THE ENERGY CRUNCH
Will decreasing capacity in UK energy cause the lights to go out?
FOREWORD BY ANGUS WALKER

Welcome to our report on the ‘Energy Crunch’. Many commentators have expressed concerns that as old electricity generation comes offline, new projects are not keeping pace and this is likely to result in a shortfall between supply and demand, which is what we and others are calling the energy crunch.

Are their fears justified? We have carried out research to establish the hard facts about the loss of generation and the rate at which new projects are coming on stream. We have also polled a sample of the general public and of businesses to find out their awareness of the possibility of an energy crunch and whether they are taking any steps to prepare for it. Finally, we have interviewed a number of industry experts for their views on this very topical issue – thank you to those who took the time and effort to contribute, their opinions have helped form a deeper understanding of the issues from a supplier, charity, governance and legal perspective.

Energy security is something we have taken for granted so far, and for our economy to thrive it is something that businesses and individuals ought to continue to take for granted. We think that there are few issues of such importance to the economy and we have therefore sought to add clarity and impetus to the debate with well-researched facts, coupled with leading opinions and views in one concise document. Of course the facts will change over time as energy policy changes, new crises hit generation or lift just as suddenly, and demand fluctuates, but having this snapshot of the position in 2016 will provide a valuable marker as we go forwards.

Even though our conclusions are that an energy crunch will happen on current projections, that is no cause for panic. There is still time for the government to take the necessary measures to smooth peaks in demand and further incentivise projects that will increase supply without affecting climate change. With our excellent track record and leadership in infrastructure planning, we are willing and able to help achieve the authorisation of a multitude of electricity generation projects of different types that will head off the energy crunch and ensure that the lights stay on into the future.

I hope you find the report interesting and useful, and that it stimulates more debate and ultimately action on this vital issue affecting the UK.

Yours sincerely

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KEY FINDINGS

CONSUMER SURVEY RESULTS

Consumers who think a shortage of electricity supply is likely in the next

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<th>Duration</th>
<th>12 months</th>
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<th>5 years</th>
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<td>%</td>
<td>13%</td>
<td>25%</td>
<td>36%</td>
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The main factor that would encourage consumers to reduce the amount of electricity they use

- The potential cost-saving
- Knowing that I am helping to protect the environment
- More information on solutions to saving energy
- The threat of power cut to your home

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Awareness of Government energy efficiency measure amongst energy consumers

- Smart Meters: 68%
- Green Deal Home Improvement Fund: 23%
- Feed-in Tariffs: 16%
- Warm Homes Discount: 20%
BUSINESS SURVEY RESULTS

Of most concern to businesses in the event of a power cut

- Loss of earnings: 39%
- Business interruption: 34%
- Security of their premises or equipment: 18%

Level of energy consumption

- Increase in energy use: 46%
- Decrease in energy use: 21%
- Same: 33%

Businesses surveyed

- Aware of a potential energy shortage in the next five years: 60%
- Have contingency plans in case of electricity shortages or power cuts: 55%

Government initiatives

- 70% aware of Government initiatives
- 89% do not use Government initiatives
NEW POWER STATIONS AND RENEWABLE ENERGY

On average, it takes 16-17 months for new developments to obtain consent. The total capacity of the 18 consented and progressing or constructed power stations is 17,489MW. This means that even if all the power stations and renewable energy developments that have consent and funding are built and operational by 2025, there will still be 18,615MW less capacity than previously available to the Grid.

Since 2011, 22 new power stations of over 50MW capacity have been granted consent

- Just one of these projects is now fully operational
- Only two of the projects are under construction
- Work on four projects has stopped due to the withdrawal of investment and/or not securing a contract under the Capacity Market Auction
- The other 15 have not yet entered construction phase

POWER STATION CLOSURES

- 84,987MW current total electricity capacity in the UK of all generators, meaning the closures are a 14% reduction in capacity
- 6,827MW capacity will be lost due to planned station closures up to the year 2020
- 13,767MW capacity to the National Grid has been lost due to the closure of 18 major power stations since 2012
- 18,009MW capacity will be lost due to planned station closures beyond 2020
- 38,603MW capacity will be lost in total, just over 30% of our current electricity capacity between 2012 and 2030

Businesses were broadly against compulsory measures

- 34% think the Government should implement compulsory business contingency plans for power cuts
- 29% think the Government should implement compulsory energy efficiency measures for businesses
The UK is on the brink of an energy crunch. The margin between supply of electricity and demand is narrowing and it is now at its lowest level in eight years. The winter of 2015-16 has been tight – with emergency measures activated to keep the lights on – but the winter of 2016-17 is expected to be tighter still.

And, in addition to the immediate issue of whether we will have enough power to keep the lights on, there are concerns about the lack of clarity on the UK’s future energy mix. It is crunch time for the Government to decide where our future energy supply will come from and to put policies in place now that will encourage the investment needed to deliver it.

CURRENT SUPPLY
The total electricity capacity in the UK of all generators is currently 84,987MW. That is down from almost 100,000MW four years ago, as a result of 18 major power stations closing and taking 13,767MW off the Grid. To put this into context, 1,000MW would supply electricity to around a million homes.

Looking to the future planned station closures over the next five years – up to the year 2020 – there will be a further loss of 6,827MW and much of this is taking place sooner than originally expected. In 2015 it was announced that Longannet in Fife, Eggborough in North Yorkshire and the remaining section of Ferrybridge in West Yorkshire, will all close in March 2016. The combined closure of these three stations will result in the loss of over 5,000MW. These sooner than planned closure dates have been blamed on the uneconomical conditions for providing electricity to the Grid which is generated by coal-fire.

Beyond that, between 2020 and 2030 – the date by which all coal plants will shut – an additional 18,009MW will be lost, raising serious concerns about what – realistically – will be built in time to replace the coal power stations we are losing.

LIGHTS OUT?
The reduction in electricity capacity has started to ring alarm bells. National Grid warned ahead of winter 2015-16 that spare capacity had dropped to 1.2%, rising to 5.1% as a consequence of the additional measures it had to introduce. What is more worrying is that spare capacity is expected to drop even lower for the 2016-17 winter, by which time three of the largest power stations will have closed, reducing capacity by a further 6%. This has prompted National Grid to offer one of
power stations – Eggborough – a Supplemental Balancing Reserve contract to provide emergency power during next winter, an offer the station is still considering.

In an interview for this report, Brian Galloway, Chief Compliance Officer at Scottish Power, explained ‘Scottish Power does not envisage a scenario in which the lights actually go out, however National Grid will need to use all of the tools and options at its disposal to ensure that doesn’t happen. It is a far from ideal situation. Managing next winter (2016-2017) could be very challenging – Longannet and over half of Eggborough are scheduled to close, which could mean we lose 4% of current firm MW GB capacity. A cold winter would exacerbate the situation.’

Lawrence Slade of Energy UK agrees that next year will be tight, but he does not think we will see the lights go out, ‘The last thing you want as a politician is for the lights to go off on your watch’, he commented, a theme picked up by Philip Garner, the Director General of the Confederation of UK Coal Producers (CoalPro): ‘We have a Conservative Government in power and the last Government to be in charge when the lights went out was a Conservative Government and they took a long time to recover from it. So the lights will stay on for the next five years by hook or by crook. But the methodology of how they ensure the lights stay on – by asking industry to turn off at peak times, possibly paying people to switch off, and the use of diesel generators – will result in price spikes.’

We have already seen emergency measures implemented for the winter of 2015-16. On 4 November 2015, National Grid had to issue a Notification of Inadequate System Margin and implement the Demand Side Balancing Reserve system – the first time it had used these ‘last resort’ measures to prevent the lights going out. To keep the lights on it was also forced to pay up to a staggering £2,500 per megawatt hour for electricity on that day compared with the typical price of around £60 per megawatt hour – a price spike of over 4,000%.

But there is a seemingly low level of awareness of this issue amongst consumers – just 25% are aware of a potential energy shortage in the next three years, despite the potential impact it may have on their day-to-day lives. ‘Energy, electricity in particular, is an essential service’, comments Peter Smith, Head of Policy and Research at National Energy Action. ‘Lack of affordable and readily available supply can be as bad as life and death. Those households reliant on medical devices, such as dialysis or breathing machines, will be at serious risk if there are increasingly frequent power cuts.’ Smith also highlighted the less obvious knock-on effects of blackouts, such as those households reliant on electricity for heating their homes, commenting ‘this doesn’t just impact on essential appliances, but keeping homes warm, on hot water and therefore hygiene – and a lack of both causes hospital admissions.’

...THE SUPPLY SHORTAGE WILL HAVE A MASSIVE IMPACT ON COST FOR CONSUMERS...

And what about the impact the capacity shortage will have on the cost of electricity and fuel poverty? ‘Unless capacity shortages are offset by massive improvements in energy efficiency, and importantly, investment in schemes to help energy efficiency, the supply shortage will have a massive impact on cost for consumers. I question whether households, especially low income ones already affected by fuel poverty, can respond without further support to pay for the upfront costs of these measures,’ Smith warns.

Philip Garner highlights the repercussions this could have for wider energy costs. ‘The cost of electricity will rise and will be spectacularly high in winter if central and northern Europe has severe weather. But the cost of electricity is just one aspect. We must consider that if we are using more gas for electricity generation that will also put up the price of gas to heat homes. Business productivity may suffer and energy will become less affordable.’
Businesses, however, are aware of the potential impacts of a shortage of supply and what it might mean for interruption and productivity. Over half of the businesses we surveyed (58%) are aware of a possible energy shortage in the next five years and two thirds (66%) have contingency plans in place in case of electricity shortage or power cuts. Their biggest concerns are that power cuts will cause business interruption and loss of earnings, as well as put at risk the security of their premises or equipment.

**REPLACING COAL**

At a speech in November 2015 Energy Secretary, Rt Hon Amber Rudd MP, announced that all coal-fired power stations will close by 2025, provided there is sufficient alternative capacity to take their place. In reality – and as has been seen by the announcements regarding the imminent closures of Longannet, Eggborough and Ferrybridge – the vast majority are likely to close much sooner than that.

...THE CUTS MADE, PARTICULARLY TO RENEWABLES, HAVE BEEN DRASTIC AND SUDDEN... The cost of the regulations imposed mean that it is increasingly untenable for energy companies to continue operating coal-fired power stations. As Philip Garner from CoalPro explains, ‘If Government policies continue as they currently stand, then without carbon capture and storage, coal power generation plants will close much sooner than the Government’s expectation.’

This was clear in the announcement by Eggborough Power Limited regarding the closing of the station. It cited a perfect storm of policies, including the continued high carbon tax, the changes to the Capacity Market, the bidding rules for the Government’s Supplemental Balancing Reserve, and uncertainty around environmental permits. All of which combined had created an unsustainable financial position for the station to continue operating.

But what about the new power generation facilities that are needed to replace the electricity currently provided by coal? 22 new power generation facilities of over 50MW capacity have been granted development consent since 2011. However just one of these – the extension to the Kentish Flats offshore wind farm – is now built and fully operational; and only two others have entered the construction phase – the Rampion and Galloper offshore wind farms. The additional power generated by these two wind farms – 750MW – is a drop in the ocean compared to the 24,836MW capacity we are losing and the 13,767MW capacity that has already been lost. It is a significant concern that a relatively high proportion have been granted permission, but are currently not progressing to construction.

**MONEY, MONEY, MONEY**

Building new power stations is not cheap. From the £1.3 billion cost of constructing the 700MW Rampion wind farm to the staggering £18 billion it is predicted Hinkley Point C will cost – investment is essential if we are to replace the coal-fired power stations that are closing.

The consensus from the industry experts we interviewed is that uncertainty as to what the UK’s long-term energy policy is has put off investment. ‘There is very efficient Government policy in place to get rid of high carbon sources of energy, but very inefficient Government policy to encourage investment and development in new, low carbon sources of energy generation,’ is how Philip Garner of CoalPro assessed it.

Energy UK’s Lawrence Slade highlighted the impact of the recent mixed messages from the Department of Energy & Climate Change. ‘We have seen savage cuts to renewable support with the removal of the climate change levy and the associated impact. There have also been deep cuts to the Feed-in Tariff Scheme and it will potentially be closed. The cuts made, particularly to renewables, have been drastic and sudden. The only impact these sorts of decisions can have on investors is to undermine their confidence.’

Professor David Newbery concurred, stating ‘inconsistency and lack of clarity on energy policy’, as the reason why we have not seen the investment needed. ‘From 2001 onwards there have been a series of white papers
looking into whether we should have nuclear, renewables, capacity mechanisms etc. And now, with the change of Government, most of this has been thrown-up into the air.’

Many have felt that the short-termism of five year Governments prevents the long-term approach that is needed to ensure investment in energy infrastructure, ‘Energy policy needs to be de-politicised’, commented Professor Newbery. Angus Walker, Partner and Head of the Government and Infrastructure Department at Bircham Dyson Bell, is hopeful that the recently formed independent National Infrastructure Commission (NIC) will address this. ‘It is no exaggeration to say that the establishment of the NIC is the biggest change to the Planning Act 2008 regime since it was first enacted and a major step change in the Government’s commitment to ensuring large infrastructure projects, such as power stations, can progress without changes in Government derailing them. For energy in particular, we have seen a clear requirement placed on the NIC to report on how the UK can ensure it meets demand given that we may not have enough power stations. I hope that its recommendations, expected in the Budget this spring, will inspire the confidence investors need’, Walker comments.

Looking at the investment perspective from the European viewpoint, Ian Duncan MEP does not think it is currently satisfactory, ‘In terms of EU policies to encourage UK investment what investors need is a clear regulatory framework. Investors want confidence and a framework should encourage investment. We are not there yet in terms of a framework. Confidence is key.’

**A NEW ENERGY INFRASTRUCTURE FIT FOR THE 21ST CENTURY**

In her speech in November 2015 Amber Rudd went on to set out how the Government would deliver a new energy infrastructure fit for the 21st Century, with energy security as the priority. She specified that new gas will replace coal; there will be a new fleet of nuclear power stations; the cost of offshore wind will be reduced; and new interconnectors will make it easier to import cheaper electricity from Europe. In addition, she committed the Government to the Energy Union for Europe.

But the policies announced by the Energy Secretary – after months of mixed messages from the Government – have been met with varying levels of enthusiasm by the energy industry.

In our interview with Brian Galloway at Scottish Power, he explained the intricacies of the UK’s increased reliance on interconnectors. ‘The advantages given to energy supplied through interconnectors means that some domestic thermal generation suppliers are priced out of the market.’ This was the viewpoint shared by Energy UK’s Lawrence Slade, ‘They are not subject to UK costs so there’s an argument they could adversely affect domestic generation, so from an...
investment point of view many would say the playing field does need to be levelled.’

Their concerns are recognised by Conservative MEP Ian Duncan, ‘Do I think it is an issue? Yes, however he warns it is not a straightforward problem to resolve, ‘Commercial enterprises will work out the most profitable way to supply electricity. But we need to look at levelling the playing field.’

The Energy Union is an initiative that Mr Duncan has been a supporter of since he was elected to the European Parliament in May 2014, but his time in Brussels has challenged his confidence in it being delivered. ‘I am a passionate supporter of the principle of an Energy Union and I was very optimistic about the potential at the start of my journey. But I am troubled now. The EU Energy Grid is so important for the European Union’s move towards Energy Union, but the money for it is not materialising. We need to be told when the money for the Energy Union will be available. The Energy Union paper has more amendments than any I remember seeing before. There will be challenges if we [Europe] cannot speak in one clear and coherent voice.’

For domestic energy generation it is clear the Government’s current focus is on nuclear, gas and wind power.

The wind sector has experienced some significant setbacks under the new Government. Amber Rudd has stated that she is determined customers will not pay for green energy, but it now looks like the general public will pay for the lack of green energy.

There have been savage cuts to renewables imposed, a move Professor Newbery described as ‘ludicrous if the aim is to reach our renewables targets at the least cost to consumers’. And onshore wind in the process of being removed from the Planning Act 2008 regime for nationally significant infrastructure projects. It has now been promised that if the Government’s conditions on cost reduction in the sector are met, funding for three auctions – similar to the Capacity Market Auction, but exclusive to offshore wind power – will be made available before 2020.

Gas appears set to fare much better under this Government with the Capacity Market Auction now fully implemented. ‘Generally speaking we are happy with the Capacity Market Auction, but there are tweaks that could be made to improve it’, comments Lawrence Slade, ‘In particular the duration of contracts is an issue. Companies should have longer contracts in the Capacity Market Auction, three years instead of one, to encourage investment.’

Scottish Power’s Brian Galloway goes a step further in his criticism, questioning the design of the process and the resulting decisions: ‘The first two auctions resulted in a large number of small scale, including diesel generators being approved, ahead of large scale gas stations. We question, if this is the correct answer, are we asking the correct question? We believe that the Government should, as part of their review, consider if all technologies are competing on an appropriate level playing field... We believe that the current embedded generation market arrangements lead to an unjustified unfair advantage’.

Finally nuclear, where we saw a significant agreement reached in November 2015 between EDF Energy and China General Nuclear Power Corporation for a nuclear power plant at Hinkley Point, Somerset. It appeared at the time to be an early coup for the Government’s new energy policy, but it has since been shrouded in uncertainty as to whether EDF’s board will vote to proceed with the project. In the event that it does go ahead it will not add capacity to the Grid until 2025 at the earliest and 2033 at the latest.

It remains to be seen whether other nuclear plants will follow. Similarly, will the 15 new gas and wind power generation facilities that have received planning permission since 2011 but have not progressed to construction ever get off the ground? After significant wavering, the Government appears to finally be committing to energy policies to try to secure the UK’s electricity supply for the future. But will this instil enough confidence in the energy industry for it to invest enough to ensure that the UK’s lights do not go out?
DEMAND

Demand for electricity has slowed in the past five years with experts pointing to the recession and improved energy efficiency brought about by policy, changes in behaviour and technology upgrades. However, demand is not expected to fall further and an increasing population and developments in technology mean that there is the potential for it to grow exponentially. The easiest way to decarbonise the heating and transport sectors, if the UK is to meet its 2050 target of an 80% reduction in carbon emissions, is to use electricity to power domestic heating, cars and the other users of energy in these sectors. This will give rise to a significant increase in demand for electricity making the likelihood of an ‘energy crunch’ even greater.

...WILL WE ALL BE DRIVING HOME FROM WORK AND PLUGGING OUR CARS IN AT 7PM?...

Our business survey found that almost half of businesses are seeing their consumption of energy increase (46%). For 33% energy use is staying the same and just 21% are decreasing energy consumption.

Looking to the future, Lawrence Slade, Chief Executive of Energy UK, argues that we cannot plan future energy supply based on the recent trend of demand going down. ‘There is so much uncertainty regarding demand. For example consider the implications of wide-spread use of electric cars. One vehicle charging point – if used as expected – is the equivalent of another house being plugged into the Grid. 6,000 vehicle charging points are planned for London by 2018. This, coupled with the air quality requirements in the Capital, means that we are likely to see an increasing demand for them. This plays right to the heart of where demand is going and the challenges of peak demand – will we all be driving home from work and plugging our cars in at 7pm? How will that demand be met?’

One area where National Energy Action sees the potential for significant reductions in demand to be achieved is energy efficiency. ‘The minimum Energy Efficiency Standard target must be met by 2030 with interim targets in 2020 and 2025’, explains the Charity’s Head of Policy and Research, Peter Smith. ‘It is estimated that this will cost between £1.2 billion and £1.8 billion per annum to achieve by 2030, but many low income families are living in low efficiency homes and we think it may be even higher than that. NEA are doing all we can to ensure the Government has initiatives in place to enable the targets to be met but it will require significant investment.’ The NEA believes this should come from the public infrastructure budget.

The most widely recognised energy efficiency initiative amongst consumers is Smart Meters, with 68% of the people we surveyed familiar with the scheme. ‘The Smart Meters initiative is key to energy efficiency and innovation in energy supply and use – it is a massive complex programme’, comments Slade. ‘By 2020 every household should have one – that’s an additional 26.5 million properties.’ But a programme of this size does not come cheap. The cost is currently set at £12bn, and it is vital that this cost is kept in check to ensure consumers benefit fully.
CASE STUDY: SCOTTISH POWER

Scottish Power will close the huge Longannet power station in March 2016, despite an original planned closure date of 2020. Longannet is the UK’s second largest coal power station providing 2,260MW to the Grid – a large portion of Scotland’s energy. But high carbon taxes and transmission charges (the Company pays more to operate the station than if it was based in the South of the UK, nearer to areas of high population) make it economically unfeasible.

In an interview with the Chief Compliance Officer at Scottish Power, Brian Galloway, he explained the impact the closure of this major power station will have on the country, the likelihood and effect of a black out and the problems associated with a so called ‘black start’ – getting electricity transmitting again after a black out.

‘Security of supply is inherently political. Primarily we consider it a national issue. However, and this is clearly evident in the Scottish communities around Longannet, there is always a local dimension. Within these communities there are concerns about customer interruption, lost jobs and skills in the community.’

Speaking about the risks arising from the reduced capacity in Scotland caused by the closure of Longannet, Galloway conceded that the biggest concern is the restart of the system after a black out. ‘The worst case scenario is a total or partial shutdown of the transmission system which will require a black start. This has not happened in the UK for many years, but we have been close and there are rigorous procedures in place that will come into effect in the event a black start is needed to resume transmission. In central Scotland the black start is currently reliant on Longannet.’

Galloway explained that whilst Longannet is still in operation, it takes between 12 and...THE WORST CASE SCENARIO IS A TOTAL OR PARTIAL SHUTDOWN OF THE TRANSMISSION SYSTEM WHICH WILL REQUIRE A BLACK START...
24 hours for transmission to resume. But once Longannet is closed the time it will take for transmission to resume could be more like four to seven days. ‘The DECC and the Scottish Government are currently agonising over alternative black starts for when Longannet closes’ he commented, going on to reflect on London facing a similar risk in 2003. ‘There were concerns about a total or partial shutdown of the transmission system in London in 2003. One option for a black start then was to sail barges from Africa up the Thames to London with diesel generators that would be used to re-start transmission; a farcical solution for a capital city and one that has also been dismissed by the Scottish Energy Minister as a solution for once Longannet is closed.’

...THE ADVANTAGES GIVEN TO ENERGY SUPPLIED THROUGH INTERCONNECTORS MEAN THAT DOMESTIC GENERATION SUPPLIERS ARE PRICED OUT OF THE MARKET...

Planning for the future, Scottish Power Transmission and the National Grid announced in February 2012 the new Western Link project, a £1.3 billion contract to build the first ever subsea electricity link between the west coasts of Scotland and England/Wales. The link will allow the electricity capacity flow between England and Scotland to be increased by more than 2,200MW and enable it to flow both ways. ‘Grid and transmission investment is very important. If the wind is not blowing or there is too much wind, we have to be able to move energy up and down the UK’, states Galloway, ‘Scottish Power is already thinking about an east coast equivalent of the Western Link.’

However, investment by Scottish Power in new power stations is challenged in the current market, due to the advantages given to foreign energy suppliers providing electricity through North Sea interconnectors. ‘The advantages given to energy supplied through interconnectors mean that domestic generation suppliers are priced out of the market’, comments Galloway, going on to highlight the effect this has on the investment decisions of an international energy company, such as Scottish Power’s parent company Iberdrola. ‘The energy market is an international one. Investment will go to the most attractive countries and that is not the UK right now. For Iberdrola, a lot of the time it could be more profitable to close a UK based power plant, build a new plant on mainland Europe and use an interconnector to sell it in to the UK. The current set-up punishes domestic generation.’
CASE STUDY: WIND FARMS

When David Cameron announced in a speech to the Department of Energy and Climate Change in 2010 that he would lead the ‘the greenest Government ever’ it marked the start of a Government term that supported or introduced many of the UK’s most well-known renewable energy initiatives. With the Planning Act 2008 also fully implemented, the backing of renewables led to a number of offshore and onshore wind farm applications being made and consented to between 2010 and 2015.

However, since the election in May 2015 there have been drastic cuts to existing renewable subsidies and two applications for wind farms have been refused.

The first, in September 2015, was the decision to refuse planning permission for the Navitus Bay offshore wind farm. The application had been for 194 wind turbine generators located less than 15km off the Jurassic coast of Dorset which would have generated up to 970MW. The wind farm plans had attracted an unprecedented amount of opposition, with more objections lodged with the Planning Inspectorate than for any offshore wind farm before it. The ultimate decision to refuse permission was based on the harm caused by the visual impact of the wind farm on the Jurassic Coast – a World Heritage Site.

‘Characterising this as a huge blow for renewable energy is probably going a bit far’, Angus Walker from Bircham Dyson Bell commented at the time, ‘All the other offshore wind farms promoted under the Planning Act 2008 have been approved and this one is something of a special case given its proximity to the Jurassic Coast – England’s first and only natural World Heritage Site.’ Walker did however go on to sound a note of caution for some wind farms, ‘The Conservatives’ opposition to onshore wind is well known, and today’s decision suggests that near-shore wind farms are also now vulnerable.’

The Government’s opposition to onshore wind farms became clear in June 2015 when Amber Rudd confirmed that they would be excluded from the Renewables Obligation subsidy scheme from 1 April 2016 – a year earlier than expected. This came in the same month that the Communities Secretary, Greg Clark, announced that planning applications for onshore wind farms will no longer be dealt with by national planners as Nationally Significant Infrastructure Projects (NSIPs).
Instead decisions will be taken at a local level and will only be given the go-ahead if they have been clearly backed by local people in a Local or Neighbourhood Plan – a process expected to lead to significantly fewer successful applications.

It was this change to the planning process for onshore wind farms that led to energy company Vattenfall deciding to cease development of the Nocton Fen Wind Energy Project near Lincoln. Until the announcement by Greg Clark the wind farm had been progressing under the NSIP process. Commenting on the company’s decision, Graham Davey, Vattenfall’s Project Manager for Nocton Fen, said ‘It was clear that proposed changes to onshore wind planning in England introduced increased risk in the process.’ The wind farm would have comprised of 20 turbines – enough to generate capacity for thousands of homes in the area. ‘It’s obviously disappointing to stop development of Nocton Fen as it would have delivered significant benefit locally and generated affordable, clean and renewable energy for tens of thousands of homes every year’, Davey concluded.

The second wind farm application to be refused consent since May 2015 was the proposed Mynydd y Gwynt onshore wind farm at Glanrhyd in Wales, which was refused permission on 20 November 2015. The application for the 27 turbine wind farm was submitted via the fast-track Planning Act 2008 regime for NSIPs (it was submitted before the announcement by Greg Clark in June 2015). Despite the Examining Authority recommending that the Secretary of State for Energy and Climate Change grant consent the Secretary of State refused it. Her decision was based on the lack of evidence that there would be no adverse effect on the red kite population of the Elenydd – Mallaen Special Protection Area in accordance with regulation 61(5) of the Conservation of Habitats and Species Regulations 2010.

...THE ULTIMATE DECISION TO REFUSE PERMISSION WAS BASED ON THE HARM CAUSED BY THE VISUAL IMPACT OF THE WIND FARM ON THE JURASSIC COAST...
Q1 What is the process energy companies have to undertake to gain planning permission for a power station?

It depends upon the proposed capacity of the generating station.

Currently, in England and Wales, the faster and more streamlined Planning Act 2008 regime has to be used to obtain consent for power stations above thresholds set out in the Act. The Act created a single consents regime for these power stations (and other projects) which are classified as Nationally Significant Infrastructure Projects (NSIPs). The NSIPs are onshore power stations of more than 50MW and offshore stations of more than 100MW capacity. Consent for onshore stations of 50MW or less is granted by the local planning authority and for offshore generating stations with a generating capacity of more than 1 MW but less than or equal to 100 MW, it is granted by the Marine Management Organisation.

In Scotland, local authorities are responsible for granting consents for generating stations under 50MW in capacity, and projects exceeding 50MW are determined by the Scottish Government, in consultation with local planning authorities.

A key component of the 2008 Planning Act regime is that a developer is required to carry out compulsory pre-application consultation not only with the statutory bodies but also with the affected landowners and the local community.

Q2 What are the complexities of specific types of power generation?

Whilst the consenting process for the different types of power generation remains the same and is dependent upon the capacity of the station and not the type of power generation, each type of power generation raises its own challenges particularly in relation to environmental impacts which must be addressed before consent is granted.

One of the key components of the NSIP regime is National Policy Statements (NPSs) which set out the framework for decisions by the Secretary of State on NSIPs. In July 2011, the Government published six energy NPSs covering different types of energy generation: fossil fuels; renewable energy and nuclear power. In addition, there are NPSs covering oil and gas and electricity networks. There is also an Overarching Energy NPS which helpsfully sets out an overview of each type of power generation covered by the specific NPSs and states that the UK needs all the types of energy infrastructure covered by the NPS in order to achieve energy security at the same time as dramatically reducing greenhouse gas emissions.

...THE PLANNING ACT 2008 REGIME...IS STILL TOO PRESCRIPTIVE AND UNNECESSARILY BURDENSOME...

These NPSs identify the generic as well as specific impacts (or complexities) of each different type of power generation covered so for example, for onshore wind farms, factors which need to be considered in decision making are access tracks to connect onshore wind farms to the public road network, the lifeline of the wind farm, turbine design, micrositing and repowering of existing sites. In terms of the impacts, these would include consideration of shadow flicker, biodiversity, impact on the historic environment, landscape and visual impacts, noise and vibration and traffic and transport. Whilst most of these
considerations would apply equally to other types of power generation, specific considerations for specific type of energy generation apply, so for nuclear, additional factors would be impact on human health and well-being, water quality and resources, socio-economic impacts, coastal change etc.

**Q3** What are the main advantages of the Planning Act 2008 process over the town and country planning regime?

There are a number of advantages of the Planning Act 2008 regime over the conventional town and country planning system including certainty because of fixed timescales. Save for the pre-application stage, there are fixed timescales which apply for each stage of the Planning Act 2008 regime process so that an applicant can be fairly confident that they will get a decision on average, within 17 months of the submission date. In addition, an applicant can include compulsory purchase powers in the order which the applicant drafts (unlike the town and country planning rate) and is able to include, in addition to planning permission, a number of other consents within the order such as listed building consent, scheduled ancient monument consent and deemed marine licence.

...THE GOVERNMENT PUBLISHED SIX ENERGY NPSS COVERING DIFFERENT TYPES OF ENERGY GENERATION: FOSSIL FUELS; RENEWABLE ENERGY AND NUCLEAR POWER...

**Q4** What more could the Government be doing to improve the planning process for energy companies?

Whilst the Planning Act 2008 regime has resulted in speeding up the consenting process for the larger energy projects, it is still too prescriptive and unnecessarily burdensome. The regime could be further streamlined without compromising the safeguards in place to ensure full public participation and scrutiny of the application. In addition, smaller energy projects should have the option of using the Planning Act 2008 regime should they chose to do so.
However, whilst large energy projects are being consented, they are not being built because of funding issues and this is a major obstacle which needs to be addressed by the Government.

**Q5 Are Planning Performance Agreements (PPAs) a help to the planning process?**

I am sceptical about PPAs and how there is an expectation by local planning authorities that a developer will automatically agree to spend hundreds of thousands of pounds on paying for ‘officer time’ on considering an application. They were originally introduced to provide financial assistance to local authorities in dealing with complex major projects which are often resource intensive so that the project could be given adequate attention, which is only fair. But they have now become so much of a norm that their need is not always questioned and developers feel under pressure to enter into a PPA because they are so prevalent. However, a PPA is not always necessary.

**Q6 Have you sensed increased concern amongst clients about security of supply?**

There is more awareness of the issue in recent years, whether this is because of the increased media coverage on this topic or due to genuine concerns, it is not clear. Consultants advising on wind farms are very concerned about the change in the Government policy for this type of energy which has resulted in a spate of refusals, all but halting onshore wind farm development without replacement with an alternative energy source. The Government has killed off one source of energy without an effective replacement.

Whilst alternative sources of energy, such as fracking and shale-gas exploration are being encouraged, they are not without critics and are still some way off.

**Q7 What would your most practical piece of advice be to energy companies considering developing a power station?**

To be clear about what your project is and what you are seeking consent for based on a thorough analysis of the business case. Ensure funding is in place and seek early legal advice. The application process under the Planning Act 2008 is effective but complex and resource intensive.
PLANNED CLOSURES AND NEW ENERGY

Key:
- Coal
- Combined Heat and Power
- Fossil Fuel
- Gas
- Multifuel
- Nuclear
- Tidal
- Waste
- Wind
- In construction/operational
- Construction not yet underway
- Planned closures – up to and past 2020
- (cl) Closure (ec) Expected Closure (c) Consent

1. Eggborough (2016cl)
2. Rugeley (2016cl)
3. Lynemouth (2023ec)
4. Knottingley (2015c)
5. Ineos Mitriles (2023ec)
6. Hartlepool (2024ec)
7. Dungeness B (2028ec)
8. Didcot B (2023ec)
9. Hythe (2023ec)
10. Sutton Bridge B (2015c)
11. Rampion (2014c)
12. Clocaenog Forest (2014c)
13. Brechfa Forest West (2013c)
14. Tidal Lagoon Swansea Bay (2016c)
15. Aberthaw (2023cc)
16. Hinkley Point B (2023cl) / Hinkley Point C (2013c)
17. Hunterston (2023cl)
18. Longannet (2016cl)
19. Torness (2023cl)
20. Heysham 1 (2019cl) / Heysham 2 (2023cl)
21. Walney (2014c)
22. Cottan (2023cc) / West Burton A (2023cc)
23. Rookery South Energy (2011c)
24. Burbo Bank (2014c)
25. Kentish Flats Extension (2013c)
27. Triton Knoll (2013c)
28. Dungeness B (2028cc)
29. Longannet (2016cl)
30. Rampion (2014c)
CONSUMER SURVEY
The consumer survey, carried out by Ipsos MORI, canvassed the views of 1,000 adults aged 16-75 in the UK. We have not published all of the findings of the survey due to space constraints. However, if you would like a further breakdown of the results please email enquiries@bdb-law.co.uk.

BUSINESS SURVEY
Bircham Dyson Bell, in conjunction with Clarity Surveys, canvassed the views of 100 businesses based in the UK. The size of the businesses varied, but the survey was completed by one of the following decisions makers within the company:
• Owner/Proprieter;
• Partner;
• Chairperson;
• Chief Executive;
• Managing Director;
• Non-Executive Director;
• other board level manager/director;
• other senior manager or director below board level.

POWER STATION CLOSURES AND SUPPLY
This information was sourced from the Department of Energy & Climate Change, Electricity: Chapter 5, Digest of United Kingdom Energy Statistics (DUKES).

NEW POWER STATIONS
This information was sourced from the Planning Inspectorate on the National Infrastructure Planning website and information published by the promoter companies of the new power stations.
The Capacity Market Auction offers all capacity providers (new and existing power stations, electricity storage and capacity provided by voluntary demand reduction) a revenue stream and in return providers must deliver energy at times of system stress, or face penalties. Potential providers secure the right to receive capacity revenues by participating in a competitive auction process which sets the level of Capacity Payments.

Carbon Tax is a tax on the emissions caused by the burning of fossil fuels aimed at reducing the production of greenhouse gases.

Climate Change Levy is a tax on energy delivered to non-domestic users intended to increase energy efficiency and reduce carbon emissions.

Demand Side Balancing Reserve is targeted at large energy users who volunteer to reduce their electricity demand during winter weekday evenings between 4pm and 8pm in return for a payment.

Energy Efficiency Standard is the Government’s fuel poverty target to improve the energy efficiency of fuel poor homes, by getting as many households as reasonably practicable to a minimum standard of band C by 2030 (with interim targets of band E and band D by 2020 and 2025).

The Energy Union is a project of the European Commission to coordinate the transformation of European energy supply to bring about the transition to a low-carbon, secure and competitive economy.

EU Energy Grid is a potential future grid that would interconnect energy between European countries and the regions around Europe’s borders.

Feed-in Tariffs are payments made to anyone who owns a renewable electricity system, for every kilowatt hour they generate.

The Green Deal was introduced to help households make energy-saving improvements to their home and find the best way to pay for them. In July 2015 the Government decided to stop funding the Green Deal Finance Company (GDFC).

Interconnectors are international connections between electricity networks which enable energy to flow between countries.

National Infrastructure Commission is an independent body which will look broadly at long-term infrastructure needs (including energy) and provide impartial advice to ministers and Parliament.

Nationally Significant Infrastructure Projects are major infrastructure developments for which the Planning Act 2008 regime has to be used to obtain consent to build.

Notification of Inadequate/Insufficient System Margin is a formal communication to the market that the usual ‘safety cushion’ of capacity is not sufficient in the event of an unforeseen emergency.

The Renewables Obligation places an obligation on UK electricity suppliers to source an increasing proportion of the electricity they supply from renewable sources.

Smart Meters are the next generation of gas and electricity meters, offering a range of intelligent functions that are intended to put consumers in control of their energy use and allowing them to adopt energy efficiency measures that can help save money on their energy bills and offset price increases. The Government has committed to rolling out Smart Meters as standard across the country by 2020, but there will not be a legal obligation on individuals to have one.

Supplemental Balancing Reserve is a generation service whereby a generator is kept on standby in case National Grid requires additional capacity to meet demand.

The Warm Homes Discount requires domestic energy suppliers to provide approximately £1.45 billion of direct and indirect support to fuel-poor customers over five years. For the winter 2015 to 2016 households could get £140 off their electricity bill through the scheme.