of the people.” However, it is hard not to see leaving Euratom as a backward step for a country whose government has strong nuclear aspirations. For example, the ability to continue to participate in European nuclear research projects, including on nuclear fusion, is something that the government would presumably want to safeguard, but beyond the next few years, it would not be guaranteed outside Euratom. An alternative (if it was felt to be too politically uncomfortable for the UK to stay in Euratom) might be for the UK to suggest to the remaining Euratom states that they make use of Article 206 Euratom to conclude an association agreement with the UK (if that is politically acceptable to all parties)—although this could presumably have the disadvantage of the UK being obliged to follow rules and policies which it would not have input into on an equal footing.

Meanwhile, only time will tell whether EDF’s proposed Hinkley Point C nuclear power station will survive Brexit. At this stage it is hard to say that there is any legal reason for the project not to go ahead if the UK is no longer an EU member state, but Brexit could provide any of the parties involved with an excuse if they wanted to terminate the project for other reasons.

The Energy Community

Unlike in some other sectoral areas of law affected by Brexit, energy has the benefit of a ready-made multilateral precedent for the EU and non-EU states to enter into a “single market” agreement which does not (at least explicitly) involve free movement of persons. The Energy Community was formed in 2005 by a treaty between the European Community and a number of Balkan states. It now comprises the EU, Albania, Bosnia and Herzegovina, Kosovo, the former Yugoslav Republic of Macedonia, Moldova, Montenegro, Serbia and Ukraine. Georgia is in the process of joining; Armenia, Norway and Turkey are observers.

Some, but not all, of these countries are candidates for EU membership and/or have signed up to forms of EU association agreement that commit them to comply with core single market rules, but with only limited provision for the free movement of persons. The Energy Community Treaty and associated Legal Framework commit the Contracting (non-EU) Parties to implement a number of key EU law energy provisions, including the Third Package, security of gas and electricity supply rules, the Renewable Energy Directive, energy efficiency rules, the Oil Stocking Directive, competition and state aid rules and key air pollution and environmental impact assessment rules. Although supervision of the implementation of Contracting Parties’ obligations is by a Ministerial Council rather than an independent regulatory agency or court, there are sanctions for persistent and serious non-compliance (suspension of Treaty rights).

If energy was the UK’s only industry, and the UK government wanted to spare itself the pain of taking decisions on what to do with all current EU energy law applicable in the UK, the Energy Community might be a more attractive club to join than the EEA. But in practice, that option may not be available to a country with a mature, liberalized energy sector that has previously accepted free movement of persons, and other industries may rank higher in terms of political priority in negotiating Brexit.

Freedom and sovereignty

Those who campaigned for Brexit had relatively little to say specifically about energy matters. But their general pitch to voters was that Brexit would give businesses operating in the UK freedom from unduly burdensome regulation and that it would restore to UK voters, or at least the UK government, power to determine the UK's economic and industrial policies.

Given the constraints that EEA membership would impose on the UK government's freedom of action in many areas of energy policy, it is necessary to consider what use it could make of the additional freedom or "sovereignty" it could acquire in energy matters if it chose, or was obliged, to forego the ready-made packages of the EEA Agreement and Energy Community for a non-EU law-based model.

Here are some changes that it would probably only be possible to make in a non-EEA UK. We are not here speculating on whether the government would be inclined or likely to follow any of these approaches: they are discussed only to illustrate the extent of the potential flexibility that may be available to change current policy.

- If it was prepared to take the associated reputational damage and loss of investor confidence, the government could abandon any further attempt to stimulate private sector investment in new renewable electricity generating capacity, or the uptake of other forms of renewable energy, on the basis that it would no longer have an EU-imposed 2020 target to meet and that it would be better for the UK to wait until renewable technologies have become cheaper by virtue of wider deployment elsewhere in the world. It could impose a moratorium on all new consents for such projects and suspend or abolish all remaining subsidies for new projects.
- If the government was content to carry on subsidizing renewable power to some extent, it could—free from EU state aid rules—adopt a less even-handed approach to the allocation of CfDs to new projects. This may make it easier for the government to follow what may in any event be its natural inclination to make subsidies available only for offshore wind farms and a few much less established technologies.





- On the other hand, the government could take the view that the low carbon option that really needs subsidizing is heat networks, and it could divert all funds notionally earmarked for renewable electricity generation into the provision of heat network infrastructure instead, subsidizing it to a degree that would not be given state aid clearance in order to give a real boost to a market that has been slow to develop for a long time.
- A different approach would be to focus subsidy entirely on energy storage, with a view to enabling as much variable generating capacity as possible to become, in effect, despatchable. This is arguably the next frontier for wind and solar power, and by boosting demand for storage it could help to reduce its costs in the same way as subsidies have helped do for solar panels in particular. That much could possibly be achieved within the EU rules, but it might also help, in such a scenario, to make storage a regulated utility function, and to allow National Grid to invest in storage capacity in a way that EU unbundling rules at present may either not allow, or make it unduly difficult for it to do (if storage is classed as “generation,” which is not unlikely for non-battery-based technologies).
- The government has been disappointed, from the energy security point of view, at the failure of the Capacity Market auction system to produce a clearing price that can serve as the basis for financing large-scale combined cycle gas turbine (CCGT) power stations. However, in its proposals to change the approach to be taken in the next two auctions, it did not feel able to go as far as to suggest an auction just for CCGT capacity, presumably because this would be incompatible with the existing EU state aid clearance for the Capacity Market (which is subject to legal challenge). With no state aid rules to follow, the government could choose to hold a CCGT-only auction. Other more radical variants on the current rules could include separate auctions for CHP plant (or handicaps in the auction process for non-CHP generating units).
- Unconstrained by state aid rules, the government could allow and encourage National Grid to develop an offshore pipeline system to distribute carbon dioxide to potential permanent storage sites under the North Sea, as part of its regulated business, so as to kick-start a carbon capture and storage industry.

- The government could escape the flawed EU ETS with its apparently inevitably too-low carbon price and join an emissions trading scheme that delivers a higher carbon price. There is an increasing number to choose from internationally, from California to China.
- If the government were to take the view that establishing some form of state-backed entity was the best way to make the decommissioning regime in the North Sea oil and gas industry work effectively, or to ensure that there was a “buyer of last resort” for strategically vital assets whose current owners lack the incentive to carry on running and maintaining them, this is something that would be easier outside the EU/EEA state aid rules.

Depending on which horn of the energy / climate change trilemma you think is most inadequately served by current UK government policy, you may find any of the above, or other steps that an EU/EEA UK could not take, very attractive. What we would emphasize here, though, is that removing the constraints of EU/EEA law could lead to significantly more volatile energy policy-making in the UK, and greater politicization of energy regulation. If the UK were to go down the out-of-EU-and-EEA route, we would suggest that the government, however radical any departures it decides to take from current energy policies may be, should take steps to ensure that they develop within a stable overall framework, in which business can plan sensibly for the long term.

Non-EU/EEA law constraints imposed by international law

A non-EU/EEA UK would not be constrained by EU/EEA law, but it would not be free of other international law constraints that have a bearing on regulation of the energy sector. There is not enough space to do justice to this subject here, but note the following examples:

- If the UK were to negotiate and become party to a free trade agreement with the EU/EEA other than the EEA Agreement, it is likely that (as other such agreements have), it would include requirements to enforce competition law and a prohibition on state aid. Accordingly, all the non-EU/EEA UK energy policy options referred to above which would be contrary to EU state aid rules could be the subject of disputes under a UK-EU/EEA free trade agreement if they were implemented. If, on the other hand, the UK were not to negotiate such a bespoke free trade agreement and were to rely instead on WTO rules, such measures may still fall foul of the WTO rules against subsidies.
- The decommissioning of oil and gas infrastructure is regulated by the Convention for the Protection of the Marine Environment of the North-East Atlantic (more familiarly known as the OSPAR Convention), one of a number of international conventions relevant to the environmental aspects of the energy industry.

- The Energy Charter Treaty and bilateral investment treaties to which the UK is a party may offer protection for those who invest in the UK energy sector, and cause the government to refrain from taking action that would create claims against it under them.

More generally, if the UK were to follow this path, it is possible that any radical departures in energy policy could affect the terms of trade deals that could be negotiated with other states, and any tariffs imposed by them.

Closer to home

Sacrificing accuracy in the interests of an element of simplicity, we have tended to refer throughout this article to “the UK.” This overlooks:

- The possibility that Scotland will ultimately leave the UK rather than the EU
- The fact that the devolved government in Northern Ireland has (nominally) complete and (practically) very extensive powers to make its own rules on energy matters
- The existence of a Single Energy Market across the island of Ireland and a single set of electricity trading arrangements (BETTA) across England, Wales and Scotland
- The fact that post-Brexit the Republic of Ireland will be the only EU member state whose connection to the EU single market in gas runs entirely through non-EU territory

It is beyond our scope here even to outline the intra-UK energy Brexit issues, but they are substantial.

A further area which there is no space to consider here is the legal impact of Brexit at a contractual level. Suffice it to say that businesses would do well to review those parts of their key existing contracts (and any important contracts under negotiation) that contain provisions where rights and obligations could be triggered by the

occurrence of Brexit: obvious examples include provisions on force majeure, change in law, material adverse change, hardship and currency-related matters.

Conclusions

EU and UK energy regulation have become so intertwined over the years, and the energy industry is so international in a variety of ways, that it is inevitable that Brexit will affect all parts of the UK energy sector to some degree. And those parts of it that are arguably not so directly affected are themselves subject to other massive regulatory interventions at present in any event (notably the energy supply markets in the wake of the Competition and Markets Authority’s investigation).

What will change in the energy sector as a result of the UK electorate voting to leave the EU? At this stage, it is tempting to say simply: “If we stay in the EEA, nothing will really change. If we try to go it alone, who knows? The only certainty is years of uncertainty.” We hope that the preliminary observations in this article have shown that the position is rather more complex and dynamic, and the range of issues to be addressed and possible outcomes is wider than is sometimes supposed.

For now, we would suggest that it is important to follow the details closely, because unless you believe that the result of the referendum will somehow not be implemented, there is no more justification for complacency about the ultimate consequences of Brexit for the energy sector than—if one supported remaining in the EU—there was about the result of the referendum itself.



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