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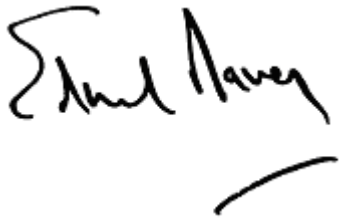
GOVERNMENT RESPONSE TO THE HOUSE OF THE LORDS SUB COMMITTEE ON AGRICULTURE, FISHERIES, ENVIRONMENT AND ENERGY'S REPORT ON EU ENERGY POLICY

Thank you for your predecessor's letter of 2 May 2013 enclosing your committee's report on EU energy policy, *No Country is an Energy Island: Securing Investment for the EU's Future, 14th Report of Session 2012-13, HL Paper 161.*

The Report is a timely and welcome contribution to the important debate about the future of EU energy policy – a debate that continued at the May European Council which agreed on a number of actions to facilitate the investment in energy infrastructure needed for the EU's transition to a low carbon economy. These included the revision by the Commission of state aid rules to allow for targeted interventions to facilitate energy and environmental investment, and the swift implementation of the regulation on European energy infrastructure (TEN-E). In addition, the Council stressed the importance of the 2030 Climate and Energy Framework in providing long term certainty for investment, and committed to return to the issue in March 2014 to discuss concrete proposals from the Commission. Much of the discussion at the Council was in line with the spirit of your committee's report.

You will also be aware that since your report was published, the Government has announced its own vision of the 2030 framework, calling for the EU to adopt an ambitious emissions reduction target for 2030, delivered in a flexible, technology neutral way, supported by a robust, reformed emissions trading system, and underpinned by a global agreement in 2015.

I therefore read the report with great interest. There is much the Government can welcome in your committee's recommendations though also some areas, such as targets for renewable energy where our views differ and I enclose the Government's response to the report.



EDWARD DAVEY

GOVERNMENT RESPONSE TO THE

HOUSE OF LORDS EU SUB-COMMITTEE FOR AGRICULTURE, FISHERIES, ENVIRONMENT AND ENERGY REPORT:

"No Country is an Energy Island: Securing Investment for the EU's Future"

1. The Government welcomes the House of Lords EU Sub-Committee for Agriculture, Fisheries, Environment and Energy report on securing investment for the EU's future. We set out below our views on the Committee's recommendations and the actions we propose to take in light of them.

2. The Government is acutely aware of the 'trilemma' – articulated starkly in the report – of ensuring that future supplies of energy are low carbon, but also secure and affordable. The Energy Bill currently going through Parliament will enable the implementation of electricity market reforms to secure the investment to make this low carbon transition in the UK power sector. We have also adopted an ambitious Energy Efficiency Strategy that sets the direction for energy efficiency policy for the coming decades and the steps we will take to overcome the barriers to realising the energy efficiency potential that is available in the UK economy . However, while the UK and other Member States must be allowed to choose their own energy mix, as the Committee rightly asserts in its report, we need to work within a wider EU framework to meet the energy challenge.

3. Energy prices, our access to energy and the transition to a low carbon economy are some of the most fundamental issues facing Member States today. The EU must urgently implement its third internal market package to deliver more competitive, well-functioning electricity and gas markets that will reduce prices for consumers, promote cross border trade and provide incentives for efficient investment. These efforts should be supported by EU-level work and co-operation on innovation and research and development.

4. The Committee's report is extremely timely. Since publication of the report, EU Heads of State or Government at the May European Council agreed on a number of actions to facilitate investment in energy infrastructure. These included the revision by the Commission of state aid rules to allow for targeted interventions to facilitate energy and environmental investment, and the swift implementation of the regulation on European energy infrastructure (TEN-E). In addition, the Council stressed the importance of the 2030 Climate and Energy Framework in providing long term certainty for investment,

and committed to return to the issue in March 2014 to discuss concrete proposals from the Commission.

5. It is clear that we are in a key period for EU Climate and Energy Policy as Member States start to debate, in earnest, this long term policy framework. While the EU has historically shown global leadership on climate and energy issues, most notably through the 2020 package agreed in 2008, we must now look ahead. As the May Council indicated, the EU must put in place 'a well-functioning carbon market and a predictable climate and energy policy framework post-2020 which is conducive to mobilising private capital and to bringing down costs for energy investment'.

6. As the Committee will be aware, the UK has recently made clear its own vision for the 2030 Framework. The Government believes that the EU should adopt an ambitious emissions reduction target for 2030, delivered in a flexible, technology neutral way, supported by a robust, reformed emissions trading system, and underpinned by a global agreement in 2015. The framework should be designed to achieve the most cost-effective emissions reductions. We believe this means that the EU should:

    a. adopt a unilateral EU wide greenhouse gas emissions reduction target of 40% for 2030;
    b. make an offer to move to a target of up to 50% conditional on a global comprehensive agreement;
    c. urgently deliver structural reform of the EU ETS, on the basis of legislative proposals from the European Commission, put forward well before the end of this year;
    d. continue to work towards completion of the single energy market in line with recent European Council Conclusions ;
    e. not include a renewable energy target or mandatory energy efficiency target, either of which risk pre-judging the cost effective pathway to 2030 greenhouse gas outcomes ; and
    f. continue with key enabling actions including support for R&D and product standards.

7. The Government believes that the 2030 framework – properly designed and implemented – can provide the right signals for cost effective low carbon investment and enable the EU economies to take advantage of the opportunities for low carbon growth – including new and upgraded energy infrastructure. Importantly, it would also allow Member States to make the right choices for themselves – especially the choices over which technologies to use in the low carbon transition, preferably by enabling business and markets to help drive those choices.

8. We will continue to engage with the Commission, other Member States, the European Parliament and other stakeholders to set out our vision and to ensure that the 2030 Framework provides the right environment to secure the investment required to meet the EU's energy challenge.

Responses to Recommendations

9. The Government response to each of the Committee's recommendations is set out below. Unless otherwise indicated, these are presented in the order in which they appear in Chapter 7 of the Report: Conclusions and Recommendations.

Chapter 2: Investment and Costs

Paragraphs 18, 24, 28, 38

We recommend that the Commission includes energy policy within its annual growth strategy and that Member States be encouraged, through the European Semester, to consider how their fiscal policies can contribute to unlocking investment in the energy sector.

(…) We therefore agree with the evidence presented that the time is right for infrastructure investment, including in energy, because it can have a multiplier effect, it can provide secure energy at a stable cost and it can boost technological advance. Low carbon generation and system infrastructure in particular can provide domestic energy production for decades at low and stable operating costs but at a high capital cost. We conclude that such investment is particularly appropriate at a time of historically low interest rates and recession. The potential to utilise underemployed financial resources, at low financing costs, while providing a secure indigenous supply for future growth means that investment, particularly in low carbon energy, could make a material and enduring contribution to European economic recovery.

Investment in low carbon energy will undoubtedly create jobs, but we caution that the case is not yet clear as to the extent to which net new jobs will be generated in the EU. We recognise the significant job creation potential of energy efficiency and energy connectivity developments.

We conclude that there is a crisis of investment, which needs to be overcome if the estimated €1 trillion of investment required in the EU's energy system to 2020 is to be released. The balance sheets of utility companies have slumped. Public funding can make a small but catalytic contribution. The bulk of the financing will therefore rely on institutional investment.

10. Energy is undoubtedly a key determinant of growth. The Government's domestic energy policies are designed to stimulate new investment in energy infrastructure and supply chains that will drive growth, and also overcome the barriers to growth that can arise from high energy costs. The Electricity Market Reform programme is designed to unlock approximately £110 billion of capital investment to replace and upgrade the UK's electricity infrastructure over the next decade.

11. We agree with the Committee's recommendation that the Commission should include energy policy within its annual growth strategy. Energy prices are of fundamental importance for the EU's outlook for economic growth. In our view the best way to deliver energy prices that help maintain the EU's competitiveness is for Member States to fully implement the internal energy market. The Government therefore welcomed

the Commission report on the Single Market which accompanied the 2013 annual growth strategy, and which focussed on energy, as well as services and digital.

12. Growth and climate change mitigation were two of the Government's overall priorities for expenditure in the 2014-2020 Multiannual Financial Framework negotiation. The Government agrees that there is a need for targeted investments in key infrastructure such as energy. Energy is an area with potential for high European added value, in particular due to the need for increased physical energy interconnection between Member States to augment competition among energy providers, lower costs for consumers, and contribute to security of supply. The February 2013 European Council agreed a budget of €29.3 billion for the Connecting Europe Facility, of which €5.1 billion was allocated to energy. This funding will be split between traditional grants and more complex forms of financing, including project bonds, debt instruments and equity instruments, with a view to leveraging private sector investment into energy infrastructure projects in the EU. The Government supports the concept of European Project Bonds. We believe they represent a potential solution to the challenge of maintaining high levels of investment in public infrastructure at times of severe fiscal constraint.

13. We agree with the Committee that investment can boost technological advance. The UK will not meet its low carbon targets with current technologies at current costs. Innovation in low carbon technologies is essential if we are to move to a low carbon society cost effectively. The technology 'push' of direct innovation support alongside the 'pull' of market incentives, such as EMR, is needed if we are to bring many new or enhanced technologies to a point where there is sufficient confidence to attract the large amounts of private sector investment necessary to deploy them at a commercial scale. The Government expects to invest in excess of £800m in this spending review to support a broad portfolio of innovative low carbon technologies, helping to boost jobs, expertise and skills in this sector.

Paragraph 39

We recommend that the Commission and Member States work urgently with investors, including pension funds, to ensure their awareness of the opportunities, to identify obstacles and to propose solutions, such as the development of instruments to allow the pooling of resources in order to mitigate risk and encourage investment. Initiatives such as the EIB's Project Bond Initiative should be appropriately financed and promoted within the investment community. The EIB has a particular role in that promotion, but responsibility falls also to the Commission and Member States

14. We agree with the Committee that it is vital for the Commission and Member States to engage with investors on the barriers to and opportunities for investment in energy infrastructure.

15. The Government is working closely with a range of financial investors including pension funds, both to promote the UK in particular but also the EU as an attractive location for energy investment. The Department of Energy and Climate Change (DECC), working with UK Trade and Investment (UKTI), has a programme of overseas events focussed on energy infrastructure, targeted at financial investors. This has included recent events in China and Japan.

16. We are also working closely with other Member States. The UK has agreed to host an event later this year for European governments, system operators, the Commission, and investors focussed on promoting investment in European energy infrastructure. This will build on the 2012 Northern European Energy Dialogue hosted by the Danish government in Copenhagen.

17. The Government supports the concept of European Project Bonds. We believe they represent a potential solution to the challenge of maintaining high levels of investment in public infrastructure at times of severe fiscal constraint. As such we believe Project Bonds have the potential to facilitate a pragmatic switch away from grant funding towards bond financing and have the potential to produce a more efficient EU budget. Moreover, if properly designed, financial instruments such as Project Bonds can demonstrate to private sector investors the viability of financing solutions supported by the EU budget.

18. We have a close working relationship with the European Investment Bank, and will continue to work with them to explore opportunities for promoting initiatives such as the Project Bond.

Paragraph 40

It is evident to us that a clear and credible EU energy and climate change policy through to 2030 is a pre-requisite for attracting investment and must therefore be adopted as a matter of urgency. Failure to invest, or investment at high financing costs due to perceived policy risk, could push up the overall cost of energy to consumers.

19. The EU has historically been a world leader in starting to deal with the challenges of climate and energy policy. It has developed and implemented ground-breaking legislation to cut emissions, promote renewable energy and improve energy efficiency. However, the Committee is quite right to point out that the EU now needs to agree a clear and credible climate and energy policy framework through to 2030.

20. The Government is clear that stable, long term policy frameworks can contribute to reducing risk and lowering the cost of capital for, in particular, energy infrastructure projects with long investment cycles. This is particularly important given the scale of the energy investment challenge both for the UK and the EU more widely. We welcome the European Commission's Green Paper on the 2030 Climate and Energy Framework, and note the Commission's intention to produce firm proposals by the end of the year for consideration at the European Council in March 2014.

21. Since the Committee reported on its inquiry in May, the Government has set out its position on the 2030 framework. The Government believes that the EU should adopt an ambitious emissions reduction target for 2030, delivered in a flexible, technology neutral way, supported by a robust, reformed emissions trading system, and underpinned by a global agreement in 2015. The framework should be designed to achieve the most cost-effective emissions reductions. We believe this means that the EU should:

    a. adopt a unilateral EU wide greenhouse gas emissions reduction target of 40% for 2030;
    b. make an offer to move to a target of up to 50% conditional on a global comprehensive agreement;
    c. urgently deliver structural reform of the EU ETS, on the basis of legislative proposals from the European Commission, put forward well before the end of this year;
    d. continue to work towards completion of the single energy market in line with recent European Council Conclusions;
    e. not include a renewable energy target or mandatory energy efficiency target, either of which risk pre-judging the cost effective pathway to 2030 greenhouse gas outcomes; and

f. continue with key enabling actions including support for R&D and product standards.

22. We believe that such an approach will deliver a strong message to EU investors, giving them the certainty for the long-term which in turn helps ensure we make the right investments now to reduce long-term costs.

23. We agree with the Committee on the need for the EU to act quickly on this matter, and have called on the Commission urgently to present legislative proposals to deliver structural reform of the EU ETS, well before the end of the year. The Government also supports cancellation of an ambitious volume of EU allowances under Phase III to reduce the surplus and help restore the balance between supply and demand. We favour an increase in the EU's 2020 greenhouse gas target to 30%. These changes should take effect as soon as possible and definitely before 2020.

Paragraphs 49 and 50

Energy pricing is, rightly, attracting attention as a factor of competitiveness and affordable energy should certainly be a goal of policy makers. The impact of the required energy transformation on retail bills, for industry and consumers, is uncertain. Ultimately, retail bills depend on a combination of taxation, energy efficiency and, most significantly, potentially volatile energy costs driven by business cycles and uncertainty. Policy makers cannot totally control volatility but their actions can mitigate its impact. We consider that bills are more likely to increase long-term if delays in developing a clear policy framework fail to ensure adequate and timely investment, including and particularly relating to low carbon sources which do not depend on global fossil fuel markets.

Failure to stabilise bills could provoke a serious political backlash. This underlines the need for governments and energy suppliers to convey a transparent and credible narrative to their consumers about the objectives of energy policy. As recommended by the Commission, specific measures must be defined at national and local levels to tackle fuel poverty.

24. The Government cannot control volatile world energy prices but can still help consumers reduce their bills and take measures that will protect them from long term international fuel price volatility. Investing now in building a diverse, low carbon and efficient energy mix will result in more stable and lower prices than would have been the case in the absence of these policies.

25. Artificially reducing retail prices would be unsustainable, reduce the suppliers' margins to a level that would discourage investment in the new infrastructure we require and put at risk energy security of supply and our climate change objectives

26. Given the different circumstances of individual Member States, action on retail energy bills is generally best taken at a Member State level, although this should be within the wider context of a well-functioning EU single market. Among the easiest ways to get energy bills down quickly are to help consumers to be on the lowest possible tariffs and to reduce the amount of energy that is wasted.

27. The Government is taking powers in the Energy Bill that will allow Government to ensure that consumers are on the cheapest tariff that meets their preferences – i.e. their method of payment, and whether they have opted for a standard variable rate tariff or fixed price / fixed term product – and have clear personalised estimates of the savings they can make by moving to their supplier's cheapest tariff.

28. Our proposed amendments include powers to:
    a. Cap the number of tariffs that suppliers may offer. This will end the proliferation of tariffs that has taken place over the last few years and make it easier for consumers to compare tariffs across the market.
    b. Prohibit poor value “dead” tariffs. Where customers on a "dead" legacy deal are paying a higher price than their supplier's cheapest standard tariff, they will be switched to the cheaper rate.
    c. Require suppliers to provide, on relevant customer communications (such as bills and annual statements), personalised estimates of the savings to be made from moving to the supplier’s cheapest tariff;
    d. Require suppliers to use a tariff comparison tool that will allow for comparison of different tariffs on a like for like basis in the way that the APR allows comparison of financial products.

29. These measures, which build on Ofgem’s Retail Market Review proposals, will significantly reduce complexity and enhance transparency for energy consumers, giving them greater confidence that they are not paying more than they need to for their energy.

30. Government is also providing support to collective purchasing and switching schemes through its £5m Cheaper Energy Together fund, which can help consumers to get a better deal on their energy. As an example, the Which? “Big Switch” run last year estimated saving around 37,000 participants an average of £223 per year.

31. We are helping people to use less energy, by providing new ways to pay for and install energy saving home improvements through the Green Deal and Energy Company Obligation. These will help people insulate their homes so they leak less heat, and replace their heating systems with more efficient boilers and low carbon generation. Under the Energy Company Obligation, the Affordable Warmth and Carbon Saving Communities Obligations together should generate expenditure in home thermal efficiency improvements worth around £540 million per year, supporting around 230,000 low income households each year. The government-funded Energy Saving Advice Service has already referred over 10,000 low income, vulnerable consumers to obligated energy suppliers to receive heating and insulation measures under ECO Affordable Warmth.

32. The Government recognises that extra advice and support is needed to help vulnerable consumers engage with the energy market and make informed switching decisions. We are therefore providing £900,000 in 2013/14 to fund the creation of the ‘Big Energy Saving Network’, which is a co-ordinated Network of voluntary organisations and

community groups that will develop and deliver support for vulnerable consumers, to help them engage with the energy market.

33. The Government is fully committed to addressing fuel poverty and helping low income, vulnerable households to keep their homes warm at an affordable cost. We have in place a strong package of measures to help the most vulnerable, including Warm Home Discount, Winter Fuel Payments and Cold Weather Payments.

34. The Warm Home Discount scheme, worth over £1.1bn over 4 years, requires energy companies with over 250,000 domestic customers to give a discount on electricity bills to low income and vulnerable customers. We expect around 2 million households to benefit each year as a result. Last winter over 1 million of the poorest pensioners automatically received a discount on their electricity bill of £130. Other groups such as low income families and those on low incomes with long term illnesses and disabilities can also benefit through the scheme. In addition, the Department for Work and Pensions automatic Cold Weather Payments, are targeted at the elderly, disabled and those with young children

35. In October 2012 the Government offered English Local Authorities the opportunity to bid for funding to reduce the extent of fuel poverty in their area, primarily through the provision of support for improvements to the thermal efficiency of dwellings. £31million was awarded to 60 projects involving 169 local authorities across England. This competition put local action at the heart of efforts to keep energy bills down and homes warm and delivered valuable support through innovative schemes to vulnerable households across England

Chapter 3: The energy mix

Paragraph 54

We recommend that consideration should be given to annual obligatory reporting by Member States to the Commission on their national energy policies, with assessments conducted by the Commission on the implications of emerging policies for neighbouring countries and the EU as a whole. This must extend to assessment of the compatibility of national policies with EU rules on state aid, on which we recommend the Commission provides further clarity.

36. Member States are required to submit periodic reports to the Commission detailing action being taken within specific areas of energy policy. There is a requirement on Member States under the Energy Efficiency Directive for National Energy Efficiency Action Plans to be submitted every three years and a similar obligation under the Renewable Energy Directive on Member States to submit National Renewable Energy Action Plans.

37. While the UK publishes an Annual Energy Statement, there is no obligation on Member States to submit a report to the Commission covering the whole national policy framework. Whilst the Government considers there may be a case for such a report, in principle, not least in order to facilitate co-operation between individual Member States, there would need to be a rationalisation of existing reporting requirements in order to avoid duplication and additional administrative burden. Any resulting Commission assessment on the implications of national policies on neighbouring countries would have to respect all areas of Member State competence including the right to determine national energy mix.

38. The Government is a strong supporter of the internal market for energy and strong competition rules, both of which benefit consumers and promote growth. The Government has discussions with the Commission as to the application of the state aid rules in a number of contexts and will continue to ensure that its policies are implemented in a way that is consistent with the EU's state aid rules.

Paragraphs 60-63

In terms of worldwide electricity generation, CCS could make a larger contribution than anything else to reducing greenhouse gas emissions. The EU has a common interest in the development of CCS because of its common decarbonisation target and availability of significant carbon storage capacity.

We consider that, in relation to both coal and gas, CCS is technically feasible, but faces both financial and political obstacles. We urge the UK Government to deliver and build on its commitments to support pilot projects and stress the importance of an EU CCS portfolio including at least one CCS project applied to gas.

Where possible, CCS should be developed in industrial clusters so that it can be applied to industry as well as the power sector, thereby allowing its by-products to be used for industrial purposes.

It is particularly disturbing that as the need for CCS has increased, the effort to deliver it appears to have diminished. The slow progress of CCS thus far and its importance to EU energy policy suggest that a stronger incentive needs to be developed at EU and Member State level. This requires a stable source of national and EU funding and a credible carbon price or regulatory approach. Such an approach should include a provisional target date for requiring CCS to be applied to any new fossil fuel power stations, based on the results of pilot projects.

39. The Government has recently announced its two preferred bidders in the £1bn CCS Commercialisation Competition. These are the Peterhead gas project in Aberdeenshire and the White Rose coal project in Yorkshire. Alongside the two preferred bidders we have designated two Reserve Bidders – Teesside Low Carbon and Captain Clean Energy in Grangemouth. These are large, complex, 'first of a kind' projects. We have been working at pace to progress the competition.

40. The process we have gone through to date has brought much value, both in terms of gaining stronger assurances that the projects we proceed with will be both deliverable and financeable, but also that they could ultimately provide good value for the UK taxpayer. The next stage is for projects to enter into multi-million pound Front End Engineering Design (FEED) contracts. These studies are a fundamental part of any large engineering or construction project prior to final investment decisions as it is only through this detailed work that all parties can gain greater certainty over the costs involved. The results of the FEED studies will then inform decisions, in early 2015, on constructing up to two full projects. We expect projects to be operational between 2016 and 2020.

41. We have a four year, £125 million cross-Government CCS Research and Development Programme which currently covers around 100 projects. Funding comes from DECC, the Energy Technologies Institute (ETI), Technology Strategy Board (TSB) and Research Councils and includes £55 million to support fundamental research and understanding and £43 million for pilot scale projects to bridge the gap between research and commercial scale deployment. This includes the Ferrybridge Carbon Capture pilot project, a 5MWe amine post-combustion plant attached to SSE's coal fired Ferrybridge power station. The plant is capable of capturing up to 100tCO2 a day and will complete its two year test programme later this year.

42. Industrial CCS is important to the UK. DECC's Carbon Plan envisages the first deployments of CCS in industry in the late 2020s, and the UK has committed to carrying out a techno-economic study this year to help better understand the necessary technologies and costs. The Government sees cost-competitive CCS as essential for industry; without CCS, it may not be possible to substantially decarbonise sectors such as steel and iron, cement, chemicals and refineries.

43. The Government wants the Commission to ensure that funding for commercial scale CCS projects is made available and contributes to successful Final Investment Decisions for commercial scale projects in the EU. The Government believes that it is essential that EU ETS reform is taken forward, in part to ensure that the carbon price provides a clear and long-term price signal for new low carbon technologies such as CCS.

44. In the UK, we have taken the lead and recognise the challenges to progressing CCS. We have developed a comprehensive programme to help overcome these and build a CCS industry. We have provided £1billion capital through the UK CCS Competition alongside operational support through our wider Electricity Market Reform.

45. We are also regulating to provide long term signals about the direction of our policy and have introduced a 'Triple Lock' of policies to drive forward deployment and ensure we can have no new coal without CCS.

46. First, the National Policy Statements for Energy (NPSs) require that all commercial scale (at or over 300 MW) combustion power stations have to be constructed Carbon Capture Ready (CCR); and no new coal-fired power stations can be developed without having CCS on at least 300MW of the proposed capacity.

47. Secondly, we know the importance of price signals, and recognise that the carbon price signal from the EU ETS is not consistent with the pace and scale of decarbonisation we need to meet our targets. Therefore, we have moved to provide a stronger carbon price

in the UK to promote investment in low-carbon generation over the longer term. This is being achieved through the Carbon Price Floor which will 'top up' the EU ETS price to provide the necessary stable incentive.

48. Finally, the Emissions Performance Standard (EPS) will provide a regulatory backstop to the requirement that any new coal plant must be equipped with CCS by being set at a level of 450 g/kWh - approximately half the level of CO2 emissions from a new unabated coal plant.

Paragraph 68

Gas has an important role as a transitional fuel, in moderating the cost of energy while larger renewable resources are further developed, and in balancing the system as the scale of intermittent inputs rises. However, further gas investment also carries a risk of 'lock-in' to carbon-based plant and infrastructure. Regulation, indicated well in advance, may be required in order to manage the transition to further decarbonisation, whether by CCS or by moving beyond gas.

49. Gas currently forms an integral part of the UK and European generation mix. It is a reliable and flexible source of electricity generation. The UK Government expects that gas will continue to play a major role in our electricity mix over the coming decades, alongside low-carbon technologies as we decarbonise our electricity system.

50. Modelling in the Gas Generation Strategy, published by the Government in December 2012, suggests that under a central scenario of 100g CO2/kWh by 2030 up to 26GW of new gas generating capacity could be required by then. That new gas plant will in part replace older coal, gas and nuclear plant as it retires off the system. We may need more overall gas capacity than we have today (around 5 GW), although we expect that plant to be operating at lower load factors.

51. However, responses to our call for evidence suggested that investment in new gas generation may not come forward in the way that would usually be expected. Our discussions with stakeholders suggest this is an issue that other European electricity markets may also be experiencing. The Gas Generation Strategy outlines the policies which will support investment in new gas plant in the UK. These include a proposed Capacity Market; a sustainable and affordable cap on the Levy Control Framework out to 2020 to provide certainty to gas and low-carbon investors; the powers taken in the Energy Bill to improve wholesale market liquidity in the future if necessary; and the proposal to improve the planning regime for generating plant.

52. Turning to the perceived risk of carbon lock-in of gas generation, the European CCS Directive and now the Industrial Emissions Directive require gas plant developers to assess whether it will be technically and economically feasible to retrofit carbon capture to their plant, whether transport facilities are technically and economically feasible, and whether suitable sites exist for captured carbon emissions. Where these conditions are met, suitable space must be put aside on the site for carbon capture equipment.

53. Recognising the significant role that CCS could play in the UK's energy future, the Government has built on this requirement. In England and Wales, to receive development consent there is a requirement for any new thermal power station at or over 300MWe to have demonstrated that it will be technically and economically feasible

to retrofit CCS to that power station in the future. In Scotland, the Scottish Government has specified that new-build thermal power stations should be able to deliver CO2 abatement. These are known as Carbon Capture Readiness (CCR) requirements.

54. The Government does not believe it prudent at this stage to change the CCR requirements.

Paragraph 75

We agree that a regulatory structure for the exploitation of shale gas in the EU should be developed. We caution, however, that fundamental structural differences (including population density, geology, planning and legal factors) make it highly questionable that the EU could repeat the US experience. The EU is unlikely to compete on the basis of cheap fossil fuels. Creation of such a false hope would undermine the policy stability required to attract investment. We therefore conclude that there is some uncertainty about the likely extent of EU-produced shale gas. The EU must take into account the further exploitation of shale gas in neighbouring regions and the implications of this for EU energy policy.

55. The Government has set up the Office of Unconventional Gas and Oil to encourage the development of shale gas in the UK. Shale gas has the potential to enhance UK energy security but must be developed safety and sustainably.

56. We also consider that shale gas production could have benefits for EU competitiveness. It could be an extra source of supply close to market giving greater supply diversity and, if developed at scale, could put downward pressure on prices. However, we agree with the committee that there is some uncertainty about the likely extent of EU-produced shale gas. Exploration and development in the EU is very much in its infancy, and there are significant differences between the situation in US and Europe which make large scale unconventional gas production less likely.

57. The Government agrees that the EU should have regard to the potential impacts on its energy policy of the exploitation of shale gas in other regions. In broad terms, the global development of unconventional gas could be a strongly positive development in terms of mitigating price pressures and improving energy security. But it should not be assumed that it will bring impacts comparable to those seen in the US. We note that most gas market analysts consider that global gas prices will remain around the current levels for the foreseeable future.

58. The Government is clear that development of unconventional gas should be safe and sustainable but is not convinced that substantial new action at EU level is required. We note that the EU already has a well-articulated framework addressing environmental protection and the need for public engagement. We recognise that there may be a need to update specific parts of this framework, and note that the Commission is due to issue a Communication to the Council on this issue around the end of the year. We will continue to engage with the Commission in this area and will consider the Communication carefully.

Paragraph 82

We note with concern the resurgence of coal in the EU. While significant closures are expected to take place as a result of EU environmental Directives, we observe that new plants compliant with those Directives are in preparation. We warn that, if the price of carbon under the ETS languishes for long, its credibility as a deterrent to new coal investment will be lost. The further development of coal in circumstances where CCS is not a proven technology would carry a high risk, not only in terms of climate change (and EU credibility), but also economic risk of stranded assets.

59. In recent years the UK has seen a shift away from gas generation to coal, with a similar shift occurring across Europe. This is due to a change in the relative prices of gas and coal and a fall in the cost of EU ETS emissions allowances. The increase in the use of coal for generation is a Europe-wide trend resulting from lower wholesale coal prices on the global market. The introduction of shale gas has increased coal exports from the US, lowering the market price at the same time as demand has decreased from China. Global gas prices have not fallen in the same way, hence the shift from gas to coal across Europe. Meanwhile, EU ETS prices have also remained low during this time, minimising the penalty for the increased CO_2 emissions associated with coal. While it is difficult to be precise, the general outlook for coal is that it will maintain its price advantage over gas in the near term.

60. In the UK, this increase in coal generation is expected to be a relatively short-term phenomenon. This is consistent with our decarbonisation policy, and will be driven by a number of domestic and EU policies. The EU Large Combustion Plant Directive (LCPD) set an emissions limit for sulphur dioxide. An initial exemption from this requirement will end in 2015 or sooner for plant that have used up their allowance, and they will cease generating electricity. The EU's Industrial Emissions Directive (IED), will come into effect in January 2016. It tightens emissions limits on fossil fuel power station, particularly emissions of nitrogen oxides (NOx).

61. This policy landscape will lead to challenging financial decisions for coal operators in the UK going forward. Whilst it is difficult to predict the decisions of those individual operators, we currently expect very few unabated coal power stations to be operational beyond the early 2020s. Any longer-term role for coal in the UK will be dependent on the successful deployment of cost-competitive carbon capture and storage

62. The Government has already committed to preventing new unabated coal plant being built in the UK. The National Policy Statements issued under the Planning Act 2008 require any new coal plant to be equipped with at least 300MW (net) of Carbon Capture & Storage (CCS). The Emissions Performance Standard (EPS) introduced as part of the

Energy Bill reaffirms this position and supports the CCS planning requirement by setting an emissions level around half that produced by unabated coal.

63. We are committed to the development of CCS, and have one of the best offers in the world to bring this technology forward, including the £1bn commercialisation competition, £125m for research and development and on-going support through electricity market reforms in the Energy Bill.

Paragraphs 88, 89, 90 and 91

There are a range of renewable energy technologies at various stages of development. A number of onshore renewable resources, including wind, could be close to cost-competitive with present fossil fuel prices if the carbon price was more robust, but they are impeded in particular by public opposition as well as strategic uncertainties about energy prices and policy.

For much of northern Europe, including the UK, offshore renewable energy will require sustained investment, including by way of support schemes, to bring down costs. We would not support harmonisation of national support schemes but welcome work by the Commission to identify examples of best practice. We agree that support schemes should be temporary and phased out as a technology progresses towards commercial viability.

We accept that the increasing development of renewable energy has implications for the continuity of supply due to the intermittent nature of some renewable energy generation. This challenge should not be underestimated, but nor need it be an obstacle to the further development of renewable energy. It can be overcome through demand-side response, interconnection, storage and gas generation, although the necessity for gas to play this role should recede over the medium- to long-term.

We conclude from the German energy transformation thus far that, in practice, the safe and reliable introduction of high levels of renewable power requires coordination with neighbouring Member States.

64. The Committee rightly points out that some renewable energy technologies could be close to competitive if the carbon price was more robust. The IEA's Energy Technology Perspectives 2012 identifies Solar PV, bioenergy and onshore wind as technologies that are already maturing and moving down their cost curves.

65. We also agree that several technologies are further behind, including offshore wind. Our national policies, including through electricity market reform, and the Offshore Wind cost reduction task force, are designed to improve investor certainty and help ensure that offshore wind progresses towards commercial viability. At EU level, we agree with the Committee that national support schemes should not be harmonised, however, we welcome and are happy to support the Commission's work on identifying best practice examples.

66. The increase in intermittent renewable power such as offshore wind is part of the broader picture of changing patterns of supply and demand that will occur as we progressively decarbonise the power sector. We agree with the Committee that, increasingly, balancing technologies (electricity storage, demand side response (DSR)

and interconnection) and smarter networks will be required to help match the supply and demand of electricity efficiently and cost-effectively.

67. The UK engages both at a strategic and technical level with other Member States on any cross border implications of national electricity policies. This is in part through the European Commission's Electricity Co-ordination Group, which provides a platform for strategic exchanges between Member States, national regulators, ACER, ENTSO-E and the Commission on electricity policy.

68. The UK is also one of the ten member countries in the North Seas Countries' Offshore Grid Initiative (NSCOGI) which is looking at how a more integrated offshore grid might be used to maximise the use of renewables and facilitate cross-border trading.

Paragraph 98

There is not, and there never has been, consensus among Member States with regard to the role of nuclear energy. In the UK and elsewhere, financing remains problematic, both in terms of securing investment and with costs overrunning. Nuclear remains a low carbon option, but its future is uncertain in the EU. Important issues relating to state aid, liability and waste remain to be resolved and must be addressed by Member States and the Commission. Failure to agree the terms of significant new nuclear investment will inevitably increase reliance on alternative energy sources.

70. We recognise that there is no consensus among Member States with regard to the role of nuclear energy. However, Member States are responsible for determining their own energy mix and there are a number of Member States who would either like to see nuclear energy become, or continue to be part of their energy mix. The UK Government is clear that nuclear energy has a role to play in a diverse energy mix in the UK ; this is important for reasons of security of supply and decarbonisation.

71. The UK is working with the European Commission to develop the Contracts for Difference (including on nuclear energy) under the UK's Electricity Market Reform in line with EU state aid rules. We look forward to making further progress in these discussions over the coming months.

72. The Government is acutely aware that issues around waste and decommissioning are of high importance and the Government's policy of the Funded Decommissioning Programme has been designed to ensure that generators put money aside for these purposes from the day new nuclear plants start generating.

Chapter 4: Delivering policy clarity – 2030 framework

Paragraph 103

Member States must be under no illusion: failure to agree a 2030 framework will restrict investment, with subsequent implications for energy costs, climate change ambitions and energy security. A comprehensive framework must be underpinned by a greenhouse gas reduction target set at the suggested level of 40% compared to 1990 levels, and in line with at least an 80% reduction by 2050.

73. The EU has agreed a long-term objective is to cut emissions by 80-95% on 1990 levels by 2050. Our emissions reductions must follow a pathway to this target that is cost-effective i.e. that avoids costly action and lock-in to high carbon technology and infrastructure by spreading effort across the period. The European Commission's Low Carbon Roadmap sets out such a cost-effective pathway for domestic EU emissions reductions; this passes through a milestone for 2030 of reductions of 40% on 1990 levels. The Government has supported the milestones in the Low Carbon Roadmap and believes that it is crucial to stay on such a trajectory and agrees that the EU should adopt a unilateral EU wide greenhouse gas emissions reduction target of 40% for 2030.

74. We believe that this:

    a. balances the need to avoid overly expensive action now with the need to avoid overly expensive future action to bring emissions back towards our ultimate goal;
    b. delivers a strong message to EU investors giving them the long-term certainty necessary for them to make the investments needed to minimise the long-term costs of decarbonisation; and
    c. helps keep the EU at the frontier of global action and able to take the lead in the technologies and industries of the future global low carbon economy.

75. However, 40% represents only the cost-effective trajectory for domestic action to reach the EU's 2050 objective of an 80-95% reduction. The Government believes that the EU should make an offer to move to a target of up to 50% conditional on a comprehensive global agreement on climate change whereby other developed countries commit themselves to comparable emissions reductions and developing countries contribute adequately. This represents a strong offer to our international partners and gives us the best chance of securing in 2015 an ambitious global climate deal which would help deliver the two degree target and avoid the dangerous effects of climate change.

Paragraphs 113-116

The recession and other factors have made the ETS marginal in terms of driving emissions reduction. Its history and current design render it ineffective at achieving its other goals. Experience has demonstrated the extreme sensitivity of the ETS to unanticipated developments.

We support the back-loading proposal to amend the ETS in the short term but we agree with some of our witnesses that it will be ineffectual without a commitment to a timetable for longer-term structural reform. This should be agreed by 2015 in advance of the Paris international climate change negotiations.

The dominant options for rejuvenating the ETS include tightening the cap and setting a floor price. The uncertainty in revenues makes it impossible for governments to budget effective use of ETS revenues, and the price collapse has reduced the major source of expected EU finance for CCS. We therefore conclude that a floor price would simultaneously increase investor confidence and help to stabilise possible financing for infrastructure, low carbon innovation and related applications.

A combination of both tightening the cap and introducing a floor price, seen as part of a package to attract new investment and support efficiency and innovation, may help to alleviate some of the political opposition to both options. Structural reform is important to restore credibility and meet the multiple goals of the ETS, but a clear trajectory for a reduction in the cap over the period to 2030 would remain important.

76. The EU ETS is delivering what it was primarily designed for – its environmental objective of a 21% reduction in 2020 traded sector emissions from 2005 – and therefore cannot be said to be failing. But the Government agrees with the Committee that, with persistent oversupply and a low carbon price due to the recession, its credibility as an effective mechanism for driving industrial decarbonisation and incentivising low carbon investment is being called into question.

77. To address these problems in the short term, the Government supports the Commission's "back-loading" proposal with links to structural reform. "Back-loading" a significant amount of allowances would temporarily strengthen the EU ETS by creating some short-term scarcity in the market and drive up the allowance price. But we strongly agree that back-loading is only a short-term measure and that longer-term reforms are required to strengthen the System.

78. Structural reform must be pursued urgently and in parallel with efforts to agree back-loading. The Government is therefore calling on the European Commission to bring forward legislative proposals for structural reform as soon as possible and at the latest by the end of 2013, including in a Joint Statement on EU ETS reform signed by the

Secretary of State for Energy and Climate Change and eleven other EU Environment Ministers.

79. As set out in the Coalition Agreement, the Government supports an increase in the EU's 2020 GHG target to 30%, with the new target implemented through changes to the ETS cap and the Effort Share decision for sectors outside the EU ETS. In the absence of such an increase, we support cancellation of an ambitious volume of EU allowances to reduce the surplus and help restore the balance between supply and demand.

80. As noted earlier, the Government also supports a 2030 GHG reduction target for the EU of up to 50% in the light of an international agreement, or 40% without an agreement, and structural reform of the EU ETS should be in line with this objective.

81. The Government is in the process of analysing other options for structural reform put forward in the European Commission's November 2012 report on the state of the European carbon market.

Paragraphs 121 and 138

A strengthened and more effective ETS can provide a broad underpinning for the most cost-effective low carbon technologies, but it cannot support all of the necessary transformations. An EU-wide renewable energy target beyond 2020 is desirable, and so we therefore support a renewable energy target up to 2030. Failing that, a 2030 decarbonisation target at the EU level for the power sector should be set. Member States could then set their own specific renewable energy targets, which should be reported to the Commission.

We conclude that the future framework can and should be seen and articulated as an economic opportunity for all Member States. It must overhaul the ETS as an instrument for supporting strategic investment both by industry and, through revenues raised, for supporting innovation (for example, in CCS and offshore turbines), European infrastructure investment and energy efficiency. Provisions on the ETS must form part of a package along with policies on renewable energy and associated infrastructure, energy efficiency, and energy-intensive industries. We note that the unanimous support of all Member States may not be required, as any future agreement could be reached with a qualified majority.

82. As set out elsewhere in the response, the Government believes that the 2030 Framework should be ambitious, flexible and designed to achieve the most cost-effective emissions reductions. We believe that a strengthened and reformed EU Emissions Trading System (ETS) will be a key instrument in a 2030 climate and energy framework. The ETS provides:

    a. an emissions cap for the power and industrial sectors giving high levels of certainty that emissions reductions will be made;
    b. a carbon price to provide an investment signal that applies across the EU and all sectors covered by the System; and
    c. through trading, a means to allow emissions reductions to be made wherever it is most cost-effective.

83. The Government agrees that other measures are likely to be required to bring down the costs of certain technologies that may be needed for future decarbonisation, or to meet other objectives such as increasing energy efficiency. However, the Government opposes an EU renewable energy target for 2030 as it would not best support the goals of EU energy and climate policy.

84. Any targets agreed as part of a 2030 framework should be designed to drive the EU's decarbonisation objectives while also respecting the other main objectives of energy policy, in particular security of supply, EU competitiveness and affordability. The overall goal should be to help to reach agreed decarbonisation targets for 2050 and limit global temperature rises to 2°C. The focus of a 2030 framework, particularly in current economic circumstances, should as such be on ensuring that the EU takes an economically efficient decarbonisation pathway towards 2050 (recognising the need to manage the uncertainties that exist around this), while continuing to grow the economy and to maintain secure and affordable energy supplies for households and business. This means enabling Member States to continue to pursue a wide range of low carbon technologies – including renewables – so as to decarbonise in a way that is cost-effective. The essential need for flexibility means that, while being fully supportive of renewable energy and the role it plays as part of a diverse energy mix, the Government does not support a renewable energy target in the 2030 framework.

85. The EU will need to continue pursue a wide range of low carbon technologies in order to fully decarbonise in a way that is cost-effective and maintains security of supply because:

a) It is hard to pick now which technologies will be winners; by allowing a wide range of potential markets to develop we can maximise the chance of the EU playing a leading role in the technologies of the future so maximising the benefits to growth. Furthermore, allowing a range of technologies can introduce competition which can in turn drive down prices;
b) diversifying our energy system can reduce our dependency on any one fuel or technology and help to insulate our energy supply from global events and volatility in fuel prices;
c) there are still significant uncertainties as to which technologies will best meet our future needs. Therefore we should not limit our options now. We should not focus on energy supply above energy reduction, biofuels over electric vehicles or renewable electricity to the exclusion of CCS as we currently do under the renewables target.
d) as we begin to substantially decarbonise, physical limitations such as land area or sustainability issues may prevent reliance on only one type of technology. For example, the currently framework requires significant levels of biofuel use despite increasing concerns that many biofuels do not save significant amounts of GHG relative to fossil fuels and that some many even emit more GHG than fossil fuels. There are also concerns over the food price impacts of crop-based biofuel. A flexible, diverse approach mitigates such risks.

86. This is also a key part of EU global leadership – we must play our part in developing technologies, such as CCS, which will be critical to global decarbonisation (both for the power sector and later to decarbonise some industrial processes), even if individual Member States choose not to incorporate them into their energy mix.

87. Member States must also have the ability to make judgements for themselves as to the best way to meet their emissions reduction commitments. We have seen that technology specific targets are extremely hard to set correctly at an EU level so they are consistent with what is most cost-effective for each Member State, given the diverse nature of the EU. For example, conditions in the UK mean that we are likely to make more progress from opportunities like offshore wind than converting district heat networks. It is very difficult to set a general, prescriptive target in a way that reflects these nuances, and which accurately incorporates potential supply and costs. We need to look more carefully at how to sequence and time the deployment of renewables in each sector – and how each country's cost-effective decarbonisation pathways shape this. The pace, order and extent of deployment will be different between Member States; by removing the flexibility to reflect this, a renewable energy threatens to needlessly increase cost.

88. Flexibility is also essential to respond to technological change. For example, there remains uncertainty as to the levels of intermittent generation that can be accommodated and the degree to which technologies such as CCS will develop. Failure to respond to developments will expose energy bill and tax payers to an unquantifiable (but large) future liability. Furthermore, if a future target seems potentially untenable it will not give investors the certainty they need.

89. Some renewable technologies will be cost-competitive with fossil fuel alternatives well before 2030, although others will be much further behind on the commercialisation curve. For example, the IEA's "Tracking Clean Energy progress 2013" shows that in 2012, onshore wind investment costs had already met the IEAs 2020 target range for the 2 °C scenario, and solar PV costs were falling rapidly towards their goal. Other technologies, such as CSP remain more expensive, and will be in 2020 even under the IEA's 2°C scenario target range. This means that post 2020 will be a very different world to the situation when the 2020 renewable energy target was agreed. A renewable energy target for 2020-2030 will include relatively mature technologies that are capable of deployment without public support. This can distort the energy market and risks Member States over-rewarding technologies that can already compete on cost leading to windfall profits and deadweight losses while potentially neglecting those technologies that are still emerging.

90. Furthermore, we do not see emissions reductions or security of supply as valid arguments for a renewable energy target. A greenhouse gas target is essential and a renewable target will not provide additional emissions reductions but may instead just shift emissions from one sector to another, potentially making overall emissions reductions across the EU more expensive. While renewable energy may improve security of supply through greater diversification and reduced import dependency, this is also not a valid reason for such a wide-sweeping and unfocused measure to address something which is predominantly a Member State issue.

91. There are a number of important areas in which EU-level action may help to enable increased levels of renewables, but these would be better addressed through targeted interventions than an unfocused target. As deployment increases across the EU, we are identifying new issues deserving of attention. For example, enabling effective integration of energy systems into a single energy market; meeting the balancing challenges associated with increasing levels of intermittent electricity, and from changes in patterns of demand in other sectors like transport; coherence of support schemes; addressing supply chain constraints; and the sustainability of bio-energy (including indirect land use change). It is important that, where relevant, the EU seeks to address these issues through specific targeted interventions. The measures identified in the Recent EU Communication should help address these issues, and we hope that these will be in place well before 2020, negating the need to do more in this respect post-2020. The achievement of further cost reductions is not universally reliant on achieving further deployment as incentivised through a renewable energy target.

92. The Government considers there is a need to give investors certainty beyond 2020 and more still needs to be done to bring costs down and support developing technologies. We feel these can best be done in a number of ways:

    a) Investor certainty: in the UK Contracts for Difference will provide individual power sector investors with high levels of long-term certainty and we plan to have the option to introduce a decarbonisation target for the power sector for 2030 if additional certainty is needed. In the heat and transport sectors product standards provide high levels of certainty for investors.
    b) Reducing costs: beyond 2020 Member States are still likely to need to provide some support to deployment of technologies such as renewables and CCS to bring about further cost reductions. Member States should focus on those that best suit their individual characteristics. Some co-ordination between Member States in how they support and deploy technologies may be helpful (but this does not require a binding target). In addition, Member States should work collaboratively with industry on the specifics of planning, regulation, finance, the supply chain, and technology development– an approach pioneered with the UK's offshore wind taskforce. It is

not clear that a binding RES target will result in further technology cost reductions. The technologies delivering the majority of generation have been commercialised for some time and are now being deployed at scale.

c) Supporting developing technologies: some low carbon technologies (including some renewables technologies) will need on-going EU level action in this area.

Paragraphs 126 and 127

The EU has adopted the EED which needs to be implemented across Member States. We would support further consideration as to the introduction of binding EU-level targets on energy consumption by 2030, consideration which should be informed by the Commission's assessment in 2014 of the implementation of the EED.

There are important helpful technologies, such as community heating systems and CHP, which must be further developed. The potential 'rebound effect' reinforces the need for energy efficiency policy to be complemented by measures to price carbon appropriately.

93. Energy efficiency has a central role to play in delivering cost-effective reductions in greenhouse gas emissions, reducing energy bills, improving business competitiveness and making the economies of Europe more resilient to external energy price shocks. The Government believes we need to ensure that framework put in place for 2030 is flexible enough to account for the different drivers and opportunities that exist across Member States for carbon abatement, including energy efficiency.

94. However, this does not mean that a mandatory energy efficiency target should be incorporated into the 2030 package, or that such a target is necessary for the EU achieving its energy and climate goals. Such a target would remove Member States' flexibility to determine how to achieve GHG emissions reductions most cost-effectively, balancing both reductions in energy use and decarbonisation of energy use. This balance will be different for each Member State, and may change over time, as the costs of different interventions and technologies change.

95. The current indicative energy consumption target for 2020 allows Member States the flexibility to implement their own policies in the most cost-effective way and this flexibility will remain crucial as we look towards 2030. The EU framework for energy efficiency policy has only just been updated with the agreement of the Energy Efficiency Directive, and Government notes that the requirement for the Commission to review progress towards the 2020 energy consumption target in 2014. This must inform any future decisions on the issue of targets.

96. Equally targets must not distort choices or reduce flexibility for Member States to pursue their cost-effective policy mix. We do not know yet what the balance between demand reduction and other low carbon measures will be in 2030, and this balance is likely to change depending on how our economies and technologies evolve. We believe that a 2030 mandatory energy efficiency target could risk pre-judging the cost-effective pathway to 2030, restricting Member States' flexibility to decarbonise at least cost

97. We also need to ensure that any target does not cut across other EU instruments – ensuring alignment with the overall greenhouse gas target in order not to undermine the EU-ETS. Equally, targets must not distort choices or reduce flexibility for Member States to pursue their cost-effective policy mix.

98. As we look towards 2030, we believe the Commission should explore with Member States the opportunities to build on already successful measures. The Government notes the Commission's intention to review the directives on eco-design and energy labelling before the end of 2014. Already, the existing Eco-design Directive has driven significant progress, banning the least efficient products from the market, where cost effective; whilst the Energy Labelling Directive is providing consumers with the information they need to make informed decisions. Similarly, EU-wide standards for passenger cars and light commercial vehicles are driving down emissions and stimulating the research and innovation needed to build a market for low carbon transport. The Government has called on the Commission to continue to press for ambitious action on standards, where we have seen real progress to-date; whilst ensuring that other energy efficiency measures strike a balance between incentivising the action that is needed, without reducing Member States flexibility to implement measures where they are most cost effective.

99. The Government agrees that community heating systems and CHP have an important role to play: the Energy Efficiency Directive already includes a range of requirements aimed at the promotion of efficiency in heating and cooling. Member States must undertake a comprehensive national assessment of the potential for the application of high efficiency co-generation (combined heat and power) and efficient district heating and cooling. Member States are also required to ensure that when generation plant, district heating plant, or industrial plant with a total thermal input exceeding 20 MW are developed or substantially refurbished, a cost benefit analysis is carried out to assess whether the facility should be developed and operated as a high efficiency co-generation installation or be connected to a district heating and cooling network to utilise waste heat.

Paragraph 133

We agree that energy costs have a disproportionate impact on a small number of energy-intensive industries and that this is an issue to be addressed in the post-2020 framework. In order to make a full evidence-based position for that framework possible, we recommend that the Commission explore urgently the various options, such as: free allocation of allowances under the ETS; global sectoral agreements; and any global trade-compatible measure that could equalise costs between domestic and third country producers. Some income derived from the auctioning of allowances under an ETS with a floor price could be offered to assist energy-intensive industries to develop and adopt innovative energy efficient technologies.

100. Energy-intensive industries are crucial to the UK and EU's economic growth and rebalancing the economy. They also manufacture the goods needed to move to a low carbon economy. The Government has made very clear that decarbonisation does not mean deindustrialisation and that measures must be in place to protect European energy intensive industry against losing competitiveness from climate policies and to minimise the risk of carbon leakage which would result in increased global emissions.

101. The best way to address carbon leakage would be an ambitious international climate agreement. This would create a level playing field for industry inside and outside the EU. Agreeing an ambitious EU greenhouse gas target for 2030 set in the context of a global deal will increase the likelihood of other countries raising their ambition and achieving that deal in 2015.

102. To mitigate the risk of carbon leakage, the EU ETS Directive currently favours the free allocation of allowances. We support in this in the absence of an international climate agreement. We believe the proportionate free allocation of allowances gives relief to sectors at significant risk of direct carbon leakage, without raising barriers to international trade. The current system of free allocation under the EU-ETS is under review by 2014 as stipulated in the Carbon Leakage legislation. Whilst we recognise the complexity of this issue, the carbon leakage assessment should be based on a robust system that recognises the latest available evidence. The Government is doing further work to contribute to this discussion and to this end recently commissioned a carbon leakage research project that will report later this year.

103. The Government has also introduced a package of measures worth £250m over the spending review period, to help energy-intensive industries in the UK adjust to the low carbon transformation, while remaining competitive.

104. With regards to use of auction income to develop and adopt innovative energy efficient technologies, please see below the Government's response to the recommendation in paragraph 144 of the Committee's Report.

Chapter 5: Research and Innovation

Paragraphs 144 and 156-60

Innovation is central to the EU's future competitiveness, but the EU risks being eclipsed by others, including the US and China. Two main factors could undermine energy innovation in Europe: inadequacy of finance; and uncertainty about the future policy framework. Both of these could be addressed by an adequate 2030 framework, particularly if this included a reformed ETS which made direct links to innovation through the use of carbon revenues and greater certainty over long term price trends.

Funding to support research and innovation activities across all areas will be increased for the next financing period running from 2014 to 2020. Clarity on how it will divide between the various priorities is now required.

We are alarmed at the degree of evidence that we have heard to suggest that the SET Plan is at risk of failing to deliver its objectives due to inadequate funding. We conclude that the Commission must, as a matter of urgency, revise the SET Plan with a view not only to the technologies on which it should concentrate but also to how the SET Plan will be financed. Such work must be undertaken in partnership with Member States, the private sector and the EIB.

The EIB's risk-sharing finance ability will be of particular value in the context of the market's reluctance to lend to certain Member States because of budget deficits.

In terms of the future focus of investment in R&D, we agree with those witnesses who emphasised the increasing importance of demand-side technologies and so an increased focus on areas such as storage and smart meters would be helpful. As regards renewable energy, further work on advanced biofuels would be helpful, as it would on solar and tidal energies.

We welcome innovative approaches to energy, including those that might be developed through innovation networks such as the new Smart Cities EIP. The value of such partnerships is dependent on their ability to engage with local, regional and national actors.

105. The Committee rightly points out that inadequate finance and uncertainty about the future policy framework are potential barriers to energy innovation in Europe.

106. We agree with the Committee that clarity is needed as soon as possible on what will be supported and to what extent, from future EU funding for energy research and innovation. This is a matter that depends on the resolution of the wider EU budget negotiations, agreements on the further sub-delegations of the EU budget to

Programme level, including to Horizon 2020, the new EU level grant funding programme for research and development. It also depends on agreement of the relevant Governance arrangements.

107. These matters are still under negotiation, but we anticipate that they will be resolved in the next few months in time for the first Horizon 2020 Work Programmes to launch, either around the end of December 2013 or beginning of January 2014. We shall argue that these arrangements must retain a strong influence from Member States in the development of energy work programmes, to facilitate the necessary alignment of national and EU level activities needed to accelerate progress in achieving the Strategic Energy Technology (SET) Plan's objectives.

108. Whilst continuing our strong and active support, the UK has emphasised inadequate funding as a key constraint to the successful implementation and delivery of the SET Plan. We are pleased that EU level funding, which will help to deliver the SET Plan, will rise significantly for the 2014-20 period although it will still be a relatively small part of the total spend required.

109. While important, funding is not the only key factor for SET Plan delivery. We welcome the European Commission's recent Communication on Energy Technologies and Innovation, which seeks to develop a comprehensive vision for the role of energy technologies in delivering future energy supplies. The Communication is intended to provide the foundation for addressing the necessary SET Plan evolution and prioritisation that the Committee's report has identified. The Communication offers a long term vision for a new financial and organisational framework for energy research and development priorities, which will include a focus on the needs of the whole energy system rather than individual technologies in isolation, with a refreshed SET Plan as the basis of this.

110. We welcome the suggestions in the Communication that more investment should be delivered in partnership with the European Investment Bank and through strategically redirecting resources from other EU programmes towards SET Plan activity. The Communication covers much that the UK has been suggesting and supporting for some time. This includes delivering new or improved low carbon energy technologies, from early stage research, through pre-commercial demonstration to deployment, in a joined-up strategic way under the umbrella of the SET Plan.

111. We agree with reinforcing the SET Plan's European Industrial Initiative teams, which have often lacked adequate industry representation; integrating the Intelligent Energy Europe programme into this broader approach to help with delivering potential energy efficiency gains and facilitating deployment; developing innovative financing solutions;

and the importance of being open to funding additional, promising technologies such as ocean energy.

112. The UK also supports the recommendation of greater Member State proactivity in the implementation of the SET Plan, in partnership with the European Commission and industry. The UK is already playing a leading role in stimulating this activity within the SET Plan Steering Group.

113. As regards delivering a long term policy framework to increase certainty for investors, the Government's views on and approach to the EU 2030 Climate and Energy Framework are set out elsewhere in this response. The Government is pressing for urgent structural reform of the EU ETS to reduce the surplus of allowances, strengthen the carbon price and bring the cap in line with a 2030 GHG reduction target of 50%, or 40% in the absence of a global climate agreement.

114. However, it has been the view of successive UK governments that spending priorities should not, in general, be determined by the way in which revenue is raised. Assigning individual tax revenues, including carbon revenues, to fund specific public spending programmes, including those to support innovation, reduces Government's flexibility to manage the public finances efficiently, reducing value for money for taxpayers.

Chapter 6: Interconnectivity and energy security

Paragraphs 168 and 173

It is cost-efficient and urgent to develop electricity interconnections between Member States in order to support both the further deployment of renewable energies and attempts to secure the EU's energy supplies. We conclude that the full benefits of interconnection will be derived only from greater deployment of HVDC lines, allowing electricity to be transported over a long distance at an economical cost.

We agree with our witnesses that an increasingly interconnected grid will need to be developed incrementally, rather than on the basis of a top-down grand plan. Nevertheless a stronger element of network planning—nationally and regionally—could be very beneficial in the transition to a more renewable-based and secure system. The move to greater interconnection is not incompatible with the development of distributed generation, but the potential offered by distributed generation must be recognised more clearly in energy strategies.

115. We agree that there should be more electricity interconnection across Europe, including links between the UK and neighbouring countries. Further interconnection would not only move us closer to a single market, it can have positive impacts on energy costs and security of supply. The extent of these benefits for any given interconnector will depend on the costs of the links and the characteristics of the connecting markets.

116. Ofgem is developing a new approach to regulating interconnection for a project to Belgium that should help enable its delivery. It is also looking more broadly at enhancing network planning and providing for flexibility in the application of the delivery options through its Integrated Transmission Planning and Regulation project.

117. It is worth noting that there are other technologies that are also able to make a contribution to system balancing, these include demand side response and electricity storage technologies which were examined in DECC's 2012 publication 'Electricity System: Assessment of Future Challenges'.

118. We agree that networks need to develop incrementally to minimise the risk of stranded assets. We also agree that there is a case for a more co-ordinated approach to network planning in GB, which is one of the reasons we support Ofgem's Integrated Transmission Planning and Regulation project.

119. We agree that greater levels of distributed generation are potentially important as we move to a decarbonised electricity grid and have been discussing with independent generators the importance of recognising their needs as we reform the electricity

market. We are keen to explore the ‘3Ds’ agenda – distributed generation, demand side response, and demand reduction.

Paragraph 175

We welcome recent agreement on the trans-European Energy Infrastructure Regulation, which identifies PCIs and establishes common rules on permit granting procedures. The Regulation must now be implemented with urgency.

120. The Government agrees on the need for timely implementation of the trans-European Energy Infrastructure Regulation. This regulation was adopted by the European Council in March 2013 and Member States in their regional groups have now agreed draft regional lists for the energy 'projects of common interest' (PCIs). These lists will be reviewed by the European regulators body – ACER – before being formally adopted and passed to the Commission to determine the Union wide list of PCIs by the end of September. This list will be approved by the Council and the Parliament in a delegated act. We look forward to the establishment of this list and to proceeding with the implementation of these projects. We will also participate in the High Level Conference on the implementation of PCIs, being organised by the Lithuanians in November. Nevertheless, projects will not able to receive funding until the adoption of the next multi-annual framework (MFF), which we hope to finalise in July. We continue to push for rapid agreement to the MFF with the European Parliament

Paragraph 178

We acknowledge that public concerns can be a significant obstacle to the development of interconnections. In that context, the public awareness dimension of EU energy policy becomes pivotal: a local decision can have significant pan-European implications in terms of energy cost and energy security. The Commission must consider as part of its future policy framework how it and Member States can work together to communicate effectively the benefits of cross-border energy connections. We agree that providing a clear indication that a project is part of a strategic transition towards an increasingly interconnected grid could help overcome local objections to projects. Early engagement and consultation with the public and other interest groups is similarly important. The Renewables Grid Initiative, involving environmental NGOs and TSOs, is a welcome attempt to tackle the public awareness issue.

121. The Government agrees that early engagement and consultation with the public is important to communicate effectively the benefits of cross-border energy connections. The new EU Regulation on guidelines for trans- European energy infrastructure (TEN-E) sets out a process for selecting European energy projects of common interest (PCIs) and number of clear principles for all parties involved in the permit granting process for PCIs. In particular: Project promoters for PCIs will be required to draw up and submit a concept for public participation to the competent authority which must approve the promoter's plans.

122. At least one public consultation must be carried out by the project promoter of a PCI before the promoter makes an application for development consent, informing stakeholders about the project at an early stage and helping to identify the most suitable location or trajectory and the relevant issues to be addressed in the application. The project promoter must then prepare a report summarising the results of activities related to the participation of the public prior to the submission of the application. The competent authority must then take due account of the results of public consultation in making their decision.

123. In addition the consolidated Environmental Impact Assessment Directive (EU 2011/92) also has requirements for public consultation. In UK the planning/development consent procedures for nationally significant energy projects under the Planning Act 2008 and implementing regulations, with its associated guidance, provide for early public consultation

Paragraph 182

There remain economic and regulatory obstacles to integrated interconnection and transmission, which are crucial to the completion of the internal energy market. We encourage Member States to support regulators, through ACER, and TSOs, through ENTSO-E, in their efforts to overcome those obstacles. A review of budgetary support to ACER in particular would be helpful to ensure that it has a sufficient budget to allow it to deliver its important role. The ultimate goal of more effective regulatory cooperation must be a pan-EU energy market, working for the benefit of EU consumers.

124. We agree that there are economic and regulatory barriers to completing the internal energy market and we are working closely with other Member States, the Commission, regulators and system operators (through ACER and the ENTSOs respectively) to remove them. This is primarily being done through the development and adoption of EU-wide network codes whose aim is to facilitate cross-border energy trading and incentivise investment in cross-border infrastructure. Cooperation between national regulators through ACER is essential to this aim so we agree that the Agency must have sufficient financial and staff resources to discharge its functions effectively. ACER's budget is reviewed by the European Commission each year on the basis of an estimate of revenue and expenditure drawn up by ACER's Director and Administrative Board.

Paragraph 188

There are considerable financial and political uncertainties as to the sources and costs of future gas supply. It is clear that a range of sources and methods of transportation are critical. We support the Commission's attempts to improve efficiency in gas pipeline capacity. We urge the UK Government to examine the potential for a regulatory framework to increase gas storage.

125. We agree with the Committee that having access to a diverse range of sources of gas and methods of transportation is important to GB gas security of supply. Our gas demand is currently met through a diversity of sources; from domestic production (which currently meets around half of annual demand); imports via pipelines from Norway and mainland Europe; imports of LNG from a growing global market; and gas storage facilities.

126. Our gas market is working well, as demonstrated by its resilience during recent winters. Recent analysis conducted by Ofgem of our gas supply outlook shows that only the most extreme circumstances would result in large scale physical interruption to domestic customers and small businesses. Nonetheless, there is work in hand to improve the resilience of our gas market to risks of disruption still further. Ofgem is considering whether to sharpen incentives on gas shippers to secure their gas supply. At an EU level, recent changes to European gas markets will make it easier to move gas between member states to where supply is short.

127. However, the outlook is not risk-free. As the Committee rightly notes, there are uncertainties around the sources and costs of future gas supply. Therefore the Government has been considering whether a further intervention might cost-effectively improve our gas security of supply. As part of this work we have been considering interventions which encourage gas storage development. We will be announcing our decision in the coming weeks.

Paragraphs 195 and 196

In the short-term, we accept the need to introduce legislative powers for a capacity mechanism that seeks to ensure domestic security of energy supply, whether in the UK or elsewhere. The issue will be particularly acute after 2015, as more coal plants are retired under the Large Combustion Plant and Industrial Emissions Directives.

We are concerned that excessive reliance by large numbers of Member States on capacity mechanisms designed to support fossil fuel power station investment will add costs to electricity and may exacerbate the risk of fossil fuel 'lock-in'. For this reason, we consider it important that any capacity mechanism gives at least equal weight, and potentially should prefer, the inclusion of interconnection and of active demand-side response measures as alternate or additional ways of ensuring security of supply.

128. The Government recognises that the single market has the potential to deliver security of supply; but reliance on a single market that is not yet complete is not sufficient when many Member States project rapidly dwindling capacity margins. This is why the UK and France plan to introduce national capacity mechanisms in the near future, and other Member States such as Sweden, Spain and the Republic of Ireland have already introduced national capacity mechanisms.

129. The Government is involved in the discussions taking place across Europe about potential long term solutions to the security of supply challenge facing Member States. We consider that a more integrated and harmonised single market with a more developed demand side may remove the need for national capacity mechanisms in the long term. Given this, we have designed the GB Capacity Market so that it can be withdrawn if the underlying market develops to the point that it is no longer required.

130. We recognise the potential offered by Demand Side Response (DSR) to ensuring security of supply. DSR capacity is reliable and provides an alternative to investing in generation infrastructure. It is also an important step towards a better functioning market where participants respond to price signals by reducing demand when electricity is scarce and prices are high. Given the advantages of DSR, the Government is keen to help the industry develop and play an increasing role in ensuring security of supply. DSR will be entitled to participate in the GB Capacity Market alongside generation capacity. In addition, transitional arrangements will be put in place to ensure the sector has adequate support and its capability is developed to enable participation.

131. The Government is also keen to find a way for interconnected capacity to participate in the GB Capacity Market. Participation of interconnected capacity would increase efficiency by increasing competition in the auction, and provide appropriate incentives for additional investment in interconnection. Any solution must preserve the integrity

of the Capacity Market itself, and be compatible with European internal energy market rules since completion of the single market in energy is an important Government priority.

132. This is a complex area and we have worked closely with expert stakeholders, other EU Member States and the European Commission to explore possible solutions. Given the potential benefits of the single market, and of facilitating additional investment in interconnection, this work will continue. In the meantime, it will not be possible for interconnected capacity to participate in the first capacity auction if this is run in 2014, but we are committed to completing this work as quickly as possible to determine whether there is a solution which would allow interconnected capacity to participate in future auctions.

133. We consider that interconnected capacity should be able to participate where:

a. the penalties imposed upon any provider of interconnected capacity for non-delivery at times of GB system stress are the same as those imposed on GB capacity; and,
b. there is an appropriate level of assurance of physical delivery of capacity offered into the Capacity Market across an interconnector (similar to the pre-qualification process for GB capacity).

134. The target model being introduced across Europe to promote efficient operation of the internal energy market means that interconnector flows will be determined solely by price differentials between interconnected markets. Depending on the circumstances in the interconnected market, prospective providers of interconnected capacity may be reluctant to face exposure to capacity market penalties, although some may wish to do so.

135. Where prospective providers of interconnected capacity are prepared to face penalties, we will need to assess the level of certainty in physical delivery at times of system stress. The fact that a prospective provider is prepared to take financial risk is a positive indicator of their confidence about energy flows, but the design of the Capacity Market requires a level of physical assurance as well. We intend to consider further the nature of evidence that would be necessary to provide an adequate level of assurance on physical delivery.

136. While interconnected capacity is not able to participate directly in the GB Capacity Market (or where it is, chooses not to do so), we will adjust the amount to contract in the Capacity Market to avoid over-procurement. We will take account of the expected

contribution of interconnection at times of GB system stress and adjust the amount to contract accordingly.

137. The GB Capacity Market will not impose any import or export restrictions, and GB will continue to import and export electricity to and from other markets in response to market prices, with interconnector flows determined by EU internal energy market rules.

138. Further detail on the participation of DSR and interconnected capacity will be included in Government's forthcoming publication on Capacity Market design.