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Global Energy Summit London 2016: Analysis

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Inside

Introduction

Dentons' third annual Global Energy Summit took place in our London office on 17 May 2016. Along with about 200 clients, we welcomed some 50 colleagues from other jurisdictions, including representatives from our newly integrated offices in China, Mexico, Colombia and Singapore – all now part of the global Energy practice of the world's largest law firm.

The keynote presentations and panel discussions were organised around two principal themes: the implications of the UN agreement on climate change reached at Paris on 12 December 2015 and the prolonged period of lower oil prices. We heard from those who helped in various ways to lay the ground for the Paris Agreement and how it came about, and why the huge amount of work that now needs to be done to implement it should be regarded as an opportunity, rather than a threat to the global economy in general and the energy sector in particular. We heard from former ambassadors and other experts about developments in the Middle East which are central to the evolving story of oil prices, and from a range of leading practitioners about how to manage the downside risks and look for upside opportunities in the current challenging market conditions. Distinguished panels on the global renewables industry and China's energy sector examined concrete ways in which current trends point towards ways of making the low carbon aspirations of the Paris Agreement a reality.

In the pages that follow, we have summarised the key themes that emerged from each session and added some of our own reflections on them. If you want to explore any of the issues in more detail, you will find all the slides used by speakers at the Summit here.

The Paris Agreement is an opportunity, not a threat, for the global economy

The Paris Agreement should be a spur to economic growth

The Summit's opening plenary session was introduced by Senator Doug Black QC, Vice Chairman, Dentons Canada. Professor Sir David King, the UK Foreign Secretary's Special Representative for Climate Change, gave the keynote address, on the subject of the consequences for industry of the Paris Agreement. Sir David, who has been at the heart of UK and international climate policy debates for more than 10 years, outlined the background to the "CoP21" Paris Agreement and explained why he believes that it provides the best opportunity for global economic growth since the Industrial Revolution.

The need for global action on climate change

The extraction and burning of fossil fuels releases CO2 and other greenhouse gases (GHGs) into the atmosphere. This is driving an increase in global average temperatures. The effect is exacerbated by changes in land use that reduce forestation, which both produces additional GHG emissions and removes natural "carbon sinks" that would otherwise help to absorb atmospheric CO2. The impacts of rising temperatures can already be seen in the form of more frequent extreme weather, melting ice sheets, rising sea levels and ocean acidification (see NASA's climate change website).

If we carry on with "business as usual" in the energy sector, the adverse social and economic impacts of man-made climate change could be profound and widespread well before the end of the century. At present, it is still often possible to manage, for example, the increased risks of flooding, but the risks cannot be managed forever. On current trends, current gradual sea level rises will eventually result in the failure of staple rice crops across parts of Asia as river deltas become salinated. Sooner or later, governments would have to switch from managing risks to instigating an ordered retreat from low-lying areas as land where millions of people now live simply disappears.

The Paris Agreement and what it means

Paris, delegates from 195 countries agreed a text that commits them to: keeping the increase in global average temperature well below 2°C; pursuing efforts to limit it to 1.5°C; and ensuring that GHG emissions peak as soon as possible, reaching net zero emissions in the second half of the century. To have a 50% 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 1.5°C target, we would need to hit net zero emissions by 2035.

Achieving these goals will require significant changes in government policies, individual and corporate behaviours and the business models of much of the global energy sector. In their Intended Nationally Determined Contributions (INDCs), the countries represented at Paris put forward proposals for the action that they would take to help to meet the Paris goals. By one informed estimate, even if all the INDCs were implemented in full, cumulative GHG emissions could reach the level at which a 2°C increase in average temperatures became inevitable as soon as 2030. Many of the countries concerned do not yet even have a clear path for implementing these INDCs, let alone anything more ambitious. Meanwhile, the Governor of the Bank of England, noting calculations that no more than a fifth to a third of existing proven hydrocarbon reserves can be burnt without leading to greater than 2°C temperature increases, has highlighted the potential for stranded assets in the fossil fuel sector. In his view this could represent a threat to global financial stability.

So although the unanimity achieved in Paris was a remarkable achievement, on the face of it the conclusion of CoP21 leaves two big questions unanswered. First, what reasons are there to be optimistic that the goals set in Paris will be achieved? Second, given how central existing patterns of extraction and/or use of fossil fuels are to the economies of so many developed and developing nations, how can we achieve the CoP21 goals without damaging prosperity?

Why the Paris Agreement was possible, and why it will work

The best starting point for discussing these statements is with the circumstances that made the Paris Agreement itself possible. First, at a global level.

The Paris Agreement sits within the legal framework established by the UN Framework Convention on Climate Change (UNFCCC) that was adopted at the Rio Earth Summit in 1992. At a time when there was much less quantitative evidence about the impact of GHG emissions, the UNFCCC set the fundamental objective of stabilising them at a level that would prevent dangerous man-made climate change, and doing so soon enough "to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened, and to enable economic development to proceed in a sustainable manner". It also set out the principle of "common but differentiated responsibilities", recognising the greater efforts required from developed countries.

The first major attempt to build on the UNFCCC was the Kyoto Protocol in 1997. Although this has had a number of important

positive effects, its focus on the introduction of targets for reducing or constraining the growth of GHG emissions that would be binding as a matter of international law was a serious weakness – delaying its entry into force and causing it not to be ratified by the US.

However, the period around the turn of the century also saw the development of the first major programmes of feed-in tariffs for generating energy from renewable sources. Technologies such as wind and solar PV had existed for some years, but it was not until the availability of subsidies stimulated for the first time a mass market for them that their prices reduced to a level where they were a realistic alternative to conventional power. The market has responded so well to the stimulus of feed-in tariffs that 15 years later, the price of solar panels has fallen massively.

To reduce GHG emissions far enough, huge changes will be needed across the energy sector

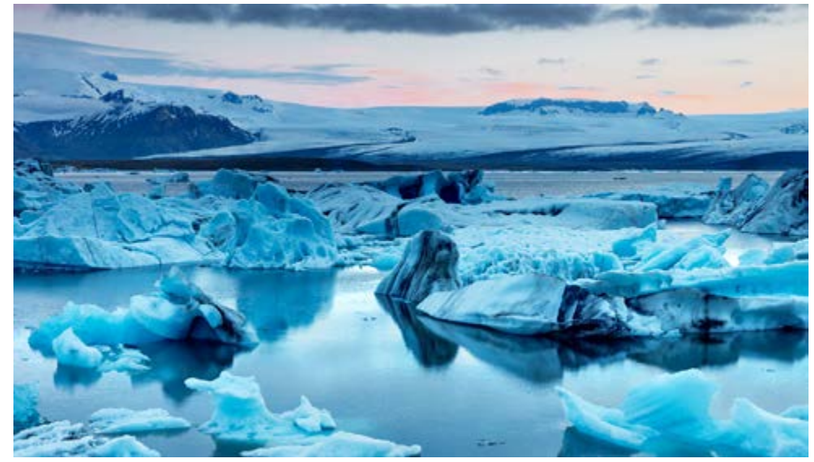
The growth and affordability of renewables is important because it shows countries seeking to reduce GHG emissions now that there is a technically and financially credible way of doing so, at least as regards their power sectors. We are now at a point where in many parts of the developing world onshore wind or solar are the cheapest forms of power generation without subsidy (and in other cases they would be, but for fossil fuel subsidies). As a result, global investment in new renewable generating capacity is outstripping investment in conventional power projects.

Secondly, two UK Government innovations have made it easier to address the UNFCCC objectives.

In 2008, Parliament passed the Climate Change Act. As well as setting a legally binding target of reducing UK GHG emissions by 80% by 2050, this obliges the Government to adopt binding interim targets to ensure that it is following a credible decarbonisation trajectory. An independent body of experts, the Committee on Climate Change, reporting to Parliament rather than the Government, scrutinises these "carbon budgets". Because they cover four-year periods and are set 12 years ahead, there is a stable framework for policy-making that is appreciated by business. Budgets are already set up to 2027, with a view to achieving a 50% reduction in GHG emissions by 2025.

The ideas of the Climate Change Act have been copied by a number of other legislatures, from Mexico to Taiwan. In particular, the setting of the 80% emissions reduction target by 2050 was also a powerful signal in climate change diplomacy. The UK was in effect saying to other governments: "We are doing this – what are you going to do?". It became apparent that many countries were keen to be seen to be "greener" than each other. For example, the UK's commitment directly prompted Brazil to set itself the very significant objective of ending deforestation within its territory by 2025.

A couple of years later, the Department of Energy and Climate Change (DECC) created the "2050 calculator" software. This enables anyone to devise their own pathways to achieving the 80% GHG emissions reduction target by 2050 in the UK by choosing from a range of approaches (ranging from new nuclear build to improved energy efficiency). Using the format of an interactive game, policy-makers and citizens can see instantly



and in concrete terms what effect particular combinations of action have on emissions, and just how much change is needed on both the supply and demand sides of the energy sector to achieve deep reductions in GHG emissions. The program has now been adapted for use in about 20 other countries, including China, India, Indonesia and South Africa.

The Climate Change Act framework and the 2050 calculator make any action taken by government that has a bearing on climate change much more transparent and accountable. They also raise the profile of climate change policy and encourage governments to set challenging goals. UK leadership in this area has been assisted by a network of 100 climate attachés in embassies worldwide, working with host governments. This includes some 20 UK officials working in Beijing who helped to set up China's GHG emissions trading scheme.

For many countries, the Paris Agreement is only the start of the process of addressing GHG emissions seriously. But even if the pledges embodied in the combined INDCs currently fall short of what is needed, they represent significant, credible and – above all – voluntary commitments. They were not the

product of external compulsion, beyond what might be called peer pressure. They were driven by a shared understanding of the problem and a desire to make a contribution to solving it. Rather than negotiating their way to a position where there was either no agreement or agreement only on a "lowest common denominator" for action, countries are competing to outdo each other.

It is true that there are potential political obstacles ahead in implementing the Paris Agreement. This is perhaps nowhere more true than in the US, where hostility to any form of concerted action on climate change runs deep across a large part of the political spectrum. However, the practical effects of a Republican administration may in practice be limited. Withdrawing from the Paris Agreement is a four-year process, and even if the Clean Power Plan falls victim to Supreme Court litigation, the Clean Air Act still requires GHG regulations to be made in any event.

Ultimately, then, the answer to the first big question about the Paris Agreement is this. Nobody can be sure that the goals of CoP21 will be achieved but, in contrast to the Kyoto Protocol, this time the UNFCCC process seems to have found a way that motivates governments – even in the face of lower fossil fuel prices – to "do the right thing". However, it is essential to continue to make progress. As soon as possible the Agreement needs to be ratified, turning INDCs into NDCs, and the process of reviewing the NDCs – and making them more ambitious where appropriate – needs to begin. The inclusion of a review mechanism in the Paris Agreement was a negotiating "red line" for the UK.

A world of opportunity

What about the economic implications of following the Paris agenda, though? Will the transition to an economy of net zero GHG emissions be painful? The answer is no, as long as the private sector makes the most of the huge opportunities which that transition offers. Of course, there will be risks to avoid and challenges to meet along the way, but overall there are strong grounds for optimism.

Take renewable energy, for example. The scale of growth of renewables, particularly in countries such as China and India, is extremely encouraging. Moreover, it is no longer just being driven by government targets and subsidies. Many companies are seeking to increase the proportion of their energy that comes from renewable sources, even up to 100%. We are moving from a world where renewables were considered risky to one in which the higher-risk strategy is not to invest in renewable energy and sustainability. The dollar value of investment in new renewable electricity generating capacity increased by 30% from 2014 to 2015, even though solar PV panels were cheaper (meaning that more capacity could be installed for a lower price); hydrocarbon prices continued to fall, and the dollar was strong (reducing the value of non-dollar denominated investment). More money is now being invested in new renewable power capacity than in conventional power projects. The more capacity is commissioned, the cheaper renewable technology becomes, the greater its ability to out-compete conventional power sources, and the more it is deployed, the more GHG emissions fall.

Renewables can contribute to economic growth in many ways. In the UK, the clean energy sector is already twice the size of the car industry and the same size as the food and drinks industry. In Africa, there are 620 million people without access to electricity. Off-grid renewables, often on a very small scale, can give them power at a fraction of the cost of diesel generators or transporting power from a centralised gas or coal-fired plant far away from the scattered sources of demand. Once a community has electricity, its potential for every other kind of economic growth is significantly enhanced.

Renewable energy is not the only technology where we see this kind of positive feedback loop. Something similar is happening with a number of energy-saving technologies, such as LED lighting.

Investment in new coal-fired power plants, although still too high, is falling, and significant numbers of proposed new projects are being abandoned. A number of governments are taking steps to accelerate the closure of existing coal-fired plants. In a number of markets, gas-fired plants are being substituted for coal-fired plants, reducing GHG emissions associated with the electricity produced by 50%. However, it is important to remember that unless and until it becomes cost-effective to combine gas-fired plants with carbon capture and storage facilities, gas should only be regarded a part of the transition to a net zero emissions world – not as a major long-term source of clean power in such a world. It is also crucial that the upstream oil and gas industry ceases flaring, and gets to grips with fugitive emissions of methane (a potent GHG), as soon as possible.

The proliferation of GHG emissions trading schemes is another positive sign. Although the EU Emissions Trading Scheme has so far failed to set a carbon price that really drives decarbonisation, others have learnt from its flaws and may be more successful. The rapid development of a scheme for the whole of China, following initial trials in a number of provinces there, is an encouraging application of market mechanisms, and the EU and Chinese markets could even be linked.

A final aspect of reducing GHG emissions is the increasing resolve of the international community to halt deforestation. Loss of forest results in GHG emissions. Re-forestation provides carbon sinks that offset emissions from fossil fuel use. The New York Declaration on Forests (2014) calls for a halt to deforestation by 2030 and the reforesting of an area the size of India, which would absorb GHG emissions equivalent to the annual emissions of the US today. Amongst other benefits, reforestation is one of the cheapest ways of reducing emissions (about €5 per tonne of CO2 saved).

Global investment in new renewable generating capacity is outstripping investment in conventional power projects

But the real engine of low carbon growth will be the deployment of completely new products and services, such as smart grids, hydrogen and energy storage. Amongst other things, these will enable renewables to overcome the intermittency of power sources like wind and sunshine. And it is clear that very significant amounts of public and private funds will be made available to fund research, development and commercialisation of new low carbon technologies.

At CoP21, the initiative previously known as "Project Apollo" became "Mission Innovation". It is now supported by Australia, Brazil, Canada, Chile, China, Denmark, France, Germany, India, Indonesia, Italy, Japan, Mexico, Norway, Saudi Arabia, South Korea, Sweden, the UAE, the UK, and the US, as well as the EU – which between them account for more than 80% of global public investment in clean energy research and development ($15 billion per year) and have committed to double their annual spending in this area by 2021. At the same time, Bill Gates announced the formation of the "Breakthrough Energy Coalition": a group of wealthy investors willing to dedicate similar sums of "truly patient flexible risk capital" to bridging the "nearly impassable Valley of Death between promising concept and viable product, which neither government funding nor conventional private investment can bridge", and motivated "partly by the possibility of making big returns over the longterm, but also by the criticality of an energy transition".

Of course, for those invested in fossil fuels and infrastructure predicated on their continuing to play a significant role in the global energy economy, there are some serious questions. There is a risk of stranded assets if new investments are not properly evaluated in the context of a transition to net zero emissions within 30 to 40 years. But with the funds that are being made available to develop new technologies and their own resources and expertise, oil and gas companies should be well placed to become profitable clean energy companies of the future.

Man-made climate change so far has been a text-book case of "market failure", but the conditions are now in place for refocused energy markets to save the planet. And with a little imagination, reaching net zero emissions should not cost us money: it should be good for the global economy.

Iran – open for business?

A panel of distinguished speakers offered their reflections on the implications of recent events in Iran and the Middle East: Sir Richard Dalton, former UK Ambassador to Libya and Iran and Associate Fellow of the Middle East and North Africa Programme at Chatham House, Michael Corbin, former US Ambassador to the UAE, and Prof. Dr. Malik Dahlan of Queen Mary University of London. Neil Cuthbert, Senior Partner of Dentons' Middle East offices, chaired the session.

For almost a year, there have been growing expectations both in Iran and its potential trading partners worldwide about the economic impact of the lifting of sanctions under the so-called Joint Comprehensive Plan of Action (JCPOA). This was agreed in July 2015, formally adopted in October 2015 and implemented on 16 January 2016, when the International Atomic Energy Agency verified that Iran had implemented key nuclear-related measures specified in the JCPOA.

However, although implementation of the JCPOA triggered the lifting of some of the sanctions imposed on Iran by the international community, some significant obstacles remain for Iran in re-integrating itself into the global economy and for companies from the rest of the world (particularly the US and EU) who are keen to do business with Iranian counterparties. US so-called "primary" sanctions, which generally prohibit US businesses and individuals from dealing with Iran, remain in place, as do EU sanctions related to Iran's human rights violations and support for terrorism. It is inevitable that there will be some tension between the Iranian expectations of the benefits of signing up to the JCPOA, and the extent of its impact on the Iranian economy to date, particularly given the current level of oil prices.

How strong are the prospects for growth in the Iranian economy in the short term? How much of a role can Western companies play? And what factors beyond sanctions might cloud the picture?

The growth story

Iran has the second-largest economy in North Africa and the Middle East, and it is expected to grow at approximately 4% per year. It has the second-largest population in the region, about two-thirds of whom are under 30. Each year, its universities produce over 200,000 graduates in engineering and sciences – almost as many as the US. It has the world's second-largest gas and fourth-largest oil reserves, but – partly because it has had to adapt to export restrictions during the period of sanctions – its economy is not nearly as heavily dependent on oil and gas exports as those of Saudi Arabia and some other fossil-fuel rich states. It is estimated to have a pipeline of infrastructure projects worth about $200 billion, much of it in the energy and transport sectors.

Iran's leaders know that it needs to be integrated into the global economy. In the words of President Rouhani: "An economy that does not have the power to compete on an international stage cannot solve domestic problems". For its part, therefore, Iran will not renege on the nuclear deal embodied in the JCPOA. The Iranian people want evolution not revolution. The results of the recent elections show that the system has some capacity to accommodate this so, politically, Iran will remain stable in the near to medium term. The Supreme Leader, Ayatollah Khamanei, does not seem to resist economic change unless he believes it would lead to a slackening of Islamic values or Iranian culture. The law-making function in Iran is good and will support reform and economic transformation.

There is support from outside Iran too. The Obama administration is working behind the scenes to reassure the Iranians that the nuclear deal will remain. It is also talking with Gulf Arab allies to reassure them that they will not be cut out by any deals with the Iranians, and looking to make progress in Syria, Lebanon and other opportunities presented by a working relationship with Iran. The Gulf states are taking advantage, or exploring the new possibilities, of trade with the Iranians.

Specifically in the field of energy, there are a number of positive developments. The Iranian Government has given careful thought to making the Iranian oil and gas sector more attractive to international participants with its "Principles of the New Contract Model". Although a number of issues remain to be addressed, it appears that some of the most criticised features of the historic regime, such as the cap on cost recovery, are to be removed and there is a welcome focus on collaboration in joint ventures – partly to facilitate technology transfer – and more sophisticated contractor remuneration mechanisms, with increased upside potential (click here for a more detailed briefing). Total, BP, Shell and others such as ONGC have all been reported as pursuing new activity in Iran. The Government is also making significant efforts to ensure that the country's very significant renewable energy resources are exploited, and many European developers are being drawn by the combination of attractive tariffs, rising demand for power and a relatively mature market structure. It is also encouraging that Iran has begun to reform its fossil fuel subsidies regime.

Both China and Russia have agreed to build new nuclear plants in Iran. For China, which accounts for 21% of Iran's international trade, Iran is an important link in its "One Belt One Road" initiative that aims to create and expand trading routes, links and business opportunities between China and more than 60 countries in Asia, Europe, the Middle East and Africa. There is also clearly a potential role for Chinese entities as financiers in Iran. For Russia, although Iran is in one sense a competitor in some of its oil and gas export markets, there are also export opportunities for its manufacturing sector as well as the potential for Gazprom, Rosneft and Lukoil to re-engage in Iranian oil and gas projects, having withdrawn in order to comply with sanctions.

Structural issues

There some significant issues that Iran needs to address across its economy if it is to achieve as much as it hopes from the process that began with the JCPOA.

Although European banks are beginning to re-engage with Iran, the international Financial Action Task Force remains "exceptionally concerned about Iran's failure to address the risk of terrorist financing and the serious threat this poses to the integrity of the international financial system", although there are some signs of progress in this area, as noted by an IMF report of December 2015 which highlighted this and a number of other areas where comprehensive reform was needed. This contributes to a relatively hard line being taken by the US administration against opening up any potential relaxation of or ways around its primary sanctions, such as permitting so-called u-turn transactions. There is no indication so far that the likely successors to Barack Obama would take a more permissive approach on this (although some in Iran see Donald Trump as likely to be easier to deal with than Hillary Clinton). Elsewhere, Dubai banks, for example, are not dealing with Iran.

There are concerns around the openness of Iran to foreign investment, ranging from questions about the Tehran Stock Exchange and the need for exchange rate reform to being prepared to tolerate competition in "sensitive" industries, including those currently dominated by entities owned by Islamic institutions or the Revolutionary Guard, which benefit from special tax status and other advantages. Labour market reforms and (genuine) privatisation in many sectors would also be desirable. For investors in large Iranian infrastructure projects, KYC and thorough due diligence must be the starting point, but guarantees from the Government or Central Bank are likely to be essential for some time.

The struggle for regional influence between Iran and Saudi Arabia is also a factor. There is wider political and religious dimension to this, seen in Iran's challenges to the Saudis' management of the haj and in what it may or may not be appropriate to characterise as "proxy wars" between the two countries in Yemen (where the UAE is more prominent than the Saudis) and Syria/Lebanon (where the Saudis have refused to support some groups opposed to Iran-backed Hezbollah). But economics is also important, as Saudi Arabia continues to maintain market share at the expense of the global oil price and to pursue its ambitious plans for a $2 trillion sovereign wealth fund by 2030, a partial IPO of Aramco, a major expansion of its defence industry and a diversification of its economy that would see the private sector's share increase from 40 to 65%. At the time of writing, neither Saudi Arabia nor Iran seems willing to agree to cut production. While Moody's may have downgraded Saudi Arabia from A1 to Aa3 for some purposes, unless there is further political commitment to finance Iran, it may be quite some time before Iran has a Moody's rating at all.

Issues for international energy lawyers: tax, insolvency and disputes

For lawyers attending the Summit, a panel of Dentons partners discussed legal issues of current concern to energy companies. Andrew Thornton and Sandra Hazan spoke about ground-breaking international tax reforms. Rachel Anthony and Liz Tout approached the impact of current turbulent conditions in the oil and gas market from the perspectives of dealing with potential counterparty insolvency situations and navigating disputes more generally. Michelle Bradfield chaired the session.

Beware BEPS

BEPS refers to an OECD/G20 action plan focused on "base erosion and profit shifting", technical terms for means by which businesses artificially reduce their tax liabilities by moving them from higher tax to lower tax jurisdictions. The aim is to promote transparency and ensure that profits are taxed where the economic activities from which they arise are carried out and value is created. The Action Plan involves a combination of strengthening existing laws, introducing new tax rules, sharing tax information between jurisdictions and enabling businesses to plan investment decisions with certainty.

Implementing BEPS will require amendments to domestic legislation and international treaties. A number of the key areas where action will be required are listed below.

Action 2 is concerned with hybrid mismatch arrangements. These can arise in transactions where there is a tax deduction for the payor in the jurisdiction where it is taxed, but no corresponding increase in taxable profits, and therefore tax for the payee to pay where it is taxed. They also arise where both the payor and payee are entitled to make tax deductions in different jurisdictions for the same activity. Examples include some financing lease transactions, and situations where a payment is treated as debt in one jurisdiction and as debt in another.

Action 4 aims to limit the ability of multinational businesses to artificially increase the level of debt in a group entity that pays

tax in a high tax jurisdiction via intra-group financing so as to maximise the deductions it is permitted to make for interest payments and reduce its overall tax liability. Among the measures to be applied for this purpose is a "fixed ratio" that would limit net interest deductions claimed by an entity (to between 10% and 30% of applicable EBITDA). This is expected to be detrimental to small, highly leveraged companies.

Action 5 applies to regimes that seek to attract foreign investors without requiring any economic substance. Preferential IP regimes are a particular target. This includes the "patent box" regime in the UK (one of 16 jurisdictions that are not compliant with Action 5 requirements). BEPS requires a direct nexus between income receiving benefits and the expenditure contributing to that income – as there should generally be in an oil and gas Production Sharing Contract (for example, where any tax allowances are likely to reflect high capital spend in the relevant jurisdiction).

Action 6 seeks to prevent artificial "treaty shopping" structures that enable companies to benefit from favourable treatment under tax treaties (e.g. avoidance of withholding tax) in circumstances where such benefits were not intended to be conferred – for example, by interposing between the two real counterparties to a transaction a third company (with which each then contracts separately), purely because that third company is located within a jurisdiction that benefits from favourable tax treatment in relation to one or both of the jurisdictions in which the real counterparties are located.

Another way in which tax treaty provisions are sometimes exploited is by businesses adopting strategies that enable them to avoid having a "Permanent Establishment" in a particular jurisdiction as that concept is commonly defined. BEPS Action 7 calls for a review of such definitions.

Whilst BEPS may not fundamentally change the way that many corporate groups operate, it introduces a significant additional compliance burden

Actions 8 to 10 are all concerned with transfer pricing: the prices agreed between related companies. These should follow arm's-length principles, and transfer pricing should reflect value creation rather than being manipulated so as to shift liabilities from high to low tax jurisdictions. Valuing intangibles in this context can be challenging. Legal ownership alone does not necessarily generate a right to all of the return generated from exploiting an intangible asset; however, a company that controls economically significant risks is entitled to an appropriate remuneration.

Whilst BEPS may not fundamentally change the way that many corporate groups operate, it introduces a significant additional compliance burden and no multinational business can ignore it. (For further details, see the slides [INSERT HYPERLINK – WILL BE CREATED TOMORROW] used in this session.)

The Twilight Zone – and beyond

Shortly before the Summit, it was reported that 69 oil and gas companies and 61 oilfield service companies had filed for bankruptcy in North America since the start of 2015. The current difficult trading conditions in the oil and gas market make it likely that companies will find themselves with counterparties which are either already the subject of some form of insolvency proceedings or which are in the "twilight zone" where formal proceedings have not yet been brought, but they may well already be insolvent. In these circumstances, in addition to the purely commercial risks of dealing with such a counterparty, all dealings with the (potentially) insolvent company should be considered in the light of how they could subsequently be challenged in insolvency proceedings.

Spotting the warning signs is notoriously difficult: it is important to have as much information as possible about your counterparty's status – using both publicly available sources and any contractual entitlements to information you have. Unexpected changes in personnel or behaviour can be a warning sign. It is obviously important also to check whether proceedings have been initiated, since these will often have the effect of preventing creditors from taking action against the insolvent company.

In this context, bear in mind that the jurisdictions you need to watch for these purposes may not be the ones you expect or where you are dealing with the company concerned. For example, some EU companies are obliged to file in their "centre of main interests" (note that a large group may have several of these). On the other hand, companies with a sufficient connection with the US (a relatively low threshold) will often find it attractive to file under Chapter 11 or 15 of the US Bankruptcy Code. Abengoa, for example, went through a Spanish pre-insolvency procedure before filing for Chapter 15 recognition in the US. Amongst other reasons to be aware of the different legal regimes that may be involved is the difference in treatment of directors and their ability to continue trading. The law of the place of incorporation will set the rules in this regard.

Where there is a risk of insolvency, you may face, at least in theory, a strategic choice as to whether or not to exercise any termination rights you have against your counterparty. However, in practice, it may be impossible to replace a key supplier or JV partner at short notice.

In many cases, there will be a "rescue plan" for your counterparty's business. You need to understand the implications of the rescue plan and what alternative there is if it does not succeed. Note that sometimes a rescue may be preferable to insolvency proceedings in which insolvency practitioners take control and drive a harder bargain – and significant amounts of the company's assets may be eaten up in paying their fees.

If the rescue plan takes the form of an accelerated M&A transaction, will you be able to work with proposed buyer? What say do you have in the transaction? Is there the potential for you to buy out your insolvent JV partner's share? What risk is there that the transaction could be regarded as being at an undervalue, given relevant insolvency rules in the jurisdictions where proceedings may be initiated?

If what is proposed is a financial restructuring, an English scheme of arrangement is a popular choice. In the case of an operational restructuring, this may require your financial support. It is important to think about what you might get in exchange for such support. For example, if making a loan, consider what security you could ask for (and document carefully why the support was of commercial benefit to the company). In some cases, creditors may be able to ask for a change of management – for example, the appointment of a Chief Restructuring Officer – as was insisted upon in SunEdison. Whatever Plan A is, your counterparty should also be working on Plan B, contingency planning to get maximum benefit for creditors by a controlled formal insolvency process if there has to be one. You would be wise also to invest in preparing your own response to such an eventuality.

Swords and shields: disputes in a low oil price environment

Oil and gas prices change over time, but significant amounts of oil and gas are supplied today under long-term contracts which were drafted at times when market conditions looked very different. This is the reason behind many disputes. Overall, the proactive use of dispute resolution mechanisms in the current climate of low oil prices can be divided into two main categories: cases where businesses are seeking to protect existing revenues and those where they are seeking to reduce their costs.

At present, buyers with a limited pass through of gas price in their pricing formula are suffering, as their contract prices has not decreased by as much as the open market price. Difficulties with payment (even if caused by movements in global commodity prices which are beyond the control of either party) do not generally constitute force majeure or amount to a reason to terminate a contract. So in the first instance, a distressed party may turn to price review clauses and/or hardship clauses, if they have been included in the contract. However, in a volatile market these can work in unintended ways.

Hardship clauses tend to be quite vague and may not be enforceable at all in common law jurisdictions such as England (being analysed as no more than "agreements to agree"), although they are enforceable in many civil law jurisdictions. However, even here they need to be sufficiently clear to allow arbitrators to determine whether a party is in fact suffering hardship.

Similar issues can arise with price review clauses, although these tend to have a more definite structure. Contracts need to be kept under careful review in order to determine whether and when the trigger for a review has been reached. It is important not to serve a review notice prematurely, as any back-tracking will make

What alternative is there if the rescue plan does not succeed?

an arbitrator wary. If prices change during the course of a review, even though as a matter of law it is irrelevant to the review (since arbitrators should look at the price as at the time the request for review was made), it may in practice be psychologically easier to decide to increase contract price if market prices have moved even further during the course of the review.

On the other hand, if you happen to be the party benefiting from an historic pricing agreement while your counterparty is feeling the pain, check the rest of the contract carefully to avoid breaching any term of it that could give it the opportunity to terminate it or change the terms. ––Your counterparty is likely to challenge behaviour that it would not make a legal issue of in a more benign market. Beware also of the tendency of some courts in the rest of the EU to be swayed by "hard luck" stories that would cut no ice with an English court. For example, in cases where one party has a clear right to call for a payment to be made, a Continental European court is more likely to be persuaded that it is in some way unfair to enforce the payment.

Recent market conditions have seen buyers turning up late to load in order to get the benefit of a lower price. This is usually a clear breach of contract if the seller wants to take the point. A more complicated question is the extent of the seller's duty to mitigate its losses – in particular, it is not clear whether or to what extent it is obliged to go into the market and hedge.

Another trend is the growth in disputes between operators and their joint venture partners. On the one hand, if the operator fails to get the required approvals for operations or budgets, the other partners may try to evade their liability to fund them, or even make a claim against the operator (to the extent of alleging gross negligence or wilful misconduct). On the other hand, where joint venture partners fail to pay their cash calls, they may ultimately face the sanction of their interest in the joint operating agreement being forfeited – with or without compensation, which can be calculated in various different ways. A possible disincentive to the exercise of forfeiture rights may be that the other joint venture partners will find themselves having to fund a higher proportion of expenditure as a result.

Meanwhile, the recent development of the English law on penalty clauses, which can be regarded as analogous with forfeiture, has refocused the legal analysis that will have to be undertaken in this context. Prior to the landmark 2015 Supreme Court decision in the cases of *Cavendish Square Holding BV v. Talal El Makdessi and ParkingEye Limited v. Beavis*, the prevailing view was that forfeiture would be enforceable during the exploration phase, but possibly not during the production phase. Now, the key question to be considered is whether the innocent parties have a legitimate interest in enforcement of the clause and whether the penalty is proportionate, rather than extravagant or unconscionable.

All this points to the importance of basic contract and project management. Contracts should be kept under review from both a commercial and a legal perspective. This should give early warning of problems that can then either be avoided or dealt with more effectively. It sounds obvious but, in the current climate, simply making sure that you are operating each contract in accordance with its terms could save a good deal of trouble and expense.

Distressed oil and gas: opportunities for some

Andrew Benitz, CEO of Jersey Oil & Gas and Jon Clark, UK and EMEIA Leader of Oil & Gas Transaction Advisory Services at EY, discussed life with sustained low oil prices and the opportunities and challenges it presents for investors. Dentons partner Tim Pipe chaired.

International oil companies have been pulling all their internal levers to lower costs. There have been capex reductions through project deferrals and redesign, opex reductions through renegotiating contracts and headcount reductions, as well as divestment of assets. Costs have come down enormously in the past 18 months and the focus continues to be on high grading of portfolios, cost reductions and optimising balance sheets.

In the North Sea, the challenges are as stark as anywhere, because of the high level of costs before the oil price began to fall in 2014. The maturity of the basin, high upfront capex requirements and decommissioning liabilities all contribute to this. The latest industry estimates are that over 80,000 jobs were lost in 2015 and another 40,000 will be lost by the end of 2016. The air of depression in the wider economy within Aberdeen is palpable, as fields are shut in prematurely and infrastructure is at risk. Many investment decisions made in 2014 and even early 2015 were based on assumptions that have since proved significantly over-optimistic.

But while insolvencies and restructurings may dominate the headlines, there are also opportunities. Downstream industries have benefited from cheaper feed stock prices. Financing is available to stronger sponsors. In February 2016, Exxon Mobil raised $12 billion in its biggest bond sale on record – the proceeds of which it may well use to snap up struggling rivals. The difficult market conditions have stimulated impressive reductions in the costs of operation in the North Sea – rig rates are down by up to 75% and average opex has been reduced by 35%.

However, the industry requires significant liquidity. Growing demand and declining production from mature fields means continuing investment in oil and gas is required. Constrained availability of finance from traditional sources (equity, debt, bond markets) has meant that new providers of capital from other sectors (such as commodity traders, private equity and hedge funds) are coming into the oil and gas sector. These alternative financiers have a different attitude to and appetite for risk as compared with more traditional financiers. There have been instances of hedge funds acquiring distressed debt at sub-par and private equity funds partnering with the incumbent management teams and engineers who have deep knowledge and experience of the relevant asset.

Whilst there is a current focus on demonstrating robust liquidity at low prices, shareholders also demand that companies position themselves for any oil price upturn. The challenge that led to the insolvency of companies that raised financing through reserve-based lending (e.g. Afren and First Oil) was their inability to secure the requisite level of financing of future capex requirements for their assets against the backdrop of lower oil prices and reduced revenue.

The allocation of resources to cover decommissioning liabilities when acquiring North Sea assets is an issue that goes to the heart of the asset valuation. There are two main options for purchasers: firstly, a purchaser assuming this obligation and funding from revenue generated from operating the asset and secondly, the purchaser entering into retention arrangements with the vendor where the vendor is "on the hook" for some of the decommissioning liabilities. Although vendors would always prefer to get a "clean break", they may have to accept a share of future liabilities as the price of a sale.

North Sea operators are also grappling with the issue of securing continued availability of infrastructure for monetising North Sea assets. With diminishing usage of some assets, it can be challenging to arrive at a commercial arrangement that incentivises existing infrastructure owners to continue to make them available to users. Nationalisation of North Sea oil and gas infrastructure would be one solution but was not recommended. In any event, the wide-ranging brief and powers of the new North Sea regulator, the Oil and Gas Authority, probably make any such nuclear option unnecessary. Its powers to create strategies to maximise the economic recovery of petroleum and to influence or coerce a very wide range of "relevant persons" to act in the ways that the Authority considers will best produce that result are extensive and it is already making a positive difference.

Renewables and the future of global energy

Nick Boyle, Founder and CEO of Lightsource Renewable Energy, Jens Thomassen, Director, Denham Capital Management, and Alejandro Ciruelos, Managing Director, Santander Global Corporate Banking, discussed the prospects for taking the deployment of renewable energy to the next level in the post-CoP21 environment. Dentons partner Charles July chaired.

At a global level, the message of CoP21 is clear: we need to reach a world of net zero GHG emissions as soon as possible. Switching from coal or oil to gas and/or widespread deployment of CCS are helpful steps to take in the next couple of decades but are not long-term solutions. Nuclear power is unlikely ever to be acceptable in all countries and building a new generation of nuclear plants – at least on the traditional large scale – poses significant environmental, financial and delivery challenges even in some countries where it is government policy to do so (such as the UK and France). So renewables are clearly a big part of the answer to the challenge of CoP21. The only questions are, how big, and how soon, in any given jurisdiction – and what will be the consequences?

There are now about 2,000 GW of renewable electricity generating capacity globally. This means that, measured by capacity, the renewables sector is already larger than the nuclear or gas-fired sectors. More than half that capacity has been added in the last 10 years, and it has grown by at least 8% in each of the last six years. Shortly before the Summit, Portugal's power system ran for 107 hours continuously (from a Saturday morning to a Wednesday afternoon) entirely on electricity generated from renewable sources. There were a number of days in May 2016 when the German power supply was 90% renewable. Even in the UK, more electricity was generated from solar than from coal-fired plants over the whole of that month.

But what is most remarkable today is not the extent of renewable deployment in a few countries where it has been heavily

encouraged through subsidies or the fact that, often running at zero marginal cost of generation, they can displace fossil fuel plant from the grid. A bigger change is that there are a growing number of countries where renewables – even if unsubsidised – can now compete with new build conventional generating stations. Prices of $50 and below per MWh have been made possible by a combination of the significantly and rapidly improved efficiency and reduced costs of the technology and the abundance of the primary energy sources such as wind and sunshine.

2015 was the first year in which a majority (134GW, or 53.6%) of all new power generation capacity completed was renewable. It also broke the previous record for the amount of money invested in renewables ($285.9 billion), notwithstanding falling technology costs. Perhaps more significantly, a majority of this new infrastructure, much of it in emerging markets, was financed on a non-recourse basis – a sign of growing investor confidence in the sector which is also exemplified by the fact that the first project bonds have been issued in the offshore wind sector, and that infrastructure funds, a notably conservative group of investors, are showing an increasing appetite for renewable projects.

A potentially still bigger shift is the disruptive impact that renewables are having on the structure of power markets. Renewables, and solar in particular, make it much easier for homes and businesses to generate their own power – or, in the case of businesses, to enter into long-term power purchase agreements (PPAs) with renewable suppliers, potentially becoming independent of the grid, once they have access to cost-effective storage. But the growth of renewable deployment has also seen an increase in the number of generators and retailers of power, and a shift away from the traditional scale, as well as the traditional technologies, of centralized power generation.

And yet there is a sense that the renewables industry still has a long way to go, and it will not all be plain sailing. There are large areas of the world where the potential for renewables deployment is high, but the progress towards exploiting that potential continues to be slow, often because of vested interests in the fossil fuel sector – which is either overtly subsidised or is not made to pay for any of the negative environmental impacts that it brings. In other markets, where renewables have expanded rapidly with the help of subsidies, there is now concern as governments cut back significantly on the financial support that has been available for a number of years.

Every electricity market is different, and the competitive advantage of renewables generally – and of specific renewable technologies – varies from market to market with physical, economic and

demographic factors. But the fundamental requirements for renewables are always the same: a sustainable policy framework, a sustainable market and market practice that works for end consumers. In a developing economy with growing demand for power and limited grid infrastructure and where the main competition is diesel generation, solar or wind can bring significant savings by supplying power directly to remote communities. Even in a relatively advanced developing economy such as that of South Africa, it is noticeable how successful the increasingly cost-effective auctions for renewables have been in comparison with Eskom's parallel attempts to build new coal-fired capacity, which have run three times over budget. Renewables can provide new power much more quickly than conventional technologies as long as they have certainty of revenue. Other notably attractive markets at present include Mexico, Brazil, India and parts of West Africa, but developers are advised not to spread themselves too thinly – this had been one of SunEdison's problems.

Of course, what may be good for customers is not always good for renewable generators. With a high level of penetration of renewables in a national power system come lower, and sometimes negative, power prices. In a Northern European country with an extensive grid and interconnection to other markets, renewables can beat all other technologies on price when they are generating, and potentially undermine conventional or nuclear generation businesses. But until the demand for storage starts to have the same effect on the prices of batteries and other relevant technologies as subsidies and renewables/decarbonisation targets have had on the price of solar panels, the leading renewable technologies – solar and wind – remain an incomplete substitute for conventional generation because they are not flexible or despatchable in the same way.

How long will this take? At what point will it make routine economic sense not just to build utility-scale wind or solar on the basis of a guaranteed (but competitive) price for a certain number of years, but to couple it with a storage facility and operate as a merchant generator, or provide a mixture of generating (contracted and merchant) and grid-balancing functions? Estimates vary: some say four to eight years; some say five to ten; others, not wanting to underestimate the potential for technological innovation or the ability of Chinese manufacturers to cut costs, think it could be significantly sooner. In some cases, the price of batteries has fallen by about 90% over 10 years and by 35% in the last six months. Nevertheless, an industry that has sometimes suffered from the inadequacy of its core supplies (panels that do not work, supported by worthless warranties) may be wary before placing big orders. Meanwhile it is interesting that both Total and Engie, companies built on fossil fuels that are diversifying into renewables in different ways, have recently made strategic acquisitions in this sector (Saft in the case of Total and Green Charge Networks in the case of Engie).

Another way to overcome the intermittency of wind or solar as an interim measure pending the availability of storage at the right price is to co-locate them with conventional, flexible generation. An existing gas or diesel-powered generator and a wind or solar farm can share a grid connection, with the fossil-fuel plant being replaced by storage over time as it becomes economically advantageous to do so. Indeed, even co-location of wind and solar can be an effective way of mitigating intermittency, since their intermittencies are often mutually complementary. These solutions have the advantage of making the most of the existing grid infrastructure. The modular format of renewables, storage and modern small-scale fossil-fuel generating plant (which is containerised and so can be redeployed in another location when it is replaced by storage) also facilitates such solutions.

There are now about 2,000 GW of renewable electricity generating capacity globally

What can governments do to help? They should perhaps be concentrating on not hindering. It is accepted and appropriate that levels of subsidy for renewables should be reduced now that they have achieved their intended "pump-priming" function, particularly for the more established renewable technologies. But what governments still do not seem to have understood is that because the vast majority of the costs of a wind or solar plant are fixed (and incurred) at the outset, predictability is essential. Changes to the fiscal environment, for example (such as the removal of the renewables exemption from the Climate Change Levy in the UK) are therefore to be avoided wherever possible.

If 10 years ago, the question was when renewables would reach "grid parity" with conventional power, now the question is when they will replace them altogether in many markets as the means of generating electricity. When this will happen, nobody can say for certain, and it will certainly be some time before legacy fossil fuel assets will be displaced in many cases. But it is worth bearing in mind that many expert predictions of the growth of renewables have been substantial underestimates. In 2015, global installed solar PV capacity reached the level that the IEA predicted in 2010 that it would reach in 2024; the levels predicted for wind energy in 2030 in 2002 were exceeded in 2010. Seen in this light, beating the post-CoP21 targets set by many countries in their INDCs looks feasible.

China

The Summit's closing plenary session was co-hosted with the Atlantic Council. It looked at how and why the Chinese energy sector is changing and China's strategy for investing in the energy sectors of other countries. The panel was chaired by David Ensor, Executive Vice President of the Atlantic Council's Office of External Relations and comprised Heather Zichal and Dr Robert Ichord, both Senior Fellows at its Global Energy Center, Dr Ken Koyama, Chief Economist and Managing Directors' of Japan's Institute for Energy Economics, and Nancy Sun, partner in Dentons Shanghai office.

One of the reasons for the success of CoP21 was the co-operation between China and the US. For the Obama administration, climate change was something that had to wait until his second term: 2013 saw both the promulgation of the Clean Power Plan and a stepping up of contacts with China on climate change issues which led to a joint statement on climate change by the Chinese and US Presidents in November 2014. Their intention in jointly announcing relatively ambitious INDCs, at this point, was to "inject momentum into the global climate negotiations and inspire other countries to join in coming forward with ambitious actions as soon as possible". In this they were successful, achieving a change in the overall dynamics of international co-operation on the issue. The two Presidents have continued to take a lead in the ongoing process of signing up to the Paris Agreement.

But if leadership on CoP21 was a natural legacy issue for a Democratic US President, why was it equally important to China, whose coal-fired economic growth has been seen for many years as a prime contributor to climate change and whose government has on occasion prevented progress in international discussions on the subject? In part, it reflects the desire of China's leaders to take a leadership role on the world stage, but it is also driven by several considerations of domestic policy.

In the EU, closure of coal-fired generating plants has been driven not so much by the legislation that has been adopted to control GHG emissions as by successive directives that limit SOx, NOx and particulate emissions. Similarly, in China, the exceptionally poor air quality in high population centres has been a major reason for the massive deployment of wind and solar PV that has seen it become the world's largest renewables market for both technologies in a short space of time and the plan of a major expansion of its nuclear capacity. There are 310 cities in China with an average PM2.5 level above the national standard, which itself is considerably higher than that recommended by the WHO.

Energy security is also an issue, because China has to import significant amounts of its fossil fuels, including three quarters of its oil. The only constraints on further growth in low carbon generation are public opinion (in the case of nuclear) and the rigidities of the current market structure. For example, it is systemic failings of the regulatory regime that have so far limited the ability of some large wind farms located in remote areas to secure timely and effective grid connections, at the same time as leading to an over-supply of coal-fired generation. Many coal-fired plants are now operating at utilisation rates that are economically sub-optimal.

Overall, though, China is embarking on an historic economic and energy transformation that has enormous implications both domestically and globally. Tackling pollution and energy efficiency through market initiatives are strong themes in the 13th Five Year Plan, as the Chinese economy increasingly shifts away from manufacturing and becomes more focused on the less energy-intensive services sector and more value-added production. Regulatory reforms will be critical to the success of this transformation. The speed and scale at which a GHG emissions trading scheme has been rolled out in seven provinces is impressive, and although it remains unclear

exactly how the country-wide version of the scheme will work (and whether it will replace or operate in parallel with the existing regional ones), it is expected to be effective. It has been estimated that $1.9 trillion of investment will be needed in the electricity sector alone to 2025. Government policy is to increase the contribution made by private capital. This includes the development of a green bond market.

Together these factors will start to change the dynamics of the Chinese power industry, but in spite of a number of papers from various parts of the Chinese state suggesting more fundamental structural changes, there is not yet any convincing plan for a fundamental shift in market design or a move to an unbundling of network, generation and supply functions. On the other hand, the track record of liberalised power markets elsewhere does not necessarily suggest that a centrally planned energy economy is worse prepared to meet the challenges of climate change.

But domestic policy is only part of the story. Much of the progress that the rest of the world has made in renewables in recent years has ultimately been facilitated by Chinese state investment in producing solar panels and wind turbines more cheaply. At the same time, although China's own economic growth rate has slowed down to a "mere" 6.9%, the annual dollar amount of its outward FDI has increased by a factor of 6 over the last decade and year on year growth remains in double digits, and a considerable share of this money is dedicated to energy infrastructure projects. The world's appetite for clean energy technology is a major factor in the development of Chinese outbound investment, whether it is an agreement to assist in EDF's Hinkley Point C nuclear reactor project in the UK, to build solar projects in Algeria, or hydroelectric in South America. The potential for continued manufacturing-led economic growth and political influence abroad that this offers is a perfect fit with China's vision of its place in the world.

It should be noted that, for the moment, China appears equally ready to supply or fund the development of coal-fired power stations to foreign markets, but here perhaps the challenge is to make developing countries understand that coal is not really a least cost option once its health impact and the lack of security that comes with imported fuel supplies are weighed against the new economics of renewables. No doubt if CCS ever becomes cheap enough for widespread retrofit deployment, China – given the high proportion of its own generation that it appears will be coal-fired for many years to come – will be equally ready to supply that technology too.

Conclusion

No single-day event can begin to do justice to the complexities of the global energy industry and the political, technological, regulatory and financial challenges that it faces – as it becomes, at least in part, a vehicle for implementing the collective ambitions of 195 governments to avoid truly dangerous climate change. After this year's Summit, we were left in no doubt about the scale of the change and the levels of investment required to achieve a net zero carbon emissions world. It is all too clear that there are any number of factors which could get in the way of this goal. But by the end of the day, many participants seemed to feel that on the basis of what has been achieved to date – whether in CoP21, in the renewables industry, with Iran or in China – there were grounds for cautious optimism.

We hope you will be able to join us at the next Dentons Energy Summit in Washington DC on 2 August or the next Global Energy Summit in London. In the meantime, look out for more analysis of energy industry legal and policy developments in our Global Energy Game Changers publications and on our Global Energy Blog