Volume 31 Number 2
August 2014

ENERGY FOCUS

Solar independence: Subsidy-free by 2020

Paul Barwell considers solar independence on page 4

The journal of the
Parliamentary Group
for Energy Studies

The Parliamentary Group for Energy Studies
Established in 1980, the Parliamentary Group for Energy Studies remains the only All Party Parliamentary Group representing the entire energy industry. We champion cross-sector energy research and development. The Group's membership is comprised of over 190 parliamentarians, 130 associate bodies from the private, public and charity sectors and a range of individual members.

Published three times a year, *Energy Focus* records the Group's activities, tracks key energy and environmental developments through Parliament, presents articles from leading industry contributors and provides insight into the views and interests of both parliamentarians and officials.

Executive Council

Contents

ISSN 0265-1734 For non-members, annual subscription rate is £65.00, single copies £27.00
Members receive a complimentary copy as part of membership to the Group

Printed in Great Britain by First Colour Ltd, London.

CHAIRMAN'S FOREWORD

With the General Election fast approaching, parties are beginning to set out their stalls on all aspects of energy policy. Thankfully, Ministerial teams and their Shadows are recognising that the energy challenge cannot be resolved without thinking seriously about the UK's long-term plans.

I am proud that PGES remains a vital resource for those grappling with these issues. We have been very pleased to welcome representatives from across the political spectrum to our recent speaker meetings and annual events. It serves as a constant reminder that energy of all kinds plays a central – although not always obvious – role in people's lives.

Indeed, the social value of a robust, sustainable energy policy was a key theme of HRH The Prince of Wales' "Happy Birthday" message to the sponsors of this year's Annual Summer Reception, the Energy Institute – which was delivered via video link as we celebrated their centenary on the House of Commons Terrace. It was a fantastic event and a great opportunity for members to catch up ahead of the Summer Recess, and we were delighted to welcome Katrina Williams, Director General for International, Science and Resilience at DECC, and Ian Marchant FEI, President of the Energy Institute, on the night.

Both Katrina and Ian spoke about the need to develop a legislative framework which allows all sectors to fully realise their potential. With that in mind, I'm delighted that this issue focuses on a nascent industry which, as our contributors make clear, holds great promise: solar energy.

Our expert contributors include:

- Paul Barwell, Chief Executive of the Solar Trade Association, discussing what is needed to deliver a subsidy-free solar industry (page 4);
- Jamie Richards, Head of Infrastructure at the Foresight Group, examining the changing regulatory environment for solar (page 6);
- Professor AbuBakr S Bahaj, Head of the Energy and Climate Change Division at the University of Southampton and Chief Scientific Advisor to Southampton City, explaining how solar can invigorate rural communities abroad (page 8); and
- Former Energy and Climate Change Minister Greg Barker MP, reflecting on his achievements during his time in Government – including the Green Investment Bank and the cultivation of "The Big 60,000" (page 10).

We are always delighted to hear from members, so please do share your thoughts and feedback by emailing our Editor, Sophie Fernandes, at **sophiefernandes@pges.org.uk**

Ian Liddell-Grainger MP
Chairman of the Parliamentary Group for Energy Studies

SOLAR INDEPENDENCE: SUBSIDY-FREE BY 2020

Paul Barwell, Chief Executive of the Solar Trade Association, considers what is needed for a subsidy-free solar future

Solar energy is a secure, home-grown solution to Britain's dual crises of security of supply and spiralling energy bills. Electricity from solar done on a big scale – on big rooftops and solar farms – has become so cheap that it could soon provide independence from energy imports and independence for consumers. This is the 'solar independence' prize that we should be aiming for.

Solar: The benefits

Solar makes no noise, creates no waste and emits no carbon. In fact, when screened from view with hedgerows or on rooftops, you wouldn't even know it's there. Solar is in fact the most popular form of low carbon energy in Britain, with 82% support[1].

An investment in solar is an investment in jobs. Over 60% of the value of installing and operating large scale solar goes straight into the British economy.

And good solar farms do not displace food production. All members of the Solar Trade Association have signed up to our '10 commitments' for developing and building solar farms, and have pledged to focus on low-grade or non-agricultural land. Sheep can graze and free range chickens can be reared between the rows of panels.

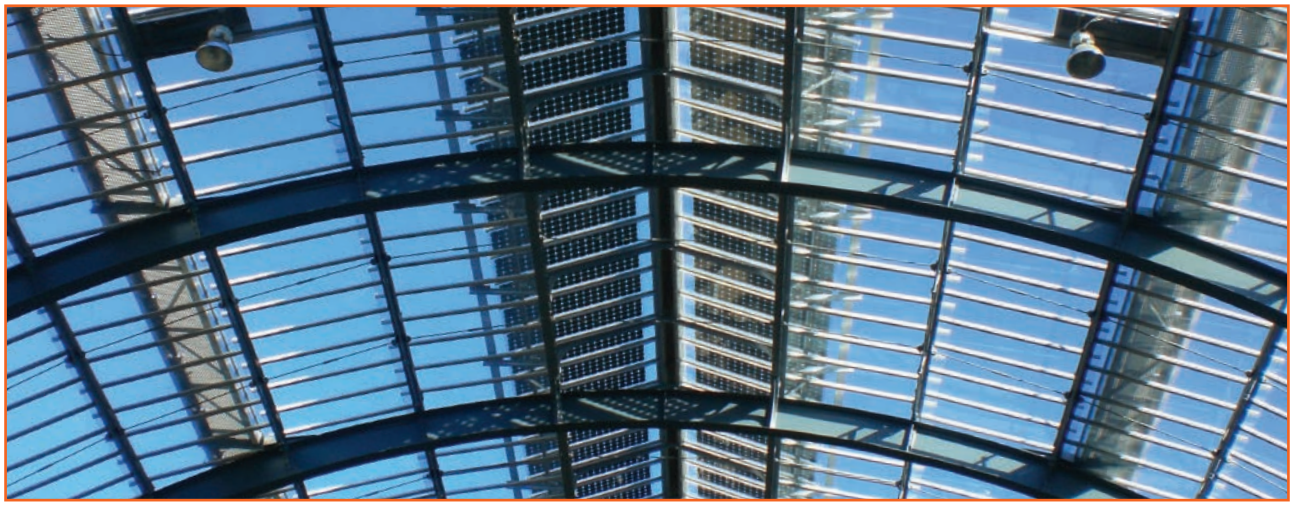


Fig.1 - London King's Cross Solar Roof 4 (C) James Beard

Fig.2 - Tavells solar farm (C) Duncan Bryson

Despite our infamous weather, solar in the UK generates 60% as much power as in the Sahara desert, and the panels work more efficiently in cooler British temperatures than in hot weather. On the longest day of the year – Saturday 21 June – solar generated 7.8% of the UK's daytime power needs. This all goes to show that solar, the most popular and second cheapest renewable, is a key part of our energy mix. And it is useful to note that within that mix, the generation profiles of solar and wind match each other particularly well.

Supporting future solar independence

The cost of large-scale solar has fallen by a massive 65% since 2010 – welcome news for the climate and the environment. But it is not quite yet at the point of being able to go off on its own and compete subsidy-free with gas and coal. We could be at that point in 2020 – but not yet.

However solar will only get to that breakthrough moment of being able to compete without public help if the Government gives it a stable policy framework and a level playing field.

At the moment, the Government, basing its decisions on out-of-date figures, is picking up the energy mix and tilting the playing field against solar.

DECC is currently threatening to withdraw all Renewables Obligation funding for solar over 5MW (about a 30 acre site) as of next year. And the reality at the moment is that, as the solar industry is made up of SMEs, the new Contracts for Difference (CfDs) auction system that would replace it only suits the largest companies with strong balance sheets and the infrastructure to bid for CfD contracts.

All this would do is hold back the UK's second cheapest renewable and make the low carbon energy mix more expensive than it needs to be.

The Government should be making sure businesses which want to participate in solar are given one last period of stable policy in which to invest. British solar just needs one final push, one last period of support, before it can achieve solar independence and compete subsidy-free, and make the most of that incredible source of power in our skies.

1 DECC's Public Attitudes Tracker, https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/342426/Wave_10_findings_of_DECC_Public_Attitudes_Tracker_FINAL.pdf

UK SOLAR WILL STILL SHINE BRIGHTLY IN A CFD WORLD

Jamie Richards, Head of Infrastructure at the Foresight Group, looks at the changing regulatory environment for solar

UK solar has come a long way since the introduction of the first Feed-in Tariffs in April 2010 and is now one of the UK's fastest growing industries. Growth has been driven by falling equipment and installation costs and a supportive regulatory framework that has seen private investment flood into the sector as never before.

According to the Solar Trade Association (STA), total UK solar capacity has now reached about 4.7GW, compared to 2.7GW in July last year. On 21 June solar's contribution to the UK's total electricity supply reached a record 7.8%, produced by thousands of residential, industrial and large-scale ground-mounted installations across the country.

The attractive and highly predictable returns generated by large-scale ground-mounted installations greater than 5MW under the current Renewables Obligation (RO) subsidy regime has stimulated significant demand amongst institutional and private investors for ways to access this growing asset class. As a result, over the last 12 months, three investment companies focused on acquiring large-scale solar assets in the UK have listed on the Main Market of the London Stock Exchange, raising almost £400 million from investors – including £150 million raised by Foresight Solar Fund Limited (FSFL) in October 2013.

FSFL is currently the UK's largest listed solar fund, owning 111MW of operating capacity across seven large-scale assets, including the largest operating solar power plant in the UK at Wymeswold in Leicestershire. FSFL has also secured a further £100 million debt acquisition facility to help grow the fund further and has put in place binding contracts to acquire a further two assets, totalling 74MW, later this year.

The new subsidy mechanism

Plans by DECC to replace the existing RO scheme by a new Contracts for Difference (CfD) subsidy mechanism for new solar projects greater than 5MW from April 2015, is not expected to slow the sector's long-term growth trajectory. However, in the short term the change effectively introduces a 'cliff-edge' deadline at the end of March 2015 by which large-scale Renewable Obligation Certificate (ROC) projects must be completed or risk not securing subsidy support.

FSFL avoids this 'cliff-edge' risk by only acquiring new solar assets once they are operational and RO accredited. However, for any solar fund investing ahead of construction, and for the many developers of solar projects, the switch to the CfD mechanism imposes a significant additional risk. For example, if an RO project, in which a fund or developer has already invested capital, fails to be completed in time and

falls over this cliff, it may not secure subsidy support under the new mechanism and any capital could well be lost. As this deadline approaches, the risk of projects not being completed in time increases and for investors looking at the sector, the avoidance of construction risk should be an increasing consideration.

From April 2015 the introduction of the CfD mechanism will mark the start of an exciting new chapter in the story of the UK solar industry. Unlike under the RO scheme, solar will have to compete for a limited annual subsidy budget with the likes of onshore wind and other established technologies. The budget for the first annual CfD auction has been set at £50 million, with bidding for 2015/16 to begin on 14 October 2014.

How will the industry respond?

This is not the first time that the UK solar industry has had to react to a changing regulatory environment. The speed at which solar power can be deployed in comparison to other types of renewables, and its rapidly falling cost, has caused the UK Government to adjust the level and mechanism of subsidy support several times since 2010. In each case the industry has adapted and continued to thrive, and there is a growing body of evidence that it will respond in the same manner this time.

Firstly, the RO scheme will still be open to solar projects below 5MW, and growth of industrial/roof-mounted and smaller scale ground-mounted installations is expected to continue under this scheme until 2017.

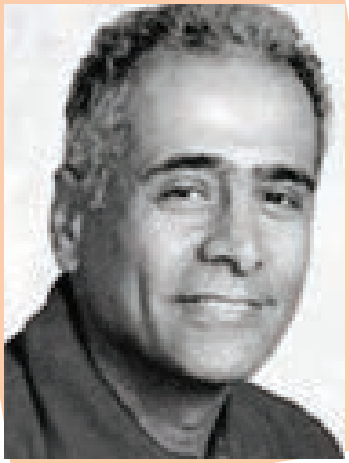
Secondly, onshore wind, with which large-scale solar could need to compete with under the new CfD mechanism, will still be eligible for support under the RO scheme until 2017. Given the familiarity of the onshore wind industry with the existing scheme, it is likely that most project developers will stick with it until then. Any degree of competition is likely to drive efficiencies in the industry, and under the CfD mechanism, project developers may opt for even larger projects than seen under the RO scheme to achieve economies of scale.

Finally, for funds like FSFL the emergence of a vibrant secondary market in large-scale solar assets will present an exciting new opportunity in 2015 and beyond. Some developers may also look to aggregate portfolios of sub-5MW projects, which could prove an interesting option for investors, like FSFL, looking to acquire large-scale assets.

Conclusion

In conclusion, the early introduction of the CfD scheme will force the UK solar industry to respond by improving efficiency and reducing costs. In the long run this can only be a good thing, and will help to ensure the industry's continued and sustainable growth in the years ahead.

ENERGY FOR DEVELOPMENT PROGRAMME: CREATING COMMUNITY-CENTRIC ELECTRICAL MINI-GRIDS



Professor AbuBakr S Bahaj of the Energy & Climate Change Division, Sustainable Energy Research Group at the University of Southampton, explains how solar can invigorate rural communities

Access to energy, especially for rural communities, represents a central pillar for development. It is widely recognised that without it, and particularly without a reliable energy supply, it is difficult to escape a subsistence lifestyle and poverty. Such issues are embedded in the United Nation's Millennium Development Goals (MDG), yet it is still estimated that approximately 1.3 billion people around the world have no access to reliable electricity.

In many developing countries, the upfront costs involved in connecting rural villages to the electrical distribution network is, and is likely to remain, prohibitively expensive. This is the case in sub-Saharan Africa, which is the main focus for the Energy for Development (E4D) programme. The overarching aim of the programme is to establish and implement replicable, sustainable, decentralised off-grid electricity generation which promotes development and improves wellbeing in rural communities in East Africa. The work addresses fundamental scientific, engineering, social and policy research issues in rural power generation and distribution, transferring knowledge between participating countries and building research capacity both in the UK and in the other collaborating nations.

The E4D programme

The programme has people at its core, engaging effectively with communities to determine their energy needs, design appropriate community vehicles and renewable electrical power supply systems focussing on long-term project sustainability. One major aim of E4D is to invigorate communities and their village centres providing support for self-governance, finance and entrepreneurship. The first intervention in Kitonyoni village market in Makueni County, Kenya in 2012 created a community based cooperative and a mini-grid providing electricity driven by a solar photovoltaic (PV) system within the village Trading Centre (TC). Businesses were connected directly to the grid which, in turn, provided electrical charging for appliances such as LED lanterns and mobile phones. The grid was designed to supply power to all TC buildings: shops, cafes, schools, health centres, and places of worship. The plant infrastructure provided a focus for the village, housing the plant equipment and providing office and meeting facilities for the community and its committees.

Fig.1 - Bird's eye view of the Trading Centre, solar PV canopy and the water tank. Two containers underneath the canopy hold the batteries and the system's switch gear and protection. One of the containers is used as the cooperative office.

An economically sustainable approach

In this project, the E4D team worked closely with the villagers to determine their needs, aspirations and goals with respect to electrification. The team established an economically sustainable approach, whereby the community contributes to the project and is responsible for the operation and maintenance of the plant. Through the set-up of an energy supply company (ESCO), income is generated for the cooperative via membership fees, local sales of electricity and share ownership. Such income covers all the running and replacement costs of project components and management, provides micro financing for the community and contributes to the recovery of the capital cost of the project. Together, E4D engineers, local contractors and villagers were able to assemble the containerised 13.5 kWp photovoltaic solar plant, canopy and the installation of the locally supplied minigrid within one week (fig.1). The premise of the modular project design makes it easier to replicate and resize to suit villages of different sizes and energy requirements.

We estimate that up to 3,000 local people will benefit from electrical energy provided by the project. The school, health centre, churches and the 40 businesses in the Trading Centre have round-the-clock stable electricity, allowing them to extend their working hours and provide additional services such as information technology training, tailoring and hair dressing. Additionally, the solar canopy of the PV system was designed to act as a rain collector (20,000 litres), enabling water to be stored and re-sold by the cooperative to the community throughout the year.

Benefits of the programme

Over the last 18 months, the E4D project has undoubtedly transformed the lives of the villagers. It has provided the research team with data to appraise system performance, monitor energy demand within the Trading Centre and inform project replication. The project is now a beacon in Africa, hosting many local and international visitors from countries such as Japan, Germany, UK, Zambia, as well as the World Bank and other funding agencies.

The transformation of the Trading Centre is very clear: land prices have more than doubled, at least five new buildings have been completed, new businesses started, most businesses' income has more than doubled (fig.2) and, importantly, a new, donated, maternity ward has been electrified and is now operational. The challenge now is to reduce capital costs and embed the concepts and models in replication projects. This is currently being undertaken in a second project in Kenya, as well as projects in Cameroon, Uganda and Mozambique. There is a strong and growing interest from governments and the private sector to adopt the E4D approach, and from international funding agencies to provide substantial funding to support the concept at scale.

Acknowledgement

E4D is a five-year multi-institutional research programme, funded by the Research Councils UK and the Department for International Development. Its full name is "Replication of Rural Decentralised Off-grid Electricity Generation through Technology and Business Innovation". The project consortium comprises of the University of Southampton and Imperial College, London. More details about the project and the partners can be found at:

www.energy.soton.ac.uk *and* ***www.energyfordevelopment.net****.*

Fig.2 - Stephen, who opened a shop in the Trading Centre about a year ago, told Professor Bahaj (pictured right) that his weekly income from mobile phone charging is only about three times what he pays for the electricity he buys from the community. Establishing these vibrant tenants and local entrepreneurship are key to the success of such projects.

INTERVIEW WITH GREG BARKER MP

After a decade holding Shadow and Government roles in energy, we ask what's changed and what's next – both personally and for energy policy.

With 10 years holding roles across climate change, energy and environment, have your views changed?

I think in terms of climate change, it is now a commonly accepted fact that it represents a clear and present risk to the world. Now the time for action is getting shorter and shorter... BUT I remain optimistic we have it within us to avert the worst impacts of man-made global warming.

The political climate for action has changed very significantly over that period. A number of important factors have changed, in particular the collapse of the cost of certain technologies. Solar, for example, has reduced in cost by over 70% since 2009. Phenomenal. Also, the assertion you can have green growth has been proved. Here in the UK we are 25% below our 1990s emission level and yet we have the fastest growth in the G7. We are living, real proof that you can cut emissions and grow your economy.

The other big factor is the geo-politics. If you look now at the way in which China, more recently India, even the United States are more engaged in a practical way on this agenda. Another big factor which is often uncomfortable for many in the environmental lobby is the growth of gas. The biggest reasons that the UK is able to sit proudly with a 25% cut in its emissions now compared to 1990 is because of the switch from coal to gas as well as the roll-out of renewables under the Coalition Government. And if we can see that replicated globally, that could have a hugely important impact on emissions growth in the coming decade.

So, we have really been through it these last 10 years, but I emerge optimistic that we can still beat this thing.

What three words would you use to describe your relationship with your DECC coalition colleagues?

I would use two, remarkably effective. I was surprised at how effectively I was able to work with both Chris Huhne and then subsequently Ed Davey. The Coalition was formed in the national interest. I think on energy and climate change, there was actually a remarkable alignment of views. The fact is the Conservatives came into a department with far more ideas and much greater thought than the Lib Dems did. So the Green Investment Bank, that was an idea that George Osborne and I first articulated in November 2009. And I have to say, the Green Investment Bank has been delivered at a greater scale and impact than any of us hoped in 2010. It is now an enduring institution that will outlive this Government and will become a permanent part of the architecture of the City of London.

Then if you look at other initiatives – the 10:10 campaign was something that we did in our first year in Government, aiming to slash carbon emissions and energy consumption across the government estate by 10% - actually we achieved 13.5% - it was the Conservatives who first signed up to that. If you look at the Green Deal Market, it has transformed the way we are looking at energy efficiency. We still have a long way to go, to develop at scale the 'pay as you save' model, but the Green Deal Market is shifting the emphasis towards private sector action and product innovation, and creating a standard model of energy efficiency assessments which drives action. It has been extremely successful and we are now well over a quarter of a million Green Deal assessments in, and I feel we have really planted seeds for long term growth in the market for energy efficiency.

And on energy efficiency, the idea of megawatts was something I first started talking about in Opposition, learning from the work of Amory Lovins at the Rocky Mountain Institute: why is it that we singly fail to recognise that investing in saving energy is far more cost effective than constantly building new

supply? That truism is reflected in our Electricity Market Reforms and the capacity market design, which will allow, for the first time, energy efficiency to bid in as part of the solution to meeting capacity shortfall; whether that's demand response offers or permanent demand reduction solutions.

It was the Conservatives who led that, but with the support of the Lib Dems and I think we have worked extremely effectively together and I'm proud of the record.

You brought a lot of new ideas and vision to the Department, do you think officials embraced that?

Well I think they were slightly surprised to have a Minister who was so immersed in the subject, because during the Labour years of course, the average tenure of an energy minister was a matter of months sometimes. I'd spent five years on the Environmental Audit Select Committee and then a number of years in the Shadow brief. So I came with a very clear view of what it was that I wanted to do.

I can't do anything other than praise the expertise that there is in DECC and the Civil Service and the willingness there is from officials to work with me. I think sometimes government departments can be like large cruise liners in that they do take a while to turn around, but when they do, they are unstoppable. I think it took a while to turn around the view that solar could become an important part of the electricity mix and that distributed energy per see could be an important part of the overall energy sector and challenge the hegemony of the 'Big Six'. That was a pretty wacky idea when I came into the Department.

You coined the term 'Big 60,000'. Will this be your legacy?

I hope so, but I think my biggest legacy actually will be the Green Investment Bank, which spans much more than just distributive energy. But in terms of the political narrative, I think giving that massive boost and sense of confidence and belief in an alternative to an energy sector dominated by just a handful of companies and reversing the seemingly unstoppable decline of the number of participants in the market to an irreducible core, is something that I hope I have helped turn around.

I think producing energy as a meaningful part of the consumption of a sizeable business or a building or a community will increasingly become the norm rather than the exception. And that is why I also became a little bit sceptical about just seeing distributive renewables that you just stick in a field, whether that be a wind farm or a solar park, because I want distributed energy wherever possible to be close to the point of use and aligning the user or the consumer with the generation of energy is the sweet spot.

If that was the high, what could have gone better?

Well I think cutting the solar tariffs back in 2011 was very difficult. I got a huge amount of abuse for doing it. Had I not done that, we would have bankrupted the scheme and the Treasury would have closed it, that is very clear. And I've always believed that the way to true scale is through driving down subsidy. Many in the industry didn't want to see that and it was very difficult and sometimes personally abusive from people who didn't want to see the long-term goal that I had. So that was probably personally the most difficult.

What do you think should be the priorities for energy policy post-2015?

I think the next five years is going to be about delivery. It's going to be about a relentless focus on costs, to ensure that we do get renewables as close to grid parity as we can. I think we are very close to that with solar, and will be achieved within the next two or three years. I think we are close to that with onshore wind. If we can drive down those costs further, we have huge potential to be a global leader in offshore wind.

Where I actually put a lot of effort in but there is no quick win - although I think there will be a lasting legacy - is marine. I created the first UK marine energy parks in the South West and then in Scotland. We are in pole position to dominate that global market. There is no country in a better position in terms of the science and manufacturing and deployment of these technologies than the UK. But that requires continuing partnership between Government and the private sector.

Is there anything you would like to say on the future of solar?

Just that when I first set my sights on 20GW of solar by the early 2020s, people thought I was mad. But now we are seeing around 4GW installed already – we are nearly 25% of the way there. I think the 20GW ambition remains absolutely on the table and one I'm confident we can still meet.

If you could go back to 2010, what advice would you give to the newly appointed DECC minister, Greg Barker?

Trust your gut instincts. When you think you are being too ambitious, just keep persevering.

You must have hundreds of opportunities on offer - what's next for you?

A nice holiday! At the moment I'm just exhaling. I hope to do more things abroad. One of the reasons I am leaving the House of Commons is that I want to do more internationally. So I think I'm not going to leave this space, and I remain passionate about it, but in terms of my future business career, I think it is more likely to be abroad than at home.

You can read the full interview at www.pges.org.uk/library#articles

SHALE GAS: IS IT RIGHT FOR THE UK?

MARCH SPEAKER MEETING: Address to the Parliamentary Group for Energy Studies

By Paul Mason, New Business Manager, Total E&P UK Limited

As a traditional "major" integrated oil and gas company, Total is involved in many energy segments. Shale gas development is also an increasing part of our global strategy and we are already active on shale gas in many countries such as Argentina, Denmark, Poland, Australia, China and the US.

Total strongly believes that all energy sources will be required to meet growing global demand and that gas will remain an important part of the future energy mix. Natural gas resources are essential to ensure a smooth transition to a lower carbon energy mix, while limiting price pressure and guaranteeing secure supply. Significant investment needs to be made to optimise and diversify production to prepare for tomorrow's energy mix, particularly by enhancing energy efficiency and developing alternative and renewable energies. At the same time, we remain committed to tackling issues of climate change and natural gas is the cleanest of all fossil fuels, emitting almost half of the greenhouse gas of coal in combustion for energy production.

In this context, our entry into shale gas in the UK has generated much comment even though it is a relatively modest investment for Total. We consider the UK one of the most promising countries in Europe for shale gas development. This is because of the geological evaluation, supportive government and well-established "open" gas market, with existing pipeline infrastructure.

Total is a long-term partner to the UK, with over 50 years' presence and experience. We are among the biggest investors and producers in the North Sea and provide employment for over 3,000 people in the UK. We maintain a diverse portfolio of UK activities, most notably through our offshore exploration and production activities, where we are applying some of the industry's most advanced technologies to unlock remaining reserves. While we continue to play our part in stemming the decline of North Sea production, we believe the UK is well placed to develop its shale gas resources and thus reduce its reliance on imported energy.

Total and the UK shale gas industry

Total has signed an agreement to acquire a 40% interest covering licences in the Gainsborough Trough area of the East Midlands. Our partner, IGas, will be the operator during the initial exploration programme, with Total taking over the operatorship as the project moves towards development.

The first well is planned for 2015-16, reaching a pilot stage in 2016-17. Total will play an important role because of our global experience in the exploration and production of shale gas. We will provide technical advice and contribute to facilitating relationships with the authorities and local stakeholders where required.

Hydraulic fracturing: Should there be concern?

Hydraulic fracturing is controversial, banned in France and opposed by environmental campaigners in the UK. Total

is an independent international energy company and respects the political decisions made in the countries where it is present. Where countries have made strategic choices to explore for shale gas, Total is well positioned to offer its expertise, bringing also the necessary guarantees in terms of commitment to the highest standards of safety and environmental responsibilities. This is something Total takes very seriously, taking all necessary measures to minimise any environmental impact.

We have experience of working in areas of outstanding natural beauty and environmental significance around the world. In the UK, for example, we are building a new sub-sea infrastructure and gas treatment plant in the environmentally sensitive Shetland Islands, to bring future supplies of energy to the UK market from the deep water basins lying to the west of the Islands.

For Total, our sustainable growth model is based on a programme of profitable investments and public acceptance of our activities. Industry and Government must work together, reassure local communities, address concerns and be fully transparent through the whole process. We must engage early and we must get it right and have the necessary and essential support of local communities and authorities. We will fully support IGas as the operating company in employing all best practices and ensuring sound communications with all stakeholders. Total has also recently become a member of the UK Onshore Operators Group and is involved in the development of the onshore industry framework.

What role should Government play?

It is important to remember that it could take 10 years from exploration to full development. Our business and investment decisions are long-term and a stable investment climate is key to our approach and vision.

There is of course a need for robust regulation and we trust the authorities will put that in place for the onshore shale gas industry. We already have extensive experience and knowledge of the North Sea, which has one of the most stringent regulatory frameworks in the world.

Land and planning issues will be critical with proper, but efficient and streamlined planning application processes to avoid unnecessary lengthy permitting approvals, which could otherwise undermine development.

In the longer term, we see shale gas development as contributing to improved energy security, economic growth, creating jobs and tax revenues for the UK.

For more information please visit **www.total.com**

SHALE GAS: IS IT RIGHT FOR THE UK?

MARCH SPEAKER MEETING: Address to the Parliamentary Group for Energy Studies

Stuart Andrews, Partner at Eversheds LLP also contributed to this speaker meeting.

Stuart is a specialist planning lawyer and leads the National Planning Team at Eversheds LLP. He is a dual qualified town planner and solicitor.

He has particular expertise in the promotion of redevelopment projects involving complex compulsory purchase orders, substantial highway orders and associated environmental assessment.

SHALE GAS: IS IT RIGHT FOR THE UK?

MARCH SPEAKER MEETING: Address to the Parliamentary Group for Energy Studies

By Professor Peter Styles, Applied and Environmental Geophysics, Keele University

We are used to the concept of exploration for oil and gas. This involves searching for and locating accumulations of oil and gas trapped in special structures in porous rocks, which are capped by an impermeable rock, keeping it there until we find it. To do this we use sophisticated (and expensive) seismic techniques and we call that, for some unhelpful reason, conventional oil and gas.

However, we don't often realise that this oil and gas was not formed there but has migrated from deeper, older rocks and some of it has serendipitously been caught, while a great deal was lost to the surface where nature took care of it, breaking it down, albeit over long time-scales. We sometimes still find these natural oil-seeps in the UK, e.g. in Formby Lancashire, the Shropshire Tar-Tunnels and sometimes in coal mines. The place where this hydrocarbon forms is called the source rock and in the UK (and most other places) these are what we call shales. Very fine-grained, organic-rich deposits laid down in the low oxygen environments of deep ocean basins which extended across a great deal of the US and Europe (which of course were much closer then), in the early part of the Carboniferous period just before the thick coal deposits which are found in the same geographical regions. We call this again unhelpfully (as there is no difference between the gases), unconventional hydrocarbons.

The 'Goldilocks Effect'

The presence of shales in itself is not enough to guarantee that there is oil and gas there; they must be 'cooked' under just the right temperatures and pressures which I call the 'Goldilocks Effect'. Too cold and there is no formation of hydrocarbon, too hot and it's formed and broken down and left as bitumen. But if it's 'just right' then we can get gas, oil, or a mixture of both. The product is often a rich mixture of methane (which we recognise as natural gas), but also heavier hydrocarbons such as ethane, pentane, hexane and so on, which are extremely valuable as feedstock for the petrochemical industry.

There are extensive shale deposits across most of England, South Wales and the Central Valley of Scotland and some will be prospective for shale gas etc. The British Geological Survey has estimated that there may be c.1300 trillion cubic feet of gas in Northern England (possibly 25-40 years of UK supply at a 10% recovery rate) and some 4 billion barrels of oil in the Weald. The gas in particular is very welcome as economic and political developments in Ukraine and Russia, together with a depleting North Sea and closure of coal-fired power stations, make access to secure and sustainable long-term gas a 'Holy Grail' for the UK.

Why aren't we racing towards extraction?

That all sounds excellent: so why aren't we racing towards extraction? The problem is that shale holds onto its gas extremely tightly for two reasons, which explain why it is still in place after more than 300 million years:

- It has very few pathways through the rock (low permeability)
- Gas is adsorbed onto the molecular structure in a liquid-like layer

And that, of course, is where 'fracking' comes in - or as we used to call it before it became such a contentious process: hydraulic stimulation. Two significant technological developments have made it possible to extract methane from shales, and have been deployed with great success in the US. These are:

- **Horizontal drilling:** the ability to turn a drill-string through ninety degrees to drill along a rock formation rather than straight through, giving access to far greater rock volumes. This process is how Wytch Farm, the largest European onshore oilfield, can recover oil from ten kilometres beneath the English Channel.
- **Fracking:** This involves producing artificial pathways in the shale through which gas can travel, by pumping high pressure water (sufficient to overcome the weight of the rock above) to create a network of spidery cracks often only a few millimetres across in the rock. These will close if the water pressure is released and so sand is introduced as a proppant, with the aid of a very small amount (but attributed by opponents of the process with extreme significance) of relatively commonly used chemicals which constitute only a fraction of a percent by volume. This takes place at depths of about 8,000 to 10,000 feet (3.5-4 km below the surface).

This is not a new process, having been first used in its current form in 1947, and with many hundreds of thousands being carried out in the USA. Indeed the first UK fracking for gas is at least as early as 1964 just east of Glasgow, and in England monitored seismically by my research group in 1988 in Beckingham in Lincolnshire with BP. We will never know the true potential of shale gas unless we drill some boreholes and assess its extractability directly.

Just like any industrial process, this must be carried out under careful regulation and monitoring after environmental baselines have been established and with appropriate legislation. The HSE and the Environment Agency have been very clear that the necessary regulations and jurisdiction exist, albeit they may need to be more sharply focussed.

Public Opposition

There is significant public opposition to 'fracking', some of it simply down to the terminology as few understand the process properly, citing as show-stoppers: induced seismicity, atmospheric emissions of methane, groundwater contamination, visual amenity and traffic. Fracking has become the whipping-boy for issues which are not shale gas-specific and which exist for any oil and gas activities.

These all require extremely good housekeeping at the surface and in the final hundred or so metres where the four concentric, grouted, inch-thick steel pipes pass through our aquifers. The industry knows how to deal with these and will not be permitted to cut any corners in the harsh glare of public and legislative scrutiny.

The other criticism of shale gas is that it may perpetuate the fossil fuel cycle, and this is indubitably the case. However, it is not possible to instantly switch to zero-carbon energy in the UK, Europe and certainly not in the developing world where energy is key to alleviating poverty, as well as providing a route to economic self-sufficiency.

The trick is to remove coal from the power generation process and substitute gas for as long as we need to develop practical, real-world energy solutions, not rhetoric.

The US has reduced its carbon footprint by c.20% while having gas at $3 per GWh while Europe pays c.$8 and Japan will outbid anyone for LNG from Qatar at $18.

Conclusion

Just as we (most of us) are happy to purchase pre-packaged supermarket steak without a great deal of thought as to where it comes from, we appear to be happy to consume 'shrink-wrapped' energy without cognisance that someone, somewhere at the end of a cable or pipeline, often in a country without political dissent or adequate environmental regulation, is picking up our environmental bill. This is neither ethical nor environmentally sustainable.

We would do better to repatriate our means of energy extraction, dealing with environmental challenges and the eventual disposal of carbon dioxide within our own bailiwick.

SCOTTISH INDEPENDENCE: WHAT WOULD IT MEAN FOR UK ENERGY?

JUNE SPEAKER MEETING: Address to the Parliamentary Group for Energy Studies

By Professor Peter McGregor, Director of Strathclyde International Public Policy Institute & Head of Economics, University of Strathclyde

What are the likely implications of Scottish independence for energy policy in the Rest of the UK (RUK)? I examine the likely impact on each of the goals of energy policy, the main ones being[1]:

- Security of supply
- Environment (emissions)
- Affordability

Security of supply

The Scottish Government (SG) argues that RUK needs electricity from Scotland to: "keep the lights on". SG emphasises the decline in UK (as compared to Scottish) capacity margins. Ofgem has warned of the risks to electricity security of supply over the next few winters. Scotland's export capacity is set to increase given grid improvements and renewables development.

There is a "capacity issue" for RUK, but under Scottish independence RUK Government (RUKG) will import from Scotland on a purely commercial basis. Here any alternative energy source helps to keep the lights on, but if imported it creates a dependence that could threaten security of supply. Furthermore, Scottish electricity exports currently constitute less than 5% of RUK's electricity consumption – though much more important to Scotland (25%).

RUKG may choose to expand its own renewables capacity. Legally binding EU and climate change targets (see Environment section) are challenging, but nuclear and large-scale biomass are feasible options for RUK. RUK can invest in capacity to import low carbon electricity from elsewhere. In short-run capacity, restricted is restricted; in the longer term there is a much wider range of possibilities. Also, Electricity Market Reform capacity payments may, in due course, address declining capacity issues in RUK, and longer-term efficiency and demand side improvements could limit RUK growth in energy demand.

So RUK can keep the lights on without imports from Scotland and the longer the timescale we consider, the more opportunities RUK would have for substituting other sources of energy.

Overall, in terms of keeping the lights on, the importance of Scotland to RUK seems exaggerated by the SG, which is not to say of course that there are no challenges ahead for an RUKG in this respect – and importing from Scotland is likely to be part of the solution. Furthermore, Scotland may have its own security of supply challenges – smaller economy, less diverse generation capacity (no nuclear, large biomass) – but these are likely to reflect the intermittent nature, rather than the level, of its generation capacity.

Environment

Climate change is impacted mainly by: renewables (and other low carbon) development, the price of carbon and energy efficiency. We focus here on renewables, since this is likely to be most immediately impacted by independence, and is already the subject of considerable controversy.

A key feature of successive SGs is their emphasis on renewables because of the scale of the resource in Scotland (and the perceived economic development potential of exploiting it). The SG argues that, without Scotland, RUK will be unable to meet its EU 2020 targets (for renewables or emissions).

But do EU targets really ensure RUK is a captive market for Scottish electricity exports? We have already seen that other low carbon options are available, but the timescales required to activate these can be very extended. Furthermore: RUK can always trade green certificates in the EU, and EU targets may themselves be renegotiated after independence in a way that would be likely to favour RUK relative to Scotland.

Overall, EU targets would undoubtedly be a challenge for RUK, but it is not clear that Scotland is the key means of it meeting these, and the longer the time scale the greater RUK's options.

Affordability

Much of the emphasis on affordability has focussed on the likely impact of independence on affordability in *Scotland*, not RUK. Currently Renewable Obligation Contracts – subsequently, Contracts for Difference that apply to low carbon technologies as a whole, not just renewables (and so include nuclear) - are funded jointly by all UK taxpayers.

DECC argues that prices to Scottish consumers would have to rise very significantly to cover this if Scotland becomes independent and has to fund Scottish renewables development entirely on its own. Independent analysis initially supported this argument, but the UK Government's support for nuclear makes the case rather less clear cut. Paying for its own renewables is expensive, but conceivably less so than paying a population share of new nuclear and renewables. Furthermore, there remains some doubt about the legality of RUK withdrawing support from renewables contracts struck prior to independence. Nonetheless there are likely to be significant pressures on affordability, North and South of the border, with or without independence.

Conclusion

Scottish independence may create some short-to-medium-term disruption for RUK energy markets, though it need not do so. However, it is not likely over the longer term to represent a significant threat to RUK's energy policy objectives – notably security of supply and emissions and renewables targets. RUK can continue to import electricity from Scotland if that makes sense in terms of relative costs. However, both Scottish and RUK Governments will continue to face major challenges in energy policy, not least in terms of affordability.

It seems likely that, at least in terms of the security of supply and environmental goals of energy policy, both Governments – and the population of the UK – would benefit from coordinated, rather than competitive, energy policies.

Acknowledgement

This note draws liberally on joint research with colleagues in the Fraser of Allander Institute, Department of Economics and Strathclyde International Public Policy Institute, University of Strathclyde. I am grateful to the ESRC's Future of the UK and Scotland Initiative and ClimateXChange for their financial support for our research into energy issues.

1 The Scottish Government includes the economic development potential of the energy sector (and of renewables in particular) as an explicit goal of energy policy, but this receives less emphasis in the UK, so we do not discuss it explicitly here (though the arguments we consider have implications for economic development).

SCOTTISH INDEPENDENCE: ENERGY MARKETS, LAW AND NATIONHOOD

JUNE SPEAKER MEETING: Address to the Parliamentary Group for Energy Studies

By Adam Brown, Senior Associate - Energy, Dentons LLP

Energy policy and the legal frameworks that implement it provide a good perspective on the debate over Scottish independence. From this perspective, one can see clearly enough why the Scottish Government wants independence, but also that it may not easily deliver all their ambitions - or the aspirations of industry and consumers - any more effectively than the constitutional status quo.

Under the current devolution settlement, the Scottish Parliament cannot legislate on the generation, transmission, distribution or supply of electricity; on the ownership of exploration for and exploitation of deposits of oil and gas; on coal or nuclear energy; on the shipping or supply of gas through pipes; or on energy emergencies such as a refinery or tanker drivers' strike.

The inability to legislate for itself in these areas would demonstrate a lack of statehood for any country, let alone for one whose Government has laid as much emphasis on the contributions of the energy sector to its future prosperity as the SNP has. And although the Conservatives, Labour and Liberal Democrats have all now pledged to devolve more powers to Scotland in the event of a "no" vote, so far as I am aware, none of them has yet suggested that Westminster should give up its monopoly on legislation and policy in these energy-related areas as part of a "Devo Max" outcome. Energy is therefore central to the debate: it is central to claims about the kind of things that Scotland is missing out on by not being independent; about an independent Scotland's ability to prosper economically (would the offshore oil and gas and renewables industries continue to grow in an independent Scotland?); and about an independent Scottish Government's ability to finance its plans for more generous public spending (it would be more dependent than the UK as a whole is, on tax raised from oil and gas production, whose profits are inherently volatile).

It is clear that the Scottish Government would like to have more control over the fiscal aspects of oil and gas policy. But that aside, it would seem that they would not want to do anything dramatically different in a post-independence world. When it

comes to the other aspects of oil and gas regulation they appear to endorse the conclusions of the Wood Report as firmly as the Westminster Government. They have a vision of continued export of Scottish renewable electricity to England and Wales which relies both on preserving the existing GB-wide grid and trading architecture and on there being no economic barriers to Scottish wind, wave and tidal power competing on equal terms with other generators to sell their power to those supplying electricity customers in England and Wales; in other words, on subsidies funded by those customers continuing to be available for Scottish projects through the Renewables Obligation and Contracts for Difference.

None of the things that make up the Scottish Government's vision of the energy market in England, Wales and Scotland is legally impossible or even fundamentally difficult to achieve. For example, they point to the Single Electricity Market in Ireland as an example of how it is possible to align the autonomous regulatory regimes in two countries so as to facilitate the operation of a single, cross-border energy market with, effectively, a single grid system. While it is true that the EU Court of Justice has recently ruled that an EU Member State may refuse to allow generators in other Member States to benefit from its renewable subsidy schemes without necessarily infringing the EU rules on free movement of goods, there is nothing in that judgment which would limit the scope for the Government of the Rest of the UK (RUK) to continue subsidising Scottish generators.

In other words, the Scottish Government can have everything they want if Westminster Government and Parliament are prepared to let them have it (although it would take time to make all the necessary adjustments to the legislative and regulatory frameworks). A "yes" vote does not automatically mean specific outcomes in the negotiations; detailed policy formulation, legislative drafting and regulatory revisions would follow a referendum. The two Governments will have to reach agreement, and in most cases, if they fail to do so there will be no higher authority or body of precedents to which to appeal to break the deadlock.

Meanwhile, away from the political battlefield, the prospect of Scottish independence is just another item added to the long list of legislative and policy initiatives that operate as potential sources of uncertainty for the energy industry and potential investors in Scotland; including the impact of Electricity Market Reform; the post-Wood Report changes to offshore oil and gas regulation; Labour's proposals for further major changes to the electricity market; and a Competition and Markets Authority investigation into GB energy supply markets which could result in further major structural reforms.

Scottish independence will inevitably complicate the implementation of all of these to some extent. But what of the underlying big issues, such as how to engineer a major switch in the electricity generating mix without over-subsidising generators; reducing the carbon intensity of transport and domestic heating and cooking; and maximising economic recovery of oil and gas from oil and gas fields with declining productivity alongside management of the decommissioning phase.

Give or take a certain amount of duplication of effort between Edinburgh and Westminster, perhaps the best that can safely be said in most cases is that it is not obvious that an independent Scotland will necessarily make it any harder to tackle these. Taking a more optimistic view, we may hope that in one area of crucial future importance, cross-border co-operation, RUK and Scotland could lead the way.

Acknowledgement
For a fuller discussion of the issues raised here, see Dentons' UK energy law and policy blog at http://www.targetukenergy.com/.

SCOTTISH INDEPENDENCE: WHAT WOULD IT MEAN FOR UK ENERGY?

JUNE SPEAKER MEETING: Address to the Parliamentary Group for Energy Studies

Peter Atherton, Head of Equity Research – Utilities, Liberum Capital also contributed to this speaker meeting.

Peter leads the Utility Equity Research team at Liberum Capital. Before this he spent more than a decade as Head of the European Utility Research Team at Citigroup. He has also had stints at the National Grid and on the Central Electricity Generating Board.

HOUSE OF LORDS ANNUAL DINNER

The Group's Annual Dinner was held on the House of Lords Terrace on Wednesday 2nd April 2014. The dinner was a great success, and we were delighted to welcome the Secretary of State for Energy and Climate Change, The Rt Hon Ed Davey MP, as our Guest of Honour for the second year running.

The event was made possible through the kind support of Costain.

Alistair Smith, Costain; Claire Baker, Costain; Ian Liddell-Grainger MP, Chairman, PGES; Furah Naeem, Costain; Darren James, Costain; The Rt Hon Ed Davey MP, Secretary of State for Energy and Climate Change; Robert Ingram, Costain; Andrew Roper, Costain; David Cassar, Costain; Ian Graves, Costain; Sean Murphy, Costain

Ann Robinson, uSwitch; Paul Needley, Enertek

Claire Nequest, Enertek; Kirsty Lambert, EnerG Switch2

Ken Fergusson, David Kilpatrick and Derry Carr from the Combustion Engineering Association

David Cassar, Costain; Robert Ingram, Costain; Claire Baker, Costain; The Lord Boswell of Aynho; Andrew Roper, Costain

HOUSE OF COMMONS ANNUAL RECEPTION

The Group's Annual Reception was held on the House of Commons Terrace on Tuesday 8th July 2014. Our Guest of Honour, the Director General for International, Science and Resilience at DECC, Katrina Williams, delivered a keynote speech before taking questions from the floor.

Ian Marchant FEI, President of the Energy Institute, also addressed guests, and introduced a special "Happy Birthday" video message from HRH The Prince of Wales.

Ian Liddell-Grainger MP, Chairman, PGES; Katrina Williams, DECC; Ian Marchant FEI, Energy Institute; Louise Kingham OBE FEI, Chief Executive, Energy Institute.

Walt Patterson FEI, Chatham House; Judith Ward, Sustainability First; Andrew Warren FEI, Association for the Conservation of Energy

Sponsors of this year's Annual Reception, the Energy Institute, celebrated their centenary year

Natalia Salamon; Rose Atkinson GradEI; Dr Dina Bayasanova GradEI and Hazel Clyne - all representatives of the EI Young Professionals Network

Ken Fergusson, Combustion Engineering Association; Andrew George MP

Paul Taylor, Taylor Keogh; Mike Harrison, Taylor Keogh; David Jefferies CBE, Executive Council, PGES

EXTRACT FROM THE QUEEN'S SPEECH

Her Majesty's most gracious speech to both Houses of Parliament at the State Opening of Parliament, 4th June 2014

My Government's legislative programme will continue to deliver on its long-term plan to build a stronger economy and a fairer society.

My ministers will implement measures to increase further the personal allowance and to freeze fuel duty.

Legislation will be introduced to help make the United Kingdom the most attractive place to start, finance and grow a business. The bill will support small businesses by cutting bureaucracy and enabling them to access finance.

New legislation will require ministers to set and report on a deregulation target for each Parliament. The legislation will also reduce delays in employment tribunals, improve the fairness of contracts for low paid workers and establish a public register of company beneficial ownership.

My government will introduce a bill to bolster investment in infrastructure and reform planning law to improve economic competitiveness. The bill will enhance the United Kingdom's energy independence and security by opening up access to shale and geothermal sites and maximising North Sea resources.

Legislation will allow for the creation of an allowable solutions scheme to enable all new homes to be built to a zero carbon standard and will guarantee long-term investment in the road network.

My government will continue to implement major reforms to the electricity market and reduce the use of plastic carrier bags to help protect the environment.

My government will continue to deliver the best schools and skills for young people. In England, my ministers will help more schools to become academies and support more free schools to open, whilst continuing investment to deliver more school places. Further reforms to GCSEs and A Levels will be taken forward to raise standards in schools and prepare school pupils for employment. My government will increase the total number of apprenticeship places to 2 million by the end of the Parliament.

ENERGY FOCUS SPONSORED FEATURE

SUSTAINABLE SOLUTIONS IN ENERGY

Ian Graves, Power Director at Costain, looks at decarbonisation, energy storage and encouraging efficiencies

While there has been fierce debate over the years about what the concept of sustainability actually means, we find that for many of our stakeholders it is increasingly clear.

They are looking for sustainable solutions that ensure long-term viability through meeting economic, environmental and social challenges. At Costain we employ our leading-edge engineering skills to embed sustainability in everything we do.

The sector is actively working to meet three closely-linked objectives:

- Maintain security of supply: keeping the lights on.
- Decarbonise the energy grid: to minimise the impact of climate change.
- Ensure affordability of supply: for business as well as consumers.

Finding balance between these objectives is difficult because of the complex energy equation, which encompasses generation, transmission and distribution and demand management.

Generation

The UK Government has set challenging targets, including the reduction of carbon emissions by 80% by 2050. Shorter-term, the target is to have almost 15% of energy delivered from renewable sources by 2020.

Key to this is reform of the electricity market. Costain is actively working in all three areas of decarbonisation, energy storage and encouraging efficiencies.

1. Decarbonisation. Innovation is beginning to provide some answers:

- Carbon capture and storage (CCS) - We are working on a project (with some of the UK's top universities) which will help make CCS more affordable, including one which aims to develop a carbon capture pilot plant capable of capturing 95% of CO2 emissions.
- Offshore wind farms - We are partners in a joint venture which has devised a new form of turbine base which avoids the need for specialists and expensive marine equipment.
- Tidal - We are working with a customer to develop a tidal lagoon project in the UK.

2. Storage. The success of many renewable technologies (such as wind power) depends on being able to store the resulting energy. Some ground-breaking technologies are emerging, including the use of liquefied air or liquid nitrogen as a storage medium. But more investment is critical. Costain is working with three UK SMEs to support this development.

3. Encouraging efficiencies. Our customers recognise the need to upgrade and extend the life of existing plant. Costain is adopting new processes and flexible working arrangements, as well as optimising current plant performance for our customers.

Transmission and distribution

Assets need to be replaced in the UK's ageing transmission and distribution system but it also needs to evolve into a more 'dynamic' network, capable of managing increased interconnection as well as new forms of generation.

We see the beginnings of a more sustainable solution with the introduction of 'smart' grids which will be reliable, efficient and sustainable. Smart metering will assist in unlocking this potential.

Demand-side management

If we wish to continue to develop a modern economy there needs to be an equal focus on reducing the energy we use. There are a number of interesting developments, including grid balancing services, also known as demand response. Our new COdemand venture is an example of where new revenues can be unlocked through a smart approach to managing energy loads. We look forward to sharing this with more customers soon.

None of this will be easy, of course. But we are excited about the potential these and other innovative developments have, to solve the UK's energy challenges.

For more information email: power@costain.com
Follow us on Twitter: @CostainGroup

DEPARTMENTAL STATEMENTS

Written and Oral Statements from the Department for Energy and Climate Change – 3rd April 2014 to 8th August 2014

Written Ministerial Statement on Scottish independence

9th April 2014 – Ed Davey MP announced the publication of the Government's 12th paper in the Scotland Analysis Programme. The paper concluded that the current single market has underpinned the success of the Scottish energy industry.

Written Ministerial Statement on the UK downstream oil sector

9th April 2014 – Michael Fallon MP announced the publication of the Department's review into the role of the UK's refining and fuel import sectors, in which it set out its support for the establishment of an industry-owned and operated central stocking entity in the UK.

Written Ministerial Statement on new energy investments

5th June 2014 – Michael Fallon MP announced that eight major renewable electricity projects had signed the first contracts under the Government's electricity market reforms.

Written Ministerial Statement on the underground drilling access consultation

5th June 2014 – Michael Fallon MP announced that the Government had published a consultation on proposals to reform the procedure for securing underground access to oil or gas deposits and geothermal energy. This formed part of the Government's ongoing work to consider whether the legislative environment allows the fledgling shale gas and geothermal energy industries to fulfil their potential.

Written Ministerial Statement on the agenda for June's environment council

12th June 2014 – Ed Davey MP talked through the items on the agenda for the EU Environment Council in Luxemburg on 12th June. These included an exchange of views on the Commission's air quality package both on Medium Combustion Plants and National Emission Ceilings Directives, and the Commission Proposal regarding the possibility for Member States to restrict or prohibit the cultivation of Genetically Modified Organisms (GMOs) in their territory.

Written Ministerial Statement on the agenda for June's EU Energy Council

12th June 2014 – Ed Davey MP outlined the agenda of issues to be discussed in Luxembourg. Among them were the Greek Presidency's proposal to amend the Renewable Energy Directive and the Directive relating to the quality of petrol and diesel fuels – with the Secretary of State declaring that the UK "welcomes the Greek efforts to find a compromise".

Written Ministerial Statement on discussions at June's EU Energy Council

25th June 2014 – Ed Davey MP reported on discussions at the Energy Council in Luxemburg. The UK and several member states voted in favour of the Greek Presidency's compromise, but expressed disappointment that the agreement lacked ambition. The Secretary of State also proposed that the Council should focus on short-term measures to address energy security and to prepare for potential disruptions this winter, and called for decisions on energy security and the 2030 climate and energy framework to be taken in parallel by the European Council.

Written Ministerial Statement on the management of overseas-owned plutonium in the UK

3rd July 2014 – Michael Fallon MP announced that the Government had agreed to the Nuclear Decommissioning Authority (NDA) taking ownership of around 800kg of plutonium previously owned by a Swedish utility company, and of around 140kg previously owned by a German research organisation.

Written Ministerial Statement on the Fourth Carbon Budget

22nd July 2014 – Ed Davey MP announced that the Government will not be amending the Fourth Carbon Budget. He said the decision is consistent with the advice of the Committee on Climate Change, and reflects the views of the vast majority of businesses, investors and environmental groups.

Written Ministerial Statement on the future fuel poverty framework

22nd July 2014 – Ed Davey MP confirmed the Government was laying draft regulations before

Parliament to put in place a new long-term fuel poverty target. He also announced that DECC had published the results of the first Triennial Review of the Fuel Poverty Advisory Group for England (FPAG).

Written Ministerial Statement on the White Paper on geological disposal

24th July 2014 – Ed Davey MP announced the publication of a White Paper on implementing geological disposal of higher activity radioactive waste. He reiterated that the Government remains committed to geological disposal as the right policy for the long-term, safe and secure management of higher activity radioactive waste.

Written Statement on the outcome of the Strategic Environmental Assessment (SEA) for further onshore licensing

28th July 2014 – Baroness Verma said the Coalition Government believes that shale gas has the potential to provide the UK with greater energy security, growth and jobs. Responses to the Report, however, did not generally support the Licensing Plan it outlined, indicating strong support for the exclusion from licensing of environmentally sensitive sites. She announced that the Licensing Plan will be adopted, but subject to the mitigation measures proposed in the Report.

Written and Oral Statements from the Department for Communities and Local Government

Written Ministerial Statement on planning for unconventional oil and gas

28th July 2014 – Lord Ahmad of Wimbledon said the Government had amended regulations to streamline notification requirements and the calculation of fees, to speed up the determination of planning applications essential to the production of unconventional oil and gas. He said that other regulators, including DECC, the Environment Agency and the Health and Safety Executive will address sub-surface issues to protect against seismic disturbance or pollution of groundwater. Lord Ahmad also announced that the Government's position on the recovery of appeals will be reviewed in July 2014.

Written Ministerial Statement on local planning and renewable energy developments

9th April 2014 – Eric Pickles MP announced that the temporary change to the appeals recovery criteria announced in October 2013 will be extended for a further 12 months, after the initial changes had reversed the trend which had seen more appeals being approved than dismissed. He added that every case should be considered on its individual merits in light of local circumstances and the material planning considerations.

PARLIAMENTARY RECORD

SELECT COMMITTEES: REPORTS AND ENQUIRIES

3rd April 2014 to 8th August 2014

House of Commons

Business, Innovation and Skills Committee

Extractive Industries Sector

6th May 2014 – The Committee took evidence from Dr Patrick Foster, Senior Lecturer in Mining Engineering at the Camborne School of Mines, the University of Exeter, and Dean Thornewell and Paul Burton of Joy Mining Machinery.

5th June 2014 – The Committee took evidence from Jenny Willott MP, Parliamentary Under Secretary of State for Employment Relations and Consumer Affairs at BIS.

The Implications of Scottish Independence

8th August 2014 – The Committee published its report, which argued that a "Yes" vote could leave Scottish businesses uncertain of their position in Europe. The Committee also raised serious concerns that a 'Yes' vote may also leave Scotland facing a currency 'limbo' and in the short term, unable to join a sterling currency union and without the prospect of adopting the Euro.

Energy and Climate Change Committee

Inquiry into Carbon Capture and Storage

21st May 2014 – The Committee published its report, urging Government to fast-track final funding decision on two pilot CCS projects at Peterhead and Drax by early 2015, after years of delay in the "competition" launched to provide initial capital support for the industry.

Inquiry into Electricity Demand-Side Measures

18th June 2014 – The Committee called for evidence to inform its scrutiny of the Government's current Demand-Side Response (DSR) and Electricity Demand Reduction (EDR) policies. Key questions included the role of the National Grid's new Demand-Side Balancing Reserve (DSBR), and potential problems with the proposed Capacity Mechanism (CM) Transitional Arrangements (TA).

Inquiry into the Future of UK Deep Coal Mining

2nd July 2014 – The Committee took evidence from the Hatfield Colliery, PGES members the Association of UK Coal Importers, and the Confederation of UK Coal Producers. A later session heard from the National Union of Mineworkers and the TUC.

Inquiry into Low Carbon Innovation

4th August 2014 – The Committee published its report, accusing the Government of "punching below its weight" when it comes to support for UK businesses developing innovative low carbon technologies such as smart meters, heat pumps and renewable energy technologies.

Inquiry into the IPCC 5th Assessment Review

29th July 2014 – The Committee's report concluded that the Intergovernmental Panel on Climate Change's (IPCC) processes are robust, with the

IPCC having responded extremely well to constructive criticism in the last few years. The Committee concluded the IPCC had tightened its review processes, making its Fifth Assessment Report (AR5) the most exhaustive and heavily scrutinised Assessment Report to-date.

Inquiry into the Green Deal: Watching Brief

25th April 2014 – The Committee took evidence from representatives of large energy companies: British Gas, ScottishPower and RWE npower.

1st May 2014 – The Committee focused specifically on public awareness and communication of the Green Deal, taking evidence from Calor Gas, Action with Communities in Rural England, the Committee on Climate Change, Edge, and the University of Oxford.

17th June 2014 – The Committee took evidence from representatives of the Green Deal Oversight and Registration Body, Ofgem and the Green Deal Finance Company. In a later session the Committee heard the Rt Hon Gregory Barker MP, Minister of State for Energy and Climate Change, as well as members of the Household Energy Efficiency team.

Inquiry into Network Costs

26th June 2014 – The first evidence session looked at how network costs are calculated, their impact on residential and business consumers, and losses and leakages in transmission. Oral evidence was taken from British Gas, UK Power Networks, Citizens Advice Bureau and, in a later session, First Utility, Haven Power and RES.

Inquiry into Small Nuclear Power

19th June 2014 – The Committee heard from representatives of the Thorium Energy Association, the Dalton Nuclear Institute, the Centre for Low Carbon Futures, Rolls Royce, the Energy Technologies Institute and the Nuclear Industry Association.

8th July 2014 – The second evidence session featured witnesses from Generation mPower LLC, NuScale Power LLC, GE-Hitachi Nuclear Energy, the National Nuclear Laboratory and the Nuclear Innovation and Research Advisory Board.

22nd July 2014 – The session looked at the more specific issues of regulatory assessment, internal collaboration, the siting of small reactors and reuse of spent fuels with representatives from the Office for Nuclear Regulation and Nuclear Decommissioning Authority.

Environment, Food and Rural Affairs Committee

Inquiry into Defra's Responsibility for Fracking

14th July 2014 – The Committee announced it would hold a one-off oral evidence session, scheduled for 10th September 2014. Secretary of State Liz Truss MP will give evidence.

Environmental Audit Committee

Inquiry into an Environmental Scorecard

4th July 2014 – The first evidence session heard from conservation organisations the Aldersgate Group, the RSPB, the Wildlife Trusts, the WWF and the Wildfowl and Wetlands Trust.

16th July 2014 – The Committee heard from Dan Rogerson MP, Parliamentary Under-Secretary of State for water, forestry, rural affairs and resource management at Defra.

Inquiry into Climate Change Adaptation

9th July 2014 – The Committee announced the inquiry, which will examine the progress on preparations in England for adapting to the impact of climate change. Written submissions were still being accepted when Energy Focus went to print, with an initial oral evidence session not yet fixed.

Science and Technology Committee (Commons)

Inquiry into Climate: Public Understanding and its Policy Implications

23rd June 2014 – The Committee received the Government's response to its report, "Communicating Climate Science", which was published on 2nd April 2014. The Government said it believes that in order to clearly communicate about climate change it is necessary to talk about both climate change science and also the actions, at home and abroad, it is taking to address climate change.

Welsh Affairs Committee

Inquiry into Energy Generation in Wales: Shale Gas

16th June 2014 – The Committee published its report, which argued that the significant opportunity represented by shale gas in Wales should not be realised at the expense of Wales' natural environment. The authors argued that both the UK and Welsh Governments must consider environmental risks, including the traffic and noise caused by commercial shale gas operations, as well as the visual impact and other environmental risks associated with fracking.

House of Lords

Economic Affairs Committee

Inquiry into the Economic Impact on UK Energy Policy of Shale Gas and Oil

8th May 2014 – The Committee published its report, recommending that the Prime Minister establish a new Committee or Sub-Committee of the Cabinet, chaired by the Chancellor, dedicated to ensuring that his commitment to "go all out for shale" is matched by action. Part of this action should include streamlining the "unwieldy regulatory structure", to make it "effective as well as rigorous".

9th July 2014 – The Government responded to the Committee's report, reaffirming its commitment "to making the most of the opportunity presented by shale", but acknowledging that "development and production will take time".

EU Sub-Committee of External Affairs

Inquiry into EU relations with Russia

9th July 2014 – The Committee announced the Inquiry, against a backdrop of growing unrest in the Ukraine. Subjects to be covered included commercial relations between Russia and the EU, and how they sit alongside the EU's political and strategic goals.

10th July 2014 – The Committee heard from Dr Lilia Shevtsova, Chair of the Russian Domestic Politics and Political Institutions Program at the Carnegie Moscow Center [sic.] (via video-link)

16th July 2014 – The second evidence session focused more strongly on the wider geopolitical context of strained EU- Russia relationships. Evidence was taken from representatives of the Centre for European Reform and the Eurasia Group.

24th July 2014 – The Committee heard from former British ambassador to Russia Sir Tony Brenton KCMG and Mr John Lough, Associate Fellow at Chatham House.

Science and Technology Committee

Inquiry into Resilience of Electricity Infrastructure

21st July 2014 – The Committee launched the Inquiry, which will investigate whether there will be enough electricity to meet demand as the UK reaches a critical pinch point over the two coming winters. The Committee will look at whether Government policies will be effective in "keeping the lights on" in the short term and through to 2030. Written evidence should be submitted by Friday 19th September 2014.

Inquiry into Waste Opportunities: Stimulating a Bioeconomy

18th June 2014 – The Committee welcomed the Government's response to its report "Waste or resource? Stimulating a bioeconomy" (published March 2014). The Government embraced the report's central recommendations of creating a long-term plan for a high-value bioeconomy, led by a Waste Champion charged with developing a comprehensive "brass from muck" bioecconomy.

PARLIAMENTARY ORAL QUESTIONS AND DEBATES

House of Commons

Energy markets (competition)
Ann McKechin MP (Lab, Glasgow North)
3rd April 2014, Col981

Energy-intensive industries
Margot James MP (Con, Stourbridge)
3rd April 2014, Col986

Energy bills
Gavin Shuker (Lab, Co-op, Luton South)
3rd April 2014, Col987

Ofgem
Graham Stringer MP (Lab, Blackley and Broughton)
3rd April 2014, Col990

Energy supply
Mel Stride MP (Con, Central Devon)
3rd April 2014, Col991

Energy efficiency
Siobhain McDonagh MP (Lab, Mitcham and Morden)
3rd April 2014, Col993

Renewables
Graeme Morrice MP (Lab, Livingston)
3rd April 2014, Col995

Energy prices
Mel Stride MP (Con, Central Devon)
3rd April 2014, Col995

Air pollution/Energy security
Mike Gapes MP (Lab, Co-op, Ilford South)
3rd April 2014, Col995

Onshore wind
Julie Elliott MP (Lab, Sunderland Central)
3rd April 2014, Col996

Energy security
Mike Thornton MP (LD, Eastleigh)
3rd April 2014, Col996

Renewable Obligation
John Healey MP (Lab, Wentworth and Dearne)
3rd April 2014, Col996

Fuel poverty
Andy Slaughter MP (Lab, Hammersmith)
3rd April 2014, Col997

Green Deal
Mike Kane MP (Lab, Wythenshawe and Sale East)
3rd April 2014, Col998

Renewable electricity
Duncan Hames MP (Lab, Chippenham)
3rd April 2014, Col999

Coal industry
Ian Lavery MP (Lab, Wansbeck)
3rd April 2014, Col1010

Coal
Grahame M. Morris MP (Lab, Easington)
3rd April 2014, Col1012

Energy investment
Catherine McKinnell MP (Lab, Newcastle upon Tyne)
3rd April 2014, Col1011

Energy-intensive industries
Paul Maynard MP (Con, Blackpool North and Cleveleys)
10th April 2014, Col408

Energy
John Robertson MP (Lab, Glasgow North West)
10th April 2014, Col412

Fuel duty
Jeremy Lefroy (Con, Stafford)
29th April 2014, Col679

Cost of living
Simon Wright MP (LD, Norwich South)
29th April 2014, Col690

Wind power
Mark Lazarowicz MP (Lab, Co-op, Edinburgh North and Leith)
30th April 2014, Col823

Nuclear power
Mark Hendrick MP (Lab, Co-op, Preston)
30th April 2014, Col824

Energy bills
John Robertson MP (Lab, Glasgow North West)
7th May 2014, Col136

Hinkley Point
Ian Liddell-Grainger MP (Con, Bridgwater and West Somerset)
8th May 2014, Col289

Cost of living: energy and housing
Ed Davey MP (LD, Kingston and Surbiton)
5th June 2014, Col134

Solar farms
Julian Sturdy MP (Con, York Outer)
12th June 2014, Col678

Energy prices
Caroline Flint MP (Lab, Don Valley)
18th June 2014, Col1185

Energy efficiency
Graham Jones MP (Lab, Hyndburn)
19th June 2014, Col1247

Carbon and renewables targets
David Mowat MP (Con, Warrington South)
19th June 2014, Col1245

Low-carbon electricity projects
Dr Julian Huppert MP (LD, Cambridge)
19th June 2014, Col1248

Shale gas
Priti Patel MP (Con, Witham)
19th June 2014, Col1249

Energy markets (competition)
Anne McGuire MP (Lab, Stirling)
19th June 2014, Col1250

Solar PV
Kelvin Hopkins MP (Lab, Luton North)
19th June 2014, Col1254

Renewable heating systems
Oliver Colvile MP (Con, Plymouth, Sutton and Devonport)
19th June 2014, Col1256

Energy security
Andrew Gwynne MP (Lab, Denton and Reddish)
19th June 2014, Col1257

Biomass
Nigel Adams MP (Con, Selby and Ainsty)
19th June 2014, Col1258

Energy-intensive industries
David Mowat MP (Con, Warrington South)
26th June 2014, Col455

Energy (Independence)
David Mowat MP (Con, Warrington South)
2nd July 2014, Col879

Rural paper industry
Iain McKenzie MP (Lab, Inverclyde)
2nd July 2014, Col259WH

Wylfa Nuclear Power Station
David Mowat MP (Con, Warrington South)
9th July 2014, Col276

Navitus Bay Wind Farm
Conor Burns MP (Con, Bournemouth West)
9th July 2014, Col405

Oil and Gas Industry
Sir Robert Smith MP (LD, West Aberdeenshire and Kincardine)
16th July 2014, Col858

Fracking
Stephen O'Brien MP (Con, Eddisbury)
16th July 2014, Col859

House of Lords

Climate change
Lord Harris of Pentregarth
3rd April 2014, Col1034

Climate change: Extreme weather
Lord Judd
9th April 2014, Col1298

Russian gas
Lord Higgins
8th May 2014, Col1576

Renewable Heat Incentive Scheme (Amendment) Regulations 2014
Baroness Verma
12th May 2014, ColGC428

Climate change
Lord Dykes
13th May 2014, Col1756

Climate change
Lord Judd
17th June 2014, Col719

Green Deal (Qualifying Energy Improvements) (Amendment) Order 2014
Baroness Verma
16th July 2014, ColGC249

Fuel poverty
Lord Ezra
17th July 2014, Col693

Electricity Capacity Regulations 2014
Baroness Verma
24th July 2014, Col GC509

Renewables Obligation Closure Order 2014
Baroness Verma
24th July 2014, GC539

Energy Companies Obligation
Lord Bourne of Aberystwyth
30th July 2014, Col WA315

Energy: Conservation
Lord Bourne of Aberystwyth
30th July 2014, Col WA316

Energy Companies Obligation
Lord Bourne of Aberystwyth
11th August 2014, HL1251

LEGISLATION

3rd April 2014 to 8th August 2014

Private Members' Bills

Department of Energy and Climate Change (Abolition) Bill 2014-15
Robert Halfon MP
(Con, Harlow)

Commons

First reading
7th July 2014

Second reading
6th March 2015

Control of Offshore Wind Turbines Bill 2014-15
Christopher Chope MP
(Con, Christchurch)

Commons

First reading
2nd July 2014

Second reading
16th January 2015

Energy (Buildings and Reduction of Fuel Use) Bill 2014-15
Dr Alan Whitehead MP
(Lab, Southampton Test)

Commons

First reading
21st July 2014

Second reading
12th September 2014

Houses in Multiple Occupation (Energy Performance Certificates and Minimum Energy Efficiency Standards) Bill 2014-15
Dr Alan Whitehead MP
(Lab, Southampton Test)

Commons

First reading
21st July 2014

Second reading
12th September 2014

A LOOK AHEAD

With summer rapidly drawing to a close and the warm weather almost a distant memory, what does autumn hold?

Well first, in September the Party machines start creaking into gear for the conference season, and energy fringe events appear to be still firmly on the agenda. There is sure to be plenty of discussion around the looming Statutory Instruments attached to the Energy Bill still to be implemented, as well as whether the Contracts for Difference auctions in October will prove fruitful for the established technologies energy market.

And of course there will be the ongoing investigation into the 'Big Six' by the Competition and Markets Authority (CMA) - including any response to the challenge submissions over the CMAs approach. It's a fight which is unlikely to end there.

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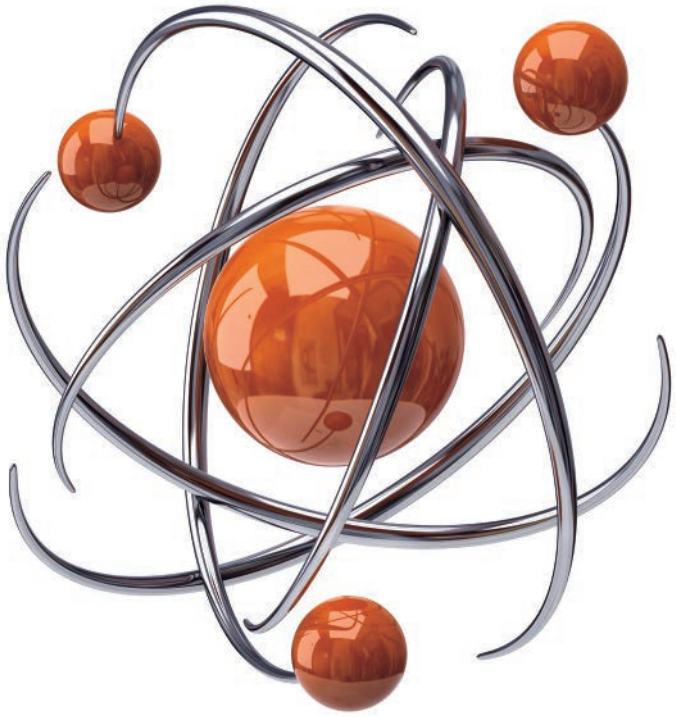

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