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Energy Trends for 2012

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2011 saw rising gas prices in the UK. Between Q3 2010 and Q3 2011, domestic gas prices rose 9.2% and industrial gas prices¹ rose 17.9% in real terms.² The US became a net exporter of gas for the first time, and the UK imported more gas for the first time.³ With energy demands high and prices rising for a staple source of energy, this summary aims to highlight some potential energy trends in the US and UK in 2012.

Growing Consumption and the Changing Energy Mix: An overall trend which we expect to continue is the growing demand for more energy. In the UK, for example, published figures show that energy consumption in 2010 was 5% higher than in 2009 and total energy use has increased from 1970 by an overall approximate figure of 4%. The mix of fuels has changed in make-up since 1970, with a trend toward decreasing solid fuel and electricity.⁴ Renewable energy use in 2011 made up 9% of electricity generation.⁵ The change in energy mix for the UK is also driven by decisions taken at a European level, as explained below.

It is expected that official figures will show an overall increase in total energy consumption in the US in 2011 compared with 2010, as a result of increased electricity consumption but moderated by a decrease in motor fuel consumption.⁶ The US government projected that biofuels supply will increase steadily through 2035 in response to the Renewable Fuels Standard Mandate.⁷ Generation from coal was predicted to increase by 25% from 2009-2035, largely as a result of the use of the existing capacity. However, coal's share in the total energy mix is predicted to fall from 45% to 43% as a result of more rapid increases in generation from natural gas and renewables over the same period.⁸

Fracking: Fracking is so-called because it refers to how rock is fractured apart by a high-pressure mixture of water, sand and chemicals. The shattering helps release trapped gas inside the rock. Preliminary drilling wells are made either vertically or more commonly horizontally to the rock layer and the process can create new pathways for gas to escape up the well, or can be used to extend existing channels.⁹

The process of fracking became controversial in 2011 following reports in the UK and US that fracking had caused contamination of drinking water supplies (as a result of the potentially carcinogenic chemicals used in the process), two earthquakes on the coast in Lancashire, and fire-breathing sinks in the US.¹⁰

¹ Including the Climate Change Levy.

² <http://www.decc.gov.uk/assets/decc/11/stats/publications/qep/3906-qep-dec11.pdf> p9.

³ <http://www.decc.gov.uk/assets/decc/11/stats/publications/qep/3906-qep-dec11.pdf> p10 2.1.2 as to the UK adjusting to increasing import dependence. <http://online.wsj.com/article/APf917509ee61344a38638e2c08bc47090.html> as to the US becoming a net exporter of gas.

⁴ <http://www.decc.gov.uk/assets/decc/11/stats/publications/energy-consumption/2324-overall-energy-consumption-in-the-uk-since-1970.pdf>.

⁵ <http://www.decc.gov.uk/assets/decc/11/stats/publications/energy-trends/3946-energy-trends-section-6-renewables.pdf>.

⁶ Based on projections of [http://www.eia.gov/forecasts/aeo/pdf/0383\(2011\).pdf](http://www.eia.gov/forecasts/aeo/pdf/0383(2011).pdf) p93.

⁷ The Renewable Fuels Mandate was created under the Energy Policy Act of 2005 and established the first renewable fuel mandate in the US.

⁸ Ibid; p3.

⁹ <http://www.bbc.co.uk/news/uk-14432401>.

¹⁰ <http://www.newscientist.com/article/dn21120-how-fracking-caused-earthquakes-in-the-uk.html> as to the two earthquakes in Lancashire.

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Calls have been made for the tougher regulation of fracking in the UK, but in May 2011 the House of Commons Energy and Climate Change Committee published a report which resisted calls for a ban on shale gas drilling. The Department of Energy and Climate Change is currently reviewing a report by the main UK prospector, Cuadrilla, on whether its work is linked to local earthquakes.¹¹

The US Environmental Protection Agency is due to complete a first report on a study into fracking this year and its impact on drinking water resources, with the final report due in 2014.¹² If the report's conclusions are negative, it could spur tougher regulation of the sector.

Shale: Shale gas production has boomed in the US¹³ thanks to the discovery of major deposits in areas such as the Green River Basin and Devonian Oil Shales.¹⁴ This increased gas production has seen the US switch from being a net importer of gas to a net exporter, which has cut gas prices by 19% in the last two years.

As a member state of the EU, the UK position on shale gas may yet be affected by the stance of the EU. The EU is examining the existing EU legal framework for unconventional gas, looking in particular at Poland, France, Germany, and Sweden. Committee reports are being prepared examining various aspects of safety and environmental impact.¹⁵

In December 2011, the 2050 Energy Roadmap (the "Roadmap") was published by the European Commission. The Roadmap highlights the importance of shale gas in supply diversification and a potential source of energy which could contribute towards the achievement of decarbonisation if carbon capture and storage is available and applied on a large scale.¹⁶ However, there is a lack of consensus amongst EU countries, which means that it is not known what shale's share in the energy mix will be.

For example, Poland has taken steps to increase the exploitation of shale gas. The country currently imports an estimated 70%¹⁷ of its gas and is heavily reliant on Moscow-based Gazprom.¹⁸ In advance of its presidency of the EU, Poland called for shale gas to be designated a "common European project" to be prioritised under the EU's infrastructure development programme. However, a recent paper published and presented in Brussels by the Polish Representation to the EU, entitled "Path to prosperity or road to ruin? Shale gas under political scrutiny," may evidence a switch in position.¹⁹

In Germany, public and private opposition to shale gas (including from the influential Green Party) may threaten the opportunities presented by shale gas. North Rhine-Westphalia imposed a moratorium on shale gas drilling last year following pressure from environmental activists, and changes to Germany's mining laws have been proposed.²⁰ However, a review commissioned by Angela Merkel after Japan's Fukushima crisis emphasised that low-carbon fossil fuels remain

Some American householders claimed that shale gas leaking into their drinking supply caused tap water to ignite; <http://www.scientificamerican.com/article.cfm?id=fracking-linked-water-contamination-federal-agency> as to the contamination of the water supply.

¹¹ http://www.decc.gov.uk/en/content/cms/news/cuadrilla_hend/cuadrilla_hend.aspx.

¹² <http://www.epa.gov/hfstudy/>.

¹³ <http://www.economist.com/node/21540256> and production in America having soared twelvefold since 2000.

¹⁴ <http://geology.com/usgs/oil-shale/>.

¹⁵ <http://www.naturalgaseurope.com/shale-gas-a-happy-new-year>.

¹⁶ http://ec.europa.eu/energy/energy2020/roadmap/doc/com_2011_8852_en.pdf p12 as to shale gas being an important new source of supply and to gas maybe becoming a low-carbon technology.

¹⁷ <http://www.erranet.org/AboutUs/Members/Profiles/Poland>.

¹⁸ <http://www.nytimes.com/2005/11/17/business/worldbusiness/17iht-web.gas.html> as to reliance on Gazprom.

¹⁹ <http://www.pism.pl/index/?id=6ae948577c0bd7c07f4e74b4745f74a8>.

²⁰ [http://www.ey.com/Publication/vwLUAssets/Shale-gas-in-Europe_revolution-or-evolution/\\$FILE/Shale-gas-in-Europe_revolution-or-evolution.pdf](http://www.ey.com/Publication/vwLUAssets/Shale-gas-in-Europe_revolution-or-evolution/$FILE/Shale-gas-in-Europe_revolution-or-evolution.pdf) p15.

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an important part of Germany's energy mix.²¹

In France, President Sarkozy continues to publicly state his opposition to shale gas. The forthcoming presidential elections in France this year may well shape the agenda for shale gas in France.²²

Whilst the Netherlands has been strongly pro-gas to date, the political environment has become less favourable in more recent times.²³

The EU's position in relation to energy generally is shaped by its commitment to reduce its greenhouse gas emissions by 80-95% by 2050, compared with levels in 1990.²⁴ So far, EU projections show that not even half of that target can be achieved based on current trends.

A lack of consensus is present among the countries of the EU and this is significant as there is a high level of autonomy among countries to decide their energy policies.

The Roadmap highlights a high price of renewables and predicts that electricity prices will continue to increase until 2030.²⁵ However, high pricing of renewables has been criticised by European Renewable Energy Council President, Arthouros Zervos, as being based on "unrealistic assumptions" such as only running a nuclear plant at 50% capacity, which, he says, would never be the case.

The Roadmap highlights the importance of a Common Energy Market, which should be completed by 2014. The Common Energy Market could develop into a single open market for energy, giving companies easier access to gas and electricity networks. This could lead to increased competition amongst suppliers, and better prices for end-consumers.²⁶

The process of working towards a liberalisation of the internal market in electricity and gas began in 2003 with the adoption of two directives. Under the directives, the gas and electricity markets were required to be opened for all customers from 1 July 2007.²⁷

In June 2005, the European Commission launched an enquiry into competition in the gas and electricity markets.²⁸ The provisional findings were published in November 2005, at the same time as a Commission report on the functioning of the internal market for gas and electricity. The findings showed that competition had not yet sufficiently developed, primarily as a result of Member States failing to implement the directives of 2003.

The final Commission report published in 2007 highlighted the continuing dominance of incumbents in many Member States, inadequate separation of supply and network companies, and a lack of cross-border integration in networks and regulatory supervision.²⁹

On 25 June 2009, a new liberalisation package was launched consisting of two new directives on common rules for the internal market in natural gas and electricity, respectively; a directive establishing an Agency for the co-operation of

²¹ <http://www.guardian.co.uk/world/2011/jun/27/nicolas-sarkozy-france-nuclear-power> as to reaching the age of renewable energy as fast as possible.

²² <http://www.guardian.co.uk/world/2011/jun/27/nicolas-sarkozy-france-nuclear-power> as to ban on fracking to protect the environment.

²³ <http://www.naturalgaseurope.com/unconventional-gas-prospects-in-holland-dutch-shales>.

²⁴ http://ec.europa.eu/energy/energy2020/roadmap/doc/com_2011_8852_en.pdf p2.

²⁵ http://ec.europa.eu/energy/energy2020/roadmap/doc/com_2011_8852_en.pdf p6.

²⁶ http://ec.europa.eu/energy/energy2020/roadmap/doc/com_2011_8852_en.pdf p19.

²⁷ http://europa.eu/legislation_summaries/energy/internal_energy_market/127077_en.htm.

²⁸ <http://europa.eu/rapid/pressReleasesAction.do?reference=IP/05/716>.

²⁹ http://ec.europa.eu/competition/sectors/energy/gas/gas_en.html.

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energy regulators; a regulation on conditions for access to the network for cross-border exchanges in electricity; and a regulation on conditions for access to the natural gas transmission networks.

The directives were required to be implemented by Member States by 3 March 2011.³⁰ The UK implemented new legislation in late 2011 in response to the directives. Other countries were close to implementing such legislation by August 2011.³¹

KXL: In November 2011 the Obama administration made a statement on the reassessment of the Keystone XL Canada-US pipeline. This reassessment, following protests which occurred earlier in the month, will involve the assessment of a potential alternative route in Nebraska, and President Obama announced on 19 January 2012 that he had denied the application for the KXL project. However, in his statement he went on to say that this was “not a judgment of the merits of the pipeline, but the arbitrary nature of a deadline that prevented the state department from gathering the information necessary to approve the project...”.³² The project is a proposed pipeline route from Canada to the US.³³

The Keystone project is just one example of how the presidential election in November 2012 could carry significant consequences for the US energy sector. To date, President Obama has generally been a bigger proponent than his predecessor of decreasing the reliance of the US on greenhouse gas-emitting energy and increasing the mix of cleaner energy.³⁴ It remains to be seen who the Republican candidate for the 2012 presidential election will be and what that candidate’s stance on energy will be.

Middle East: 2011 saw significant political unrest in the Middle East, most notably in Libya, which saw a drop in daily production of oil from 1.6 million barrels to 45,000 barrels.³⁵ Geo-political developments and any unrest, including the question of Iran and its nuclear program, in 2012 may continue to have an unsettling effect on oil prices.

Energy Services Directive: On 22 June 2011, the EU proposed a new Energy Services Directive (“Proposed Directive”)³⁶ for energy efficiency. The Proposed Directive expands the obligations of EU Member States, transforms previous voluntary actions into compulsory ones, and sets the stage for additional legally binding measures. The Proposed Directive is under review and targeted for implementation late this year or in early 2013. It is expected that its adoption will have a widespread impact on energy companies, businesses, and consumers.

The Proposed Directive includes the following binding measures:

- **Energy Efficiency Targets**

Member States would be required to set a national energy efficiency target, taking into account the EU overall target of 20% by 2020, but each state would have flexibility in determining the ultimate level of its target. The European Commission would review progress in 2014 and propose binding targets if necessary.

³⁰ http://ec.europa.eu/energy/gas_electricity/legislation/legislation_en.htm.

³¹ http://www.martindale.com/government/article_King-Spalding-International-LLP_1325886.htm.

³² <http://thinkprogress.org/romm/2012/01/18/406090/obama-to-deny-keystone-xl-permit-transcanada-reapply-with-alternate-pipeline-route/?mobile=nc>.

³³ <http://www.bbc.co.uk/news/world-us-canada-15686512>.

³⁴ <http://www.whitehouse.gov/energy>.

³⁵ <http://www.businessweek.com/news/2011-12-13/bp-shell-preparing-for-resumption-of-libyan-oil-exploration.html>.

³⁶ COM(2011) 370 final.

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- **Legal Obligations on All Member States and Retail Service Companies**

All Member States would be required to establish energy savings schemes. Energy distributors or retail energy sales companies would be required to achieve a very ambitious energy savings goal of 1.5% annually by encouraging end users to reduce their energy consumption by implementing efficiency improvements, such as replacing old water heaters or insulating their homes. The EU anticipates that establishing energy savings programs will reduce the EU's energy consumption by 6.4% in 2020 (the current combined consumption of Poland and Portugal).

- **Public Sector to Lead by Example**

In order to stimulate market transformation, the public sector would be required to buy energy-efficient buildings, products, and services and, as of January 2014, retrofit at least 3% of total existing floor area annually.

- **Smart Meters and Access to Customer Usage Information**

The roll-out of smart meters is already required by EU legislation but the Proposed Directive would address shortcomings in the program. For example, new meters for electricity and gas are usually provided without adequate interface with mobile or other electronic devices and billing is often based on forecasts and not actual consumption. Additionally, some Member States only require billing based on annual consumption once a year. The Proposed Directive would remedy these limitations. It would also require that minimum customer usage information from metering is provided on a regular basis, free of charge, to individual consumers.

- **Industry**

Large industries would be required to conduct energy audits every three years to create more awareness of energy savings possibilities.

- **Efficiency in Energy Generation, Transmission, and Distribution**

Regulatory measures would require that surplus heat from power generation and industrial processes and other sources are used to address heat demand in buildings. These measures include equipping new generation capacity and high-heat demand industries with heat recovery (or cogeneration of heat and power ("CHP")) units. Member States would also be required to ensure that national energy regulatory authorities take energy efficiency into account when making decisions on gas and electricity infrastructure and determining how and at what costs to distribute energy to end users.

- **Energy Services Markets**

The Proposed Directive addresses the significant market barrier of upfront investment in the implementation of energy efficient improvements by requiring energy services companies ("ESCOs") to use performance contracts whereby the ESCOs pay for initial investments and are paid from the savings on energy bills. The EU energy services market currently accounts for €6 billion; the potential for the market is estimated at €25 billion.³⁷

As the Proposed Directive is still being debated by the European Parliament and Council, we will watch its progress with interest and issue a revised update following its passage through the EU legislature.

³⁷ <http://europa.eu/rapid/pressReleasesAction.do?reference=MEMO/11/440&format=HTML&aged=0&language=en&guiLanguage=en>.

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Nuclear: The reputation of the global nuclear sector was obviously adversely affected by the crisis of the Fukushima plant in Japan. However, in spite of Fukushima, the EU Commission and its Roadmap are neutral on the question of whether or not Member States should use nuclear power.³⁸ It does not give a recommendation or a forecast on the future development of nuclear energy in Europe. In the UK, Fukushima does not appear to have directly affected the nuclear sector in terms of regulation. However, more generally and separate from any effect of Fukushima, the government is currently running a consultation (expected to be completed in April 2012) as to an increase in nuclear third party liability to €1.2 billion (£1 billion), in line with amendments agreed to in 2004 to the Paris Convention on nuclear third party liability and the Brussels Supplementary Convention.³⁹

A new planning regime has been proposed for the installation of nuclear reactors and other significant new infrastructure projects such as railways, large wind farms, reservoirs, harbours, airports and sewage treatment works. Under the Planning Act 2008, the need for new infrastructure would be addressed through a National Policy Statement, following which the local impacts of a particular development would be dealt with by an independent Infrastructure Planning Commission (IPC) rather than by Ministers or local planning authorities. The IPC was formed in October 2009, but following the general election of May 2010 and the formation of the coalition government, it was announced that the IPC would be replaced with an advisory body, returning decision-making power to the responsible Minister. Under the Localism Bill, pending in July 2012, the IPC may be abolished and its staff and functions integrated into the Department for Communities and Local Government.⁴⁰

In July 2011, NNB Generation (EDF Energy 80%, Centrica 20%) submitted an application to the UK Health and Safety Executives Office for Nuclear Regulation for a nuclear site licence for two Areva EPRs at Hinkley Point C. The Office for Nuclear Regulation has indicated that it will take about 18 months to assess NNB's proposal. Local government simultaneously gave permission to prepare the site.⁴¹

Biofuels: In November 2011, the Department for Transport ("DfT") published its response following its consultation on the implementation of the transport element of the Renewable Energy Directive (the "RED"). Generally, RED aims to establish a common EU framework for the promotion of renewable energy. It sets legally binding targets on Member States for the use of renewable energy, for example, that 20% of the EU's overall energy consumption should come from renewable energy by 2020 and that 10% of each member state's energy consumption in the transport sector should come from renewable energy by 2020 (the latter being the subject of the DfT's consultation and proposed implementation).⁴²

The RED also establishes sustainability criteria for the use of biofuels and bioliquids, sets out rules allowing one Member State to transfer a specified amount of its achieved renewable energy share to another for the purpose of helping the other Member State to comply with its target, sets out rules for joint renewable energy projects between Member States and third countries, measures that must be implemented to promote renewable energy, such as guarantees of origin and access to the grid.⁴³

Implementation will mean that only biofuels meeting the Renewable Energy Directive sustainability criteria benefit from incentives under the Renewable Transport Fuel Obligation, with double rewards for waste-derived biofuels and advanced

³⁸ http://ec.europa.eu/energy/energy2020/roadmap/doc/com_2011_8852_en.pdf p8.

³⁹ <http://www.world-nuclear.org/info/inf84.html>.

⁴⁰ Ibid.

⁴¹ Ibid.

⁴² http://ec.europa.eu/energy/renewables/targets_en.htm.

⁴³ <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:140:0016:0062:EN:PDF>.

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These changes to the Renewable Transport Fuel Obligation came into force on 15 December 2011.⁴⁴

The DfT will consult in 2012 on possible changes to the percentage of biofuel required to be supplied for the period 2014 to 2020.⁴⁵

Wind Energy: The Production Tax Credit (“PTC”), wind power’s key incentive in the US, is set to expire on 31 December 2012. As such, developers are moving quickly on wind projects in the US and members of industry and Congress in favour of the PTC will continue to push for its extension. A recent report from Navigant Consulting found the wind industry would suffer a halving of industry jobs if the PTC expires, meaning a cut of around 37,000 jobs.⁴⁶

In the UK, grants were issued for millions of pounds in 2009/10. These grants were designed to help offshore wind companies and to support general research and development in the technology. Currently, the UK has more offshore wind capacity than any other country in the world.⁴⁷

Solar: In the US, the Treasury 1603 Cash Grant Program, which has awarded more than \$1.4 billion to develop more than 22,000 solar projects, will expire in October 2012, which may make it harder for solar developers and customers to purchase solar equipment. In the UK, it remains to be seen whether the UK’s Feed in Tariff (or “FIT”)⁴⁸ will be discontinued and, if so, the impact on the solar sector in the UK. Much criticism has been levied at the UK Government for the speed of the discontinuance; however, the Secretary of State has clearly articulated the Government’s reasoning in light of current austerity cuts. In the UK this looks like the beginning of a debate that will continue for some time. Notably, a challenge in the High Court by Homesun, SolarCentury and Friends of the Earth, led for the judge to rule against the government saying that its handling of the cuts to solar power subsidies was ‘legally flawed’. The government appealed this decision to the Court of Appeal and on 25 January 2012, this appeal was also lost by the government as three Court of Appeal judges agreed with the High Court ruling. Chris Huhne, Secretary of State for Energy and Climate Change, has indicated that the government will take the decision to the Supreme Court (the last resort for the government). This decision will certainly prolong the uncertainty which has hung over the solar industry as to how much subsidy should be available for panels installed after 12 December 2011. However, on 19 January 2012, the government did say that if it lost the legal case, it would fund the higher rate payments for any panels installed by 3 March 2012 which would affect about 3,700 homes and businesses.⁴⁹

⁴⁴ <http://www.lawtel.com/UK/Document.ashx?AI0112937.pdf> Article 1: This states that the Order comes into force on the first day which is the 15th day of a month after the day on which the Order is made. It was made on 7 December.

⁴⁵ <http://www.dft.gov.uk/publications/biofuels-speech>.

⁴⁶ <http://green.blogs.nytimes.com/2011/12/12/tax-policy-blowing-in-the-wind/?ref=navigantconsultinginc>.

⁴⁷ http://www.decc.gov.uk/en/content/cms/meeting_energy/wind/wind.aspx.

⁴⁸ <http://www.britishgas.co.uk/energy-efficiency/renewable-energy/feed-in-tariff.html>.

⁴⁹ <http://www.guardian.co.uk/environment/2012/jan/25/solar-subsidies-government-loses-court-appeal?newsfeed=true>.

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