



Department
of Energy &
Climate Change

Annual Energy Statement 2013

October 2013



Annual Energy Statement 2013

Presented to Parliament
by the Secretary of State for Energy and Climate Change
by Command of Her Majesty

October 2013

© **Crown copyright 2013**

You may re-use this information (excluding logos) free of charge in any format or medium, under the terms of the Open Government Licence. To view this licence, visit <http://www.nationalarchives.gov.uk/doc/open-government-licence/> or e-mail: psi@nationalarchives.gsi.gov.uk.

Where we have identified any third party copyright information you will need to obtain permission from the copyright holders concerned.

Any enquiries regarding this publication should be sent to us at correspondence@decc.gsi.gov.uk

You can download this publication from <https://www.gov.uk/government/organisations/department-of-energy-climate-change>

ISBN: 9780101873222

Printed in the UK by The Stationery Office Limited
on behalf of the Controller of Her Majesty's Stationery Office

ID P002596580 10/13 33883 19585

Printed on paper containing 75% recycled fibre content minimum.

Contents

1. Overview	6
2. Helping consumers take control of their energy bills	14
3. Unlocking investment in the UK's energy infrastructure.....	24
4. Driving international action on climate change	43
5. Energy resilience and legacy.....	47

Annual Energy Statement 2013

1. Overview

- 1.1 The energy sector is a critical part of the UK economy and is an important driver of growth. As well as contributing to growth, energy policy is underpinned by the need to reduce carbon emissions in order to mitigate climate change and ensure UK energy security, so consumers have access to the energy they need for light and power, heat and transport at affordable prices.
- 1.2 The UK benefits from secure energy supplies thanks to liberalised energy markets, robust regulation and a diverse range of energy sources. However, increasingly the UK energy system is facing new challenges. It needs to make the transition to low carbon in order to meet the UK's legally-binding carbon emission reduction targets. This shift will require a dramatic increase in energy efficiency and significant investment in low carbon technologies. It also means that demand for electricity is expected to increase over the longer term as sectors such as heat and transport decarbonise.
- 1.3 At the same time some existing electricity infrastructure is coming to the end of its working life or deemed too polluting for modern standards; around a fifth of 2011 capacity is expected to close over the next 10 years. Furthermore, over the coming decades the levels of oil and gas production from the UK Continental Shelf (UKCS) are expected to continue to decline; and the UK will become increasingly reliant on imported energy, which increases UK exposure to potential fossil fuel price spikes in the international energy market.
- 1.4 To insulate UK business and consumers from the vulnerability to increasing exposure to volatile fossil fuel prices and to replace electricity infrastructure in time, energy policy is focused on securing huge investment into new low carbon energy generation, from offshore wind to nuclear. A key strategic advantage of low carbon electricity is the boost it provides to energy security. However, in managing the transition to a low carbon energy mix, gas (as the cleanest fossil fuel) is expected to continue to play a major role. So continuing to ensure diversity of gas supplies remains important. Growth of unconventional oil and gas, for example, may help to ensure this. The Government has now established the Office for Unconventional Gas and Oil, which aims to promote the safe, responsible, and environmentally sound recovery of the UK's unconventional reserves, such as shale gas.
- 1.5 UK households pay some of the lowest prices for gas and electricity in Europe. However, while domestic energy prices compare well with other European Union (EU) members, over the last 10 years the UK has seen energy price rises. These have been largely driven by international fossil fuel prices; at least 60% of the rise in household energy bills between 2010 and 2012 was due to the increases in wholesale energy costs. Whilst the Government has limited influence over world energy market prices, consumer affordability is an important priority. Investing now to improve energy efficiency and build a diverse, low carbon energy mix will help to protect consumers from international fuel price volatility in the long term. The latest analysis from the Department of Energy and Climate Change (DECC) shows that by 2020 households on average will save 11% (or £166) on their energy bills compared to what they would have paid in the absence of the Government's energy policies.
- 1.6 The Government has set three clear priorities in delivering the UK's energy policies in the near term:

- helping households and businesses take control of their energy bills and keep their costs down;
- unlocking investment in the UK's energy infrastructure that will support economic growth; and
- playing a leading role in efforts to secure international action to reduce greenhouse gas emissions and tackle climate change.

1.7 This Statement sets out how the Government is:

- delivering on these three priorities;
- making good progress to implement ambitious energy and climate change policies; and
- effectively managing the UK's energy legacy and resilience.

1.8 This Statement fulfils the commitment in the Coalition Programme for the Government to present an annual statement of energy policy to Parliament¹.

Helping consumers take control of their energy bills

1.9 Consumer affordability is central to UK energy policy. The best way to achieve this is through an effective competitive market in energy. By improving competition, as well as providing support to encourage greater energy efficiency, the Government is helping consumers to manage their energy bills. The aim is to drive a bigger wedge between energy prices and the bills people actually pay by helping people to get better value from energy companies and to waste less energy.

1.10 Competition has been at the heart of past success in delivering some of the lowest electricity and gas prices in Europe, and it therefore remains a key focus. So this year the Government has taken steps to ensure consumers get the best deal from the retail market. Through the Energy Bill, currently before Parliament, the Government is legislating to deliver the Prime Minister's commitment to ensure that consumers are on the cheapest tariff with their current supplier that meets their preferences. This supports Ofgem's retail market reforms to simplify and reduce the vast array of complex and confusing tariffs. It means from early 2014 consumers should see clearer, more personalised information on their energy bills so they can compare and switch more effectively to keep costs down. Ofgem estimates that currently consumers can save an average of £72 and a possible maximum of £158 a year by switching to the cheapest deal in the market for their payment method².

1.11 Furthermore, the Government is determined to make it easier for people to find new innovative ways to get a better deal on their energy. In 2012/13, the Government awarded £5 million of support for the most innovative local authority or third sector collective switching schemes through the Cheaper Energy Together competition. Money was awarded to 31 successful projects, covering 94 local councils and eight third sector organisations in Great Britain.

1.12 Effective competition in the wholesale energy market is a key driver of lower prices and competition in the retail market. It is critical that Ofgem tackles barriers to entry that might stifle a fully competitive market. Poor liquidity in the electricity wholesale market is an important barrier to entry and growth for smaller market participants. It is also partly a product of the extent of vertical integration in the market that has developed since the early 2000s. The Government has welcomed the ambitious package of reforms that Ofgem has

¹ The Coalition: our programme for government, May 2010

² Ofgem Retail Markets Review: Draft impact assessment for the updated domestic proposals, page 35

now proposed and is taking backstop powers in the Energy Bill that will enable the Government to act in the event that Ofgem's reforms are frustrated or delayed.

- 1.13 The Government is continuing to take steps to improve the competitiveness of the energy markets and ensure they work more effectively for consumers. The focus is on maintaining a strong and stable regulatory framework that delivers transparent and competitive markets, consumer choice and that has the right penalties for firms stepping out of line. Regular market assessments, with a focus on competition, and a thorough look at the transparency of financial reporting by the major suppliers, both to be undertaken by Ofgem, will help to build consumers trust in the energy markets. A push to secure quicker switching periods and greater ease of switching (through wider requirements for energy companies to share consumption data and by putting Quick Response (QR) codes on bills) will provide consumers with more effective ways to engage with the markets to find the best deals. The Government wants to see strong sanctions against those who manipulate energy markets and will consult on criminal penalties, such as those already in place in financial markets, for such actions.
- 1.14 Through its regulation of gas and electricity networks, Ofgem is encouraging investment in energy networks in a cost-effective way and helping to drive down costs for consumers too. For example, the innovative regulatory regime for offshore transmission continues to realise investment and drive savings for consumers through a tender process that harnesses competitive pressures to push down the costs of running the assets.
- 1.15 Reducing the overall demand for energy through greater energy efficiency has a role to play in keeping consumer costs down, as well as improving the UK's energy security and supporting carbon reduction targets. Although there remains significant energy efficiency potential in the UK economy, as identified in the Government's 2012 Energy Efficiency Strategy³, the UK has already made substantial progress and is the least energy intensive economy in the G8⁴. The Government will be exploring opportunities to build on the progress already made as the EU Energy Efficiency Directive⁵, which seeks to deliver 20% energy efficiency savings by 2020 (from the 2007 baseline), is implemented.
- 1.16 In January 2013 the Government introduced the domestic Green Deal and Energy Company Obligation (ECO) schemes, both of which establish new ways to pay for and install energy saving measures. These schemes will help households insulate their homes and upgrade their heating systems with low carbon alternatives, which will assist them in cutting waste and the cost of their bills, whilst reducing their energy demand and carbon emissions.
- 1.17 Helping to alleviate the impacts of bill increases for many of the most vulnerable households is an important priority and the ECO is an essential part of the Government's package to tackle fuel poverty. Further key elements are the Warm Home Discount Scheme, which provides an electricity bill rebate to some two million households each year; and direct assistance through Winter Fuel Payments and Cold Weather Payments. Over the last year progress has been made in defining a new way of measuring fuel poverty that will enable better targeting of support, and through the Energy Bill the Government is seeking to put in place a new fuel poverty target.
- 1.18 The Government recognises that vulnerable consumers may need additional help to find the best deals in the market and switch, which is why it has provided £900,000 in 2013/14 to

³ The Energy Efficiency Strategy: The Energy Efficiency Opportunity in the UK, November 2012

⁴ DECC Energy Efficiency Statistical Summary 2012

⁵ Details on the EU Energy Efficiency Directive can be found at:

<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2012:315:0001:0056:EN:PDF>

fund the creation of the Big Energy Saving Network. This is an ambitious programme of consumer outreach led by around 500 specially trained energy advisers who will deliver advice sessions throughout winter 2013/14 to vulnerable consumers and provide training to the frontline workers that support them. The outreach programme will focus on helping consumers take concrete steps to reduce their energy costs by taking action on tariffs, switching and energy efficiency offers.

- 1.19 The Government is helping businesses to cut the cost of their bills and reduce their energy consumption and carbon emissions through improved energy efficiency. Support schemes include: the non-domestic Green Deal and Renewable Heat Incentive; the CRC Energy Efficiency Scheme; and mandatory carbon reporting. Each policy provides a different solution depending on business need. In July 2013 the Government launched a consultation on the Energy Savings Opportunity Scheme (ESOS) to help large enterprises to identify cost-effective energy efficiency measures. The Government is in the process of exploring opportunities to maximise synergies between ESOS and other existing schemes.

Unlocking investment in the UK's energy infrastructure

- 1.20 The Government's energy policies are being delivered in a way that maximises the opportunity for economic development, providing a significant opportunity to promote investment and support employment. Energy industries in general contributed 3.5% of GDP to the UK economy in 2012⁶ and energy has a bigger UK infrastructure investment pipeline than transport, broadband, water and waste combined, with projects that are wide spread geographically.
- 1.21 Provisional DECC estimates suggest that at least £35 billion has been invested already in increased electricity infrastructure since the start of 2010 to mid 2013⁷, with a further £20 billion of major generation projects having achieved development consent since November 2012. While progress has been made since 2010, it is estimated that replacing and upgrading electricity generation, transmission and distribution infrastructure will require further capital investment of up to £110 billion from now until 2020⁸ and could support as many as 250,000 jobs in the energy sector.
- 1.22 During 2013 the Government brought forward key announcements on the Electricity Market Reform (EMR) programme, which will put in place the institutional and market arrangements to secure the private sector investment needed. This included details on how low carbon energy will be supported through Contracts for Difference (CfDs) and consultations on the draft strike prices for renewable technologies and EMR implementation proposals. The final EMR Delivery Plan is expected to be published by the end of 2013. The Government's progress during 2013 means the UK is the first country in the world to give clarification on funding levels for low carbon generation through to 2021 and visibility of support mechanisms and prices to 2018/19 for investors.
- 1.23 To help enable investment decisions ahead of EMR implementation, the Government has committed to a programme of Final Investment Decision Enabling to offer investment certainty and support through 'Investment Contracts' (early CfDs). This is focused primarily on renewable technologies, but also reflects the approach being taken to build a new nuclear power station at Hinkley Point in Somerset. On 21 October 2013 it was announced that the Government and EDF Group have reached commercial agreement on the key terms of a proposed investment contract for Hinkley Point C. This will be the first new nuclear

⁶ UK Energy in Brief 2013

⁷ Internal DECC analysis, September 2013

⁸ EMR Draft Delivery Plan Impact Assessment, July 2013

power station in the UK in a generation and will provide a stable source of clean power from 2023.

- 1.24 Ensuring security of supply is a fundamental aim of EMR. Working with Ofgem and National Grid, a package of measures was announced in June 2013 to ensure robust and reliable electricity supplies during this decade and into the 2020s. This included Ofgem's work with National Grid to explore additional safeguards for consumers in the form of new balancing services, to minimise any risks in the near term. For the medium term, the Government intends to run a Capacity Market auction in 2014 for delivery of capacity from the winter of 2018/19, subject to State aid approval. The Government has amended the Energy Bill to enable Electricity Demand Reduction to be supported through the Capacity Market and has committed at least £20 million to a pilot to examine how businesses and other organisations could receive financial incentives for reducing the amount of electricity they use.
- 1.25 More widely, the Government continues to implement other actions set out in the 2012 Energy Security Strategy⁹ to ensure the UK will continue to benefit from energy security for years to come. Actions include: maintaining good international relations so the UK continues to have access to the energy imports required; putting resilience measures in place so impacts are minimised if an event does occur; ensuring the UK energy networks can deliver energy where and when it is needed by consumers; and making the best use of UK indigenous energy resources. The Wood Review commissioned during 2013 will put forward recommendations for improving the future economic recovery of UKCS oil and gas.
- 1.26 Energy efficiency is important in supporting growth and revitalising the UK's energy infrastructure. The mass roll out of smart meters into homes across Great Britain from 2015 is expected to deliver a total capital investment of around £6 billion over the next 20 years, and provide a platform for further investment in smart electricity grids and the development of a smarter energy market. The Government's business-related policies, such as the Climate Change Levy and Climate Change Agreements, are supporting the development of the energy efficiency sector in the UK, a sector which accounts for around 136,000 jobs and had sales of £18 billion in 2011/12¹⁰.

International action to tackle climate change

- 1.27 Warming of the climate system is unequivocal and the latest assessment report from the Intergovernmental Panel on Climate Change¹¹ provides an overwhelming and strengthened body of evidence that man-made greenhouse gas emissions are the dominant cause of recent warming. The Government's approach to avoiding the risk of dangerous climate change has at its centre the Climate Change Act 2008. As the world's first long term legally-binding national framework, the Act requires the UK to reduce its emissions by at least 80% by 2050 (below the 1990 baseline). It also puts in place a system of five yearly 'carbon budgets' to keep the UK on an emissions pathway to 2050. The trajectory of the third carbon budget suggests that the UK will have reduced its emissions by 34% by 2020.
- 1.28 Looking beyond the UK, the Government's robust energy policy framework means the UK is seen as a leader internationally in making the transition to a low carbon economy. Therefore the UK is well placed to press for other countries to take action to tackle climate change. Working through the United Nations Framework Convention on Climate Change, the Government is pushing for international action and agreement to limit global temperature rise to an average of no more than 2°C above pre-industrial levels.

⁹ Energy Security Strategy, November 2012

¹⁰ Low carbon and environmental goods and services (LCEGS) report for 2011 to 2012, July 2013

¹¹ Intergovernmental Panel on Climate Change Fifth Assessment Report, September 2013

1.29 The Government is encouraging EU leadership to ensure, as a community, the EU is “walking the walk” on the international stage. This includes continuing to press for a move to a 30% EU emissions reduction target for 2020 and the adoption of an ambitious emissions reduction target for 2030 delivered in a flexible, technology neutral way, and supported by a global agreement in 2015.

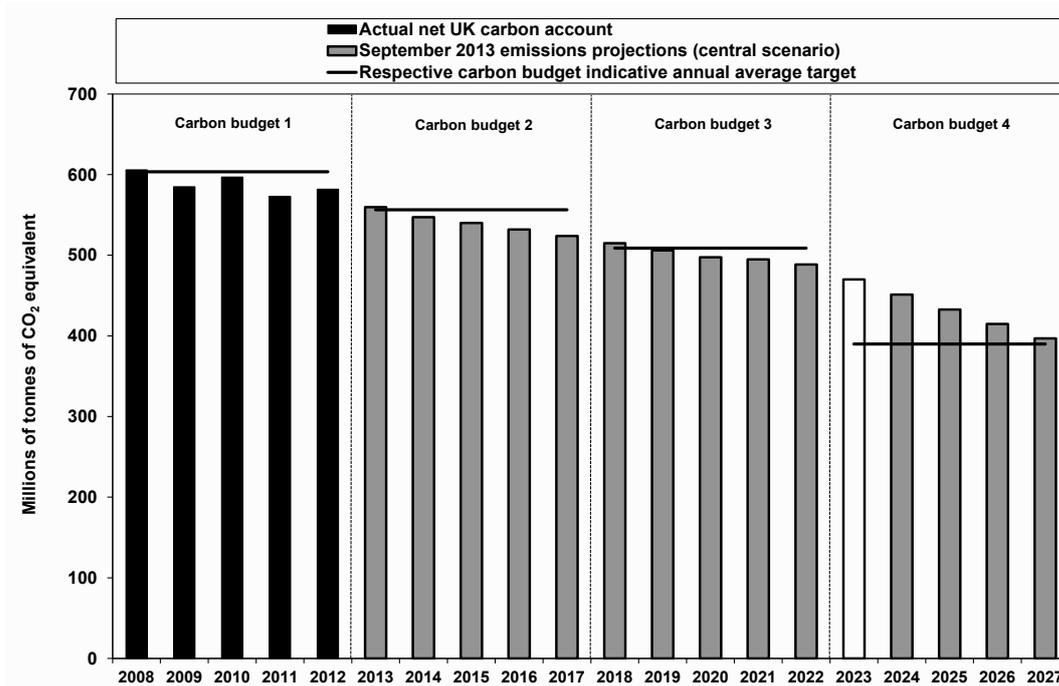
Making progress

- 1.30 In early October 2013 the Government’s Response to the Fifth Annual Progress Report of the Committee on Climate Change: Meeting the Carbon Budgets – 2013 Progress Report to Parliament was published¹². The Response made clear that the latest projections suggest the UK is on track to meet the first three legally-binding carbon budgets provided that current planned policies are undertaken.
- 1.31 As set out in the Carbon Plan in 2011¹³, there is more to do to meet the legally-binding target to reduce the UK’s greenhouse gas emissions by at least 80% by 2050. The Government remains fully committed to meeting this goal and the policies set out in this Statement are beginning to create the step change needed to increase the rate of decarbonisation and effectively transition to a low carbon economy whilst maintaining energy security and minimising costs to consumers.
- 1.32 Based on current planned policies there is an expected shortfall of 215 MtCO₂e¹⁴ over the fourth carbon budget, which reflects that detailed policy has not yet been set out so far into the future. In the Carbon Plan the Government set out a number of scenarios for bridging the previous assumed shortfall (181 MtCO₂e). The revised estimation reflects a number of factors, including revised population projections, fossil fuel price projections, inventory corrections, and revisions to estimated savings from policies. Chart 1 shows progress on carbon budgets.
- 1.33 Under the Climate Change Act 2008, emissions reductions by the UK’s industrial and power sectors are determined by the UK’s share of the EU Emissions Trading System (EU ETS) cap. That protects the UK’s industrial and power sectors from exceeding EU requirements. However, if the EU ETS cap is insufficiently ambitious, disproportionate strain could be placed on sectors outside the EU ETS, such as transport. To overcome that problem, and to provide clearer signals for businesses and investors, the Government will review progress towards the EU emissions goal in early 2014. Unless by the time of the review a new trajectory has been agreed at EU level that aligns with the current trajectory of the fourth carbon budget, the Government will revise up the UK budget as appropriate to match the EU trajectory, taking into account the legal requirements of the Climate Change Act.
- 1.34 In reaching this decision, the Government will take into account advice from the Committee on Climate Change and the views of the Devolved Administrations.

¹² Government Response to the Fifth Annual Progress Report of the Committee on Climate Change: Meeting the Carbon Budgets – 2013 Progress Report to Parliament, October 2013

¹³ The Carbon Plan: Delivering our low carbon future, December 2011

¹⁴ MtCO₂e means Millions tonnes of carbon dioxide equivalent

Chart 1 - Progress on Carbon Budgets¹⁵

1.35 Box 1 summaries some of the key achievements and areas of significant progress across the Government's energy policy framework since the 2012 Annual Energy Statement.

Ensuring delivery

1.36 DECC is working with investors, partners and stakeholders, both domestically and internationally, to ensure the UK makes the transition to a thriving, low carbon economy in the most cost-effective way to protect energy security and tackle climate change. This includes working closely with the Devolved Administrations to reform the electricity market and helping to keep consumer costs down.

1.37 To monitor progress, DECC has established a robust package of performance indicators to measure the impact of the Government's energy policies. DECC publishes quarterly updates on these indicators, including, for example: the number of energy efficiency installations; and the number of households in fuel poverty.

1.38 DECC is committed to continuous improvement of its capabilities. Following the arrival of a new Permanent Secretary in early 2013, further improvements are being made to reinforce management and commercial skills within DECC and to streamline and improve governance processes. This enhances DECC's ability to manage the Government's energy policy framework and enable a skilled workforce to deliver the priorities for action.

¹⁵ UK greenhouse gas emissions statistics and Updated Energy and Emissions Projections, 2013

Box 1: Key achievements and progress

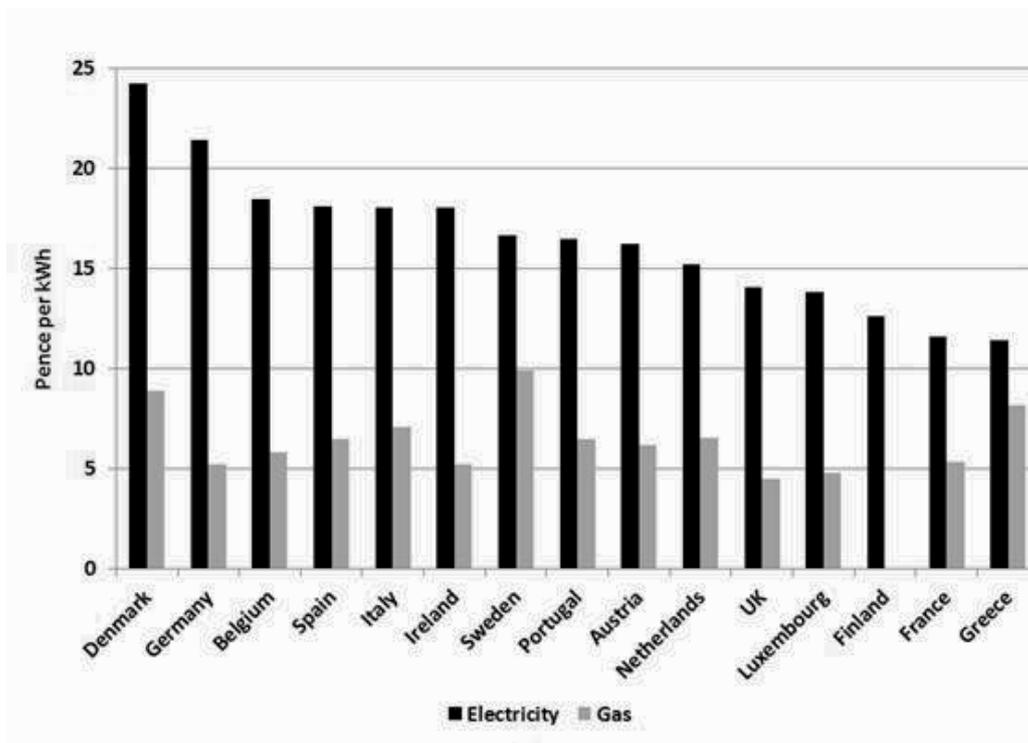
- Driving forward reform of the electricity market to ensure diverse, secure and low carbon energy supplies for the future, with announcements this year including draft strike prices for renewables, details of CfDs, initiation of the Capacity Market and most recently, a consultation on the proposals for EMR implementation.
- Renewable electricity generation is up to a record 15%, a growth of 56% since the second quarter of 2012. Renewable electricity capacity has increased 38% over the same period.
- Latest provisional DECC estimates show that at least £35 billion has been invested in increased electricity infrastructure since the start of 2010.
- Commercial agreement reached between the Government and EDF Group on the key terms of a proposed investment contract for the first new nuclear power station in the UK in a generation at Hinkley Point C in Somerset.
- Action is underway to ensure consumers are moved off poor-value dead tariffs, to limit the number of tariffs which suppliers may put on the market and to require consumers to be given clearer, more personalised information on their energy bills so they can compare and switch more easily.
- Over 1.2 million of the lowest income pensioners are being provided with £135 off their fuel bills in winter 2013/14 through the Warm Home Discount scheme.
- Since January 2013, 85,177 Green Deal assessments have been carried out and there have already been nearly 245,000 measures installed under the Energy Company Obligation scheme.
- 167 new licences have been awarded through the most successful North Sea offshore licensing round to date.
- An increase in benefits from developers to communities hosting onshore windfarms in England, from £1,000/MW of installed capacity per year, to £5,000/MW per year for the lifetime of the windfarm has been announced.
- Worked with industry to ensure communities will benefit from shale development in their area through a Community Engagement Charter, which sets out the benefits that will be paid to local communities.
- Key smart meter procurements have been concluded and a licence awarded to operate the Data and Communications Company, which has signed contracts with companies to provide data and communication services worth £2.2 billion to support the mass roll out of smart meters.
- £2.9 billion has been allocated in this Spending Round to support developing countries move to low carbon, climate resilient pathways.

2. Helping consumers take control of their energy bills

Getting a better deal for consumers from the market

2.1 The UK's competitive energy market has ensured that households pay some of the lowest prices for gas and electricity in Europe. The latest figures show UK prices including tax for medium domestic gas and electricity consumers were the lowest and fifth lowest in the EU 15 respectively¹⁶ (see Chart 2).

Chart 2 - Average Domestic Energy Prices for medium consumers in EU 15, 2012 (including taxes)¹⁷



2.2 Although domestic energy prices in the UK compare well with those in other EU Member States, the Government wants to do more to ensure that consumers are able to manage their energy bills and get a better deal from the market. In November 2012 *Ensuring a Better Deal for Consumers*¹⁸ set out proposals for legislation to ensure consumers were placed on the cheapest energy tariff for their preferences. The Government then amended the Energy Bill, currently before Parliament, in March 2013 to give legislative backing to Ofgem's Retail Market Review. These amendments provide legislative powers to, amongst other things, move consumers off poor-value dead tariffs, to limit the number of tariffs that suppliers may put on the market and to require consumers to be given clear, personalised information on their energy bills so they can compare and switch.

2.3 Changes to suppliers' licence conditions have already been brought forward by Ofgem which will bring these reforms into effect as part of its Retail Market Review¹⁹ and suppliers are now starting to implement them. The Government will continue to work closely with Ofgem to evaluate the impact of the reforms. Furthermore, in recognising that sometimes

¹⁶ Quarterly Energy Prices, September 2013

¹⁷ Quarterly Energy Prices, September 2013. Please note that domestic gas prices are not available for Finland

¹⁸ Ensuring a Better Deal for Consumers: Government Response to consultation on DECC's Discussion Document, May 2013

¹⁹ The Retail Market Review – Implementation of Simpler Tariff Choices and Clearer Information, August 2013

consumers can experience poor treatment from their suppliers, the Government is taking powers in the Energy Bill that will allow Ofgem to require energy companies to compensate consumers directly when things go wrong.

- 2.4 In addition to these reforms, the Government awarded £5 million in 2012/13 to support the most innovative local authority or third sector collective switching schemes (the Cheaper Energy Together competition²⁰) aimed at leveraging customer power to secure better energy deals as well as showcasing a different approach to encouraging energy consumers to engage with the market. The competition had a particular focus on vulnerable and low income consumers. There were 31 successful projects across Great Britain and DECC is evaluating the impact of these projects to test which approaches are the most successful in encouraging consumers to sign up.
- 2.5 While Ofgem is already introducing changes to ensure that there are fewer, simpler tariffs, it is also doing more to help consumers switch supplier, by making the process much easier. As part of their Retail Market Reforms, Ofgem is introducing changes to the design of energy bills to give consumers the information they need to switch more easily and quickly. Ofgem will monitor the effectiveness of the changes already made and will work with the Government, including Cabinet Office's Behavioural Insights Team, to ensure energy bills promote even easier switching and consumer engagement. In addition, the Government has challenged the industry for their assessment of what needs to be done, and how quickly it can be done, to move to a switching period of 24 hours. The Government will also be taking forward work to look at requiring energy companies to provide key data, including consumption data, securely to third parties as part of the 'midata' initiative. The energy industry has already taken the lead by providing customers with this data, but allowing it to be passed to third parties such as switching sites will ensure that consumers can get more accurate quotes for their energy bills without providing lots of information. Furthermore, suppliers will be required to put Quick Response (QR) codes, or similar, on bills so that smartphone users can scan a code and instantly see available tariffs that will save them money.
- 2.6 Competitive energy wholesale markets with low barriers to entry and growth are underpinning drivers of strong retail market competition and ultimately lower prices for consumers. It is critical that Ofgem tackles the barriers to entry and that the markets are able to support a wide range of market participants and business models. The electricity wholesale market is characterised by poor forward market liquidity. This is in part a product of the extent of vertical integration of energy companies which has developed since the early 2000's. Vertical integration is both a cause of and a response to poor liquidity.
- 2.7 There have been significant improvements in day-ahead market liquidity in recent years, but forward market liquidity remains a key concern. Ofgem has now set out an ambitious package of measures to secure day-ahead liquidity and to promote significantly improved forward market liquidity²¹ in order to enable small and independent market participants to access the market in ways that meet their trading needs. The Government supports Ofgem's process and hopes to see continuing engagement from industry in ensuring the detailed proposals are effective. The Energy Bill includes powers that will enable the Government to step in, in the event that Ofgem's process is frustrated or delayed.

²⁰ Full list of projects available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/139552/decc_local_authority_competition_2012_13_projects_awarded_funding.pdf

²¹ Ofgem's consultation on Wholesale power market liquidity: final proposals for a 'Secure and Promote' licence condition, June 2013

- 2.8 Continuing to monitor the behaviour of market participants and proposing options for enhancing competition is imperative to the functioning of the markets and must be done in a transparent way. The Government has announced that Ofgem will undertake an annual review into the state of competition in the energy markets. Ofgem will consult fully on the metrics they will use and will work with first the Office of Fair Trading and then drawing, as far as possible, on the expertise of the new Competition and Markets Authority when it is established in April 2014, with the first assessment to be completed by spring 2014. This will also set out what reforms are underway to further enhance competition and any additional steps that should be taken.
- 2.9 There is a need for greater clarity on financial flows within the industry to help rebuild trust. Ofgem's requirement for the major suppliers to separate out accounts for their supply business from their generation business has been a step change in transparency, helped by Ofgem's own publication of a factsheet that provides analysis of these statements. However more needs to be done to understand the finances of the suppliers and ensure they are communicated transparently, where appropriate. So the Government is asking Ofgem to deliver a full report on the transparency of financial accounts of the vertically integrated companies and ways this could be improved.

Strategy and Policy Statement

- 2.10 The Energy Bill includes provisions for a new statutory Strategy and Policy Statement (SPS), which will set out the Government's strategic priorities for energy policy and define policy outcomes where Ofgem is considered to have an important role in delivery. Ofgem will be required to have regard to these priorities, carry out regulatory functions in a manner best calculated to achieve the policy outcomes and to report on its proposed strategy to do so. Once the Energy Bill has received Royal Assent, the Government intends to consult on the detailed content of the SPS before it is laid before Parliament.

Supporting the vulnerable

- 2.11 Poorer households are typically hit hardest by energy price rises. Tackling fuel poverty is therefore a Government priority: ensuring that people, especially those in low income and vulnerable households, are able to keep warm in their homes.
- 2.12 In July 2013, following an independent review by Professor Sir John Hills and a public consultation, the Government announced the intention to adopt a new definition of fuel poverty. This finds a household to be fuel poor if it is below the official poverty line and it has higher than typical energy costs. This new definition represents a better way of measuring fuel poverty. It gives new insight, supplementing understanding of how widespread fuel poverty is with an awareness of how badly affected households are. It also opens up the possibility of targeting resources more effectively towards those households that most need support.
- 2.13 The Government has published a framework for future action on fuel poverty²² and is seeking through the Energy Bill to put in place a new fuel poverty target. This overall approach represents an important recommitment to tackling the major, structural problem of fuel poverty.
- 2.14 Beyond this, a range of policies are already in place to ensure there is targeted support for low income and vulnerable households:

²² Fuel Poverty: a Framework for Future Action, July 2013

- Through the **Warm Home Discount scheme**, over 1.2 million of the lowest income pensioners will get £135 off their electricity bills in winter 2013/14, 1.16 million of them automatically. The scheme will help around two million households in total this year; and the Government has committed to extending it to 2015/16 with an increased spend of £320 million.
- Under the **Energy Company Obligation** scheme energy suppliers will spend around £540 million to fund energy saving home improvements in around 230,000 low income and vulnerable households each year to 2015²³.
- Through the local authority fuel poverty competition, £31 million was awarded to 60 projects involving 169 local authorities delivering valuable support to low income and vulnerable households across England.
- The Government is providing **Cold Weather Payments** to low income and vulnerable households on certain benefits in areas experiencing periods of very cold weather. These payments will remain at £25 for each qualifying period²⁴ for the duration of this Government. In 2012/13, 5.8 million Cold Weather Payments were made at a cost of over £146 million.
- Direct from the Government, all pensioner households aged up to 79 years will get a tax free £200 **Winter Fuel Payment** in winter 2013/14 (£300 for those aged over 80). These payments helped over 12.5 million older people in over 9 million homes in winter 2012/13 at a cost of £2.15 billion.
- The Government has provided £900,000 in 2013/14 to fund the creation of the **Big Energy Saving Network**. The Network pools the expertise of a number of trusted third sector organisations and aims to deliver proactive, assisted action encouraging vulnerable consumers to engage with the energy market and realise the savings possible through switching tariff or supplier.

Energy Efficiency

- 2.15 It is now more important than ever to get more for less, as it is those economies that are the most efficient and the greenest that will prosper. There remains significant untapped cost-effective energy efficiency potential in the UK economy. DECC estimates that socially cost-effective investment in energy efficiency could save 196 TWh²⁵ in 2020²⁶. The *Energy Efficiency Strategy: the Energy Efficiency Opportunity in the UK*, published in 2012, set out the direction of travel over the coming decades. It identified the four key market barriers to wide-scale energy efficiency take-up and the policy initiatives that the Government is introducing to ensure that these barriers are overcome so that the untapped potential is realised. Since the publication of the 2012 strategy, the Government has taken action to address the barriers identified.
- 2.16 In January 2013 the **Green Deal** was launched, a world first in energy efficiency programmes. It is a 20 year programme with key objectives to boost long term investment and growth in the energy efficiency products and service sectors and deliver energy efficiency improvements across Great Britain. Since its introduction in January the Green Deal has been steadily gaining momentum and already 85,177 Green Deal assessments have been carried out (as of 30 September 2013), whilst the supply chain is continuing to grow. As of the end of September, there were 107 authorised Green Deal providers and 1,853 organisations accredited to carry out installations.

²³ Energy Company Obligation – “In Use Factors” Consultation, August 2012: page 4, paragraph 5.

²⁴ Qualifying period means payments will be made when the local temperature is either recorded as, or forecast to be, an average of zero degrees Celsius or below over 7 consecutive days between 1 November and 31 March

²⁵ TWh means Terawatt hours

²⁶ The Energy Efficiency Strategy: The Energy Efficiency Opportunity in the UK, November 2012

- 2.17 The introduction of the Green Deal is an opportunity for growth and building localised markets for the installation of energy efficiency measures. It is already helping consumers and will help businesses to cut waste and the cost of their bills, whilst reducing their energy demand and carbon emissions. To drive early uptake of the Green Deal, the Government has established incentive schemes, including:
- A cashback offer: the initial £40 million phase of which is still running and by September 2013 had supported the installation of 6,720 measures; and
 - £23 million of funding targeted at cities and local authorities to support Green Deal activity, with a further £20 million currently being bid for.
- 2.18 The new Green Deal Finance Company is ensuring that finance is available to Green Deal Providers to draw on when they are ready to do so. This is about creating a dynamic market, supporting new Providers to enter the marketplace as quickly as possible by minimising the cost of doing so. It also ensures that the necessary technical guidance is available to support the development of solid Green Deal Plans. Green Deal finance is just one option available to consumers to finance the installation of measures and has only been available since May. Whilst numbers of Green Deal Plans are relatively low, already a number of companies are writing them and many more are expected to be active in the market by the end of 2013.
- 2.19 The Government is committed to raising awareness and understanding of the Green Deal and has invested £2.9 million in a marketing and communications campaign. The Energy Saving Advice Service has also been established, which will ensure there is an impartial source of advice for consumers enquiring about the Green Deal.
- 2.20 To work alongside the Green Deal, the Government introduced the new Energy Company Obligation (ECO) in January 2013 too. As set out above, ECO (which replaced the previous Carbon Emissions Reduction Target, Community Energy Saving Programme, and Warm Front schemes) forms part of the Government's programme to tackle fuel poverty. ECO provides additional support for packages of energy efficiency measures, including insulation for harder to treat properties, which are unlikely to be fully financeable by Green Deal finance. It provides insulation and heating measures to low income and vulnerable households, and to low income communities. Provisional figures²⁷ show that since its introduction in January there have been nearly 245,000 measures installed under ECO (as of 31 August 2013), with 215,705 households benefitting from one or more ECO measures.
- 2.21 To ensure that both the Green Deal and ECO continue to stimulate the energy efficiency market, the Government will be implementing an Evaluation Strategy. This will include an assessment of the effectiveness of the existing delivery framework for both programmes which will help identify improvements where necessary.
- 2.22 Looking ahead, the Government is keen to build on the momentum behind energy efficiency and to raise awareness of its benefits. Later in 2013 the Government expects to publish a progress update on last year's Energy Efficiency Strategy, which will focus on the implementation of key commitments and priorities over the next 12 to 24 months. Under the EU Energy Efficiency Directive, the UK has set an indicative target for energy consumption in 2020 equivalent to reducing final energy demand by 18% relative to the 2007 baseline. Progress against this target is on track: 2012 final energy consumption (on a temperature corrected basis) was 1% lower than in 2011.

²⁷ Provisional ECO figures are subject to review by Ofgem

Energy Efficiency in the Public Sector

2.23 The Government recognises the public sector needs to lead by example in reducing its energy consumption. As part of the Greening Government Commitments, central Government has committed to reducing greenhouse gas emissions by 25% for 2014/15 from the 2009/10 baseline for the whole estate and business-related transport. In 2011/12, the most recent year for which data has been published, a 12% reduction of greenhouse gas emissions was reported across Government, and eight out of 21 departments had already met or exceeded the 2015 target.

Smart Meters

2.24 The mass roll out of smart meters into homes across Great Britain from 2015 will put an end to estimated billing, help households manage their energy consumption, make switching between suppliers easier and drive a more vibrant and competitive market. Near-real time information from smart meters will help put consumers in control of their bills, leaving them better placed to adopt efficiency measures available under the Green Deal and offset future price rises. The introduction of smart meters will mean energy networks will have better information upon which to manage and plan current activities, and assist the move towards smart grids (see paragraph 3.58).

2.25 Smart meter roll out aims to replace 53 million meters with smart electricity and gas meters in domestic properties, and smart or advanced meters in smaller non-domestic sites, impacting approximately 30 million premises. This will deliver a positive net present benefit of £6.7 billion over the period to 2030²⁸.

2.26 Over the last year work has continued to develop the technical, commercial, regulatory and policy framework. In early 2013 the Government committed to reviewing the programme timetable. Following discussions with industry it was decided that more time was needed for the design, build and test stages to ensure a quality experience for consumers. The roll out is now expected to begin in autumn 2015 and to be completed by the end of 2020.

2.27 There have been a number of key successes over the last year across the smart meter programme. The first version of metering equipment technical specifications has been designated and the second version published. The first tranche of the Smart Energy Code has come into force and the procurement competitions have been concluded with a licence awarded to operate the Data and Communications Company (DDC), which has signed contracts with three companies worth £2.2 billion for the provision of data and communication services to support the roll out of smart meters. A number of policy decisions have also been taken that will help industry to gain valuable learning and experience to inform preparations for mass roll out, which allow consumers to receive the benefits of smart metering now, and for these to continue if customers choose to change supplier.

2.28 Consumers are at the heart of the implementation programme and the following supporting arrangements are now in place: an Installation Code of Practice²⁹; a Data Access and Privacy framework³⁰; a Consumer Engagement Strategy³¹; and a supplier funded Central Delivery Body (CDB). Established in June 2013 the CDB will provide centralised consumer engagement activities to support those of energy suppliers. DECC will be working with the

²⁸ Smart meter roll-out for the domestic and small and medium non-domestic sectors (GB) Impact Assessment, January 2013

²⁹ Smart Metering Installation Code of Practice, April 2013

³⁰ Smart Metering Implementation Programme: Government response to the Consultation on Data access and privacy, December 2012

³¹ Smart Metering Implementation Programme: Government Response to the Consultation on the Consumer Engagement Strategy, December 2012

CDB to ensure consumers increasingly understand and demand the benefits smart meters have to offer in the build-up to mass roll out.

- 2.29 The next year will see a focus on the design, build and test phases of the programme, with the newly appointed data and communications providers coming together for the first time with service users such as suppliers and network operators. This is backed by new governance arrangements that will operate alongside the development of the Smart Energy Code which sets out the commercial and technical arrangements for the DCC system and its users.

Community Energy

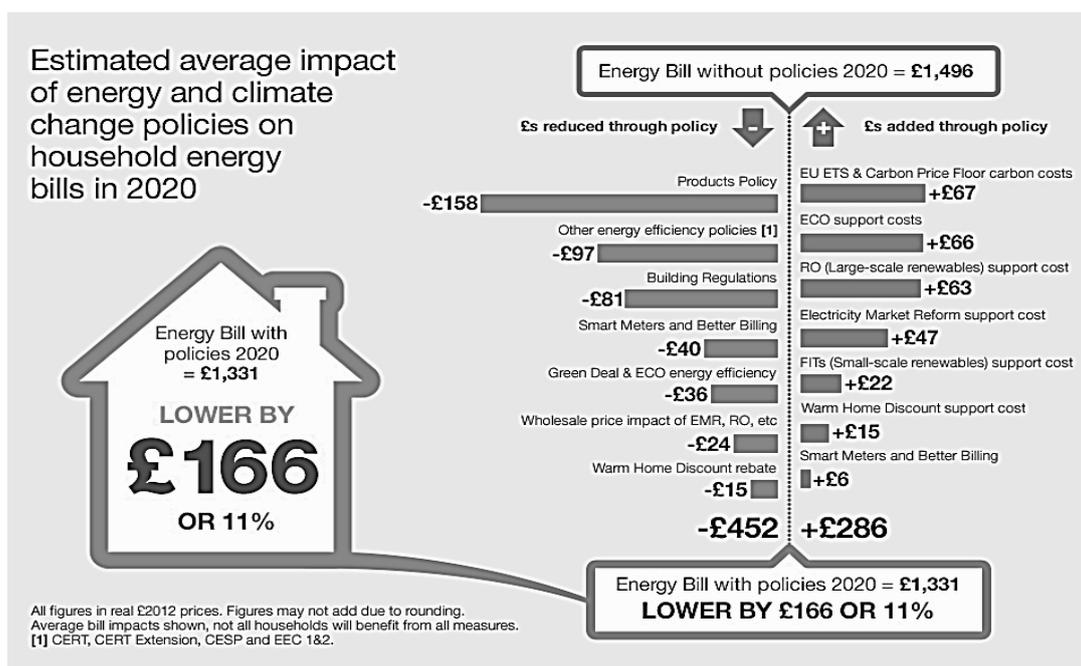
- 2.30 The Government is committed to giving more local communities the opportunity to get involved in reducing the energy they use, managing demand and collectively purchasing energy to get a better deal, as well as generating their own energy. Later in 2013 the Government intends to publish a Community Energy Strategy. This will identify the potential of community energy projects in the UK to bring benefits to communities, whilst helping to tackle climate change and maintain energy security. It will consider how to help community energy projects access finance and navigate the planning and regulatory systems.
- 2.31 In June 2013 DECC and the Department for Environment, Food and Rural Affairs jointly launched the £15 million Rural Community Energy Fund, which helps rural communities in England with the up-front costs of developing their own renewable energy schemes. Projects which demonstrate a legacy of economic and social benefits to the community can apply for up to approximately £150,000 for feasibility and pre-planning work to ready projects for private investment.

Impact of energy and climate change policies on energy bills

- 2.32 In March 2013 DECC published an assessment of the *Estimated impacts of energy and climate change policies on energy prices and bills*³². This estimated that by 2020 households will, on average, save 11% (or £166, in real 2012 prices) on their energy bills compared to what they would have paid in the absence of policies (see Chart 3).
- 2.33 The analysis underpinning this report reflects the impact of policies supporting low carbon technologies, including Electricity Market Reform, which is expected to be more than offset by the impact of policies that help people to save energy, or use it more efficiently.
- 2.34 The role of energy efficiency policies in cutting household bills is significant. For example, by 2022 it is expected that around half of UK households will have at least one major insulation measure (loft, cavity wall or solid wall insulation) delivered through policies, saving households from £25 to £270 or more off their annual heating bill. Further households could also benefit from efficiency improvements if they choose to take up a Green Deal. Tighter efficiency standards for household electrical appliances too will save households money.
- 2.35 DECC will update the analysis of the impact of policies on energy prices and bills in early 2014.

³² Estimated impact of energy and climate change policies on energy prices and bills, March 2013

Chart 3 - Estimated average impact of energy and climate change policies on household energy bills in 2020



Supporting Businesses and Energy Intensive Industries

- 2.36 The Government is supporting UK industry to implement energy efficiency measures to reduce emissions and help manage the impact of rising energy prices. During 2013 the Government has taken steps to simplify business energy efficiency policies to reduce overlap and administrative burdens on industry. The overlap between **Climate Change Agreements (CCAs)**, the **EU Emissions Trading System (EU ETS)** and the **CRC Energy Efficiency Scheme** have been removed; and the latter has been simplified too. The savings to industry are estimated to be £2.4 million for CCAs over the nine years from 2011 to 2020³³ and a 55% reduction in CRC administration costs³⁴.
- 2.37 DECC's prices and bills analysis from March 2013 indicates that through some policy measures, prices have risen for businesses. Other components of energy prices, such as network costs and supplier costs and margins, are typically lower per unit of energy for businesses than households due to economies of scale which results in larger percentage impacts from policies. Impacts on businesses will vary depending on, amongst other things, the mixture of gas and electricity use and the extent to which on-site generated electricity is consumed. Policies are estimated to be adding between 1% and 14% to energy bills for energy-intensive users in 2013, and between 6% and 36% in 2020.
- 2.38 The Government is aware of the difficulty this can cause for some businesses and is therefore taking strong action to limit these impacts as much as possible. For example through: a £250 million energy intensive industry compensation package; the new **Energy Saving Obligation Scheme (ESOS)**; the exemption of mineralogical and metallurgical processes from the Climate Change Levy (under CCAs); consulting on exempting some energy intensive industries (EIs) from some of the costs of Contracts for Difference; and a range of measures to help small and medium enterprises (SMEs) and small carbon emitters. The March 2013 analysis on the estimated impacts of policies on prices and bills

³³ CCA Final Impact Assessment, January 2012

³⁴ CRC Simplification Final Impact Assessment, February 2013: page 4

does not take account of these measures because the details of them have not yet been finalised. However, they are expected to have a significant impact on reducing the costs of policies for eligible businesses.

- 2.39 The Government is introducing ESOS to comply with Article 8 of the EU Energy Efficiency Directive. It will target all aspects of energy use in large enterprises³⁵, including buildings, transport, and industrial processes. ESOS will address a gap in the existing policy landscape by providing, through energy efficiency assessments, bespoke recommendations which will support businesses to better understand and manage their energy use. It is estimated that organisations who take up recommendations from the assessments will benefit from bill savings of £56,400 per year on average³⁶. The Government intends to conduct an initial review of the effectiveness of ESOS in 2016, following completion of the first round of assessments.
- 2.40 The £250 million energy intensive industry package announced in the Autumn Statement 2011 is to help manufacturers manage increased energy costs. The package includes measures to compensate for the indirect emission cost due to the EU ETS and the Carbon Price Floor (CPF), subject to EU State aid rules; and an increase in the rate of relief to 90% from the Climate Change Levy for electricity under CCAs. Paragraph 3.27 provides more detail on the CPF.
- 2.41 In May 2013 the European Commission granted State aid clearance for £113 million EU ETS compensation element of the package and the Government published guidance on how to apply. The Department for Business, Innovation and Skills has provided compensation to various eligible EIs since August 2013. The Government is continuing to engage with the Commission to obtain the necessary State aid clearance for the CPF compensation.
- 2.42 Since the 2012 Annual Energy Statement, the Government has also confirmed its intention to exempt certain EIs from some of the costs of the Contract for Difference regime, subject to State aid approval. It has also announced an exemption for energy used in metallurgical and mineralogical processes from the Climate Change Levy from 1 April 2014.
- 2.43 The Government is helping SMEs and smaller carbon emitters to manage their energy consumption. The infrastructure has been in place to enable non-domestic advisors to create Green Deal Advice Reports from January 2013 that can identify which energy efficiency measures non-domestic premises can benefit from. The roll out of smart or advanced meters to small and medium non-domestic sites will help put these consumers in control of their energy bills and leave them better placed to adopt energy efficiency measures.
- 2.44 Furthermore, there is now an opt-out from the EU ETS for small emitters (<25ktCO₂e a year) and hospitals, which means they no longer have to surrender EU Allowances for their emissions but instead have to meet a fixed emissions reduction target. Whilst still maintaining the incentives for emission reductions, this will reduce administrative burdens through simplified monitoring and reporting, and therefore offer savings to UK small emitters of up to £39 million over Phase III of the EU ETS (2013-2020).

³⁵ Note: as defined by the EU Energy Efficiency Directive, energy audits will be mandatory for all non-SMEs (large "enterprises"). SMEs are defined as "enterprises" which employ fewer than 250 persons and which have an annual turnover not exceeding EUR 50 million, and/or an annual balance sheet total not exceeding EUR 43 million.

³⁶ Energy Saving Opportunity Scheme Impact Assessment (IA), May 2013

2.45 Additionally, DECC is taking a project forward with ENWORKS³⁷ to better understand the barriers to energy efficiency faced by SMEs. The project will conclude in February 2014 and will provide insight into what motivates SMEs to implement energy efficiency measures and help enable improvements to existing support. The Government has also set up a working group to address the issues facing small business energy consumers. The group will present its findings to the Prime Minister in autumn 2013.

³⁷ More information on ENWORKS can be found at: www.enworks.com

3. Unlocking investment in the UK's energy infrastructure

Supporting UK Economic Growth

- 3.1 Energy has a key role to play in infrastructure investment and promoting UK economic growth. Upgrading the UK's energy infrastructure, increasing energy efficiency and shifting to low carbon are essential in helping to make the economy more secure and prosperous. The Government's National Infrastructure Plan³⁸ and the more detailed policies that give it effect, such as the industrial sector strategies (see paragraph 3.10) and Electricity Market Reform (EMR), set the conditions to support industrial growth across key sectors of the economy including energy.
- 3.2 Provisional DECC estimates suggest that at least £35 billion has been invested in increased electricity infrastructure since the start of 2010 to mid 2013, with a further £20 billion of major generation projects having achieved development consent since November 2012 (see paragraph 3.4 for details). In addition, through the Final Investment Decision Enabling for Renewables process 23 applications for 26 investment contracts are currently being evaluated by DECC for a range of technologies, including onshore wind, offshore wind, and biomass.
- 3.3 Unlike many other sectors, energy infrastructure investments are ready to begin now, without adding to the Government's balance sheet. For example, since November 2012:
- A consortium including iCON Infrastructure Partners LL, EEA and 2OC agreed to invest £70 million in the construction of 19 MW³⁹ Combined Heat and Power (CHP) facility in Beckton, East London⁴⁰.
 - Renewable Infrastructure Group raised £300 million in a green initial public offering in July 2013. The proceeds will be used to acquire a 276 MW portfolio of 14 operational onshore wind farms and four solar photo-voltaic (PV) projects located in the UK, France and Ireland.
 - Denmark's biggest pension fund, PensionDanmark and a Danish subsidiary of Mitsui, have jointly committed £160 million to fund the construction of the straw-fuelled biomass plant, Brigg Renewable Energy Plant, providing energy to supply 70,000 British households⁴¹.
 - Around £200 million has been invested in the £1 billion Western Link joint venture between National Grid and Scottish Power Transmission, which will bring renewable energy from Scotland to homes and businesses in England and Wales via a 420km, 2.2 GW⁴² High Voltage Direct Current subsea cable from Hunterston in Scotland to Deeside in Wales⁴³.
- 3.4 DECC has consented seven major energy infrastructure applications since November 2012. This amounts to over 5 GW generating capacity, enough electricity to supply over six million homes, across a mix of low carbon technologies including nuclear and renewable energy.

³⁸ More detail on the National Infrastructure Plan can be found at: <https://www.gov.uk/government/organisations/infrastructure-uk/series/national-infrastructure-plan>

³⁹ MW means megawatt

⁴⁰ Announcement: iCON invests in UK CHP facility, 4 April 2013

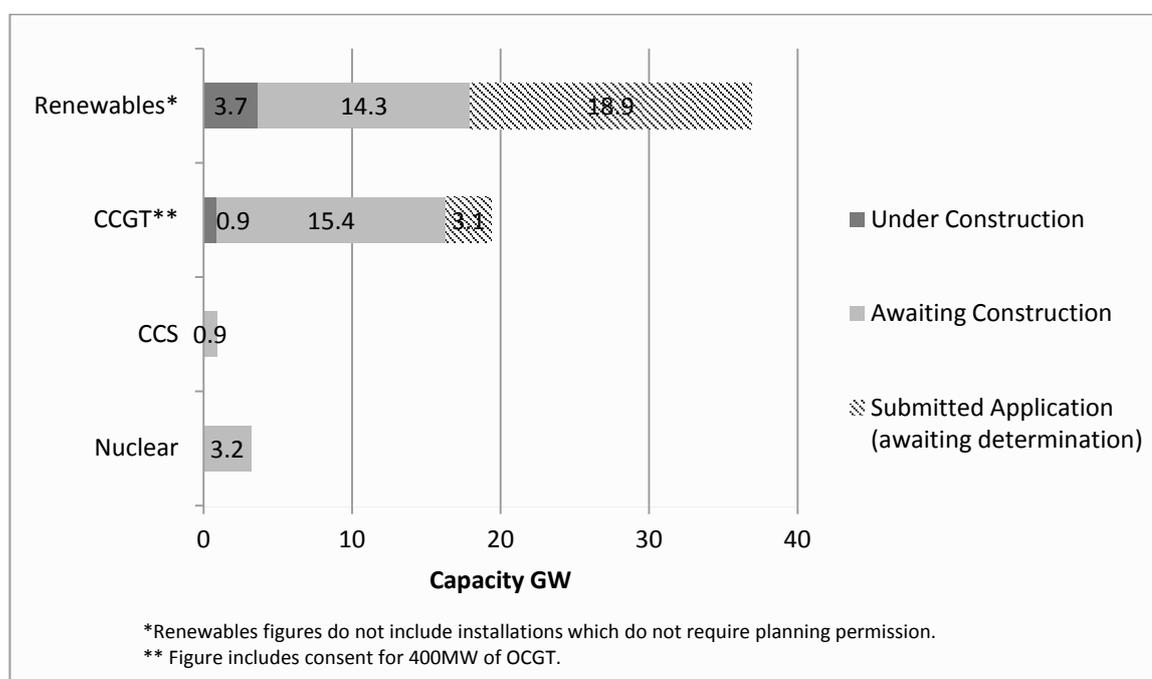
⁴¹ Announcement: PensionDanmark to invest nearly £130m in UK biomass power plant, 14 August 2013

⁴² GW means gigawatt

⁴³ More information can be found on the Western Link project website: <http://www.westernhvdclink.co.uk/>

See Chart 4 for the current planning pipeline. DECC has also implemented further reforms to streamline consenting frameworks for major energy infrastructure.

Chart 4 - Pipeline of planning applications for electricity power generation, September 2013⁴⁴



3.5 Increasing the deployment of renewable energy is supporting growth and prosperity in the renewable sector, and will improve energy security by diversifying the UK energy supply mix and helping to insulate consumers from fossil fuel price spikes. Recent data⁴⁵ shows that the UK continues to be an attractive destination for renewable energy investment. It is still the most attractive in the world for offshore wind investment, the fourth most attractive in the onshore wind index and the fourth most attractive for all renewables out of 40 countries. Between January 2010 and April 2013, DECC recorded planned private sector investment in large scale renewable energy of over £29 billion, with the potential to support around 30,000 jobs (see Chart 5)⁴⁶.

3.6 Public support is vital to securing a stable investment climate for renewable projects and DECC's latest Public Attitudes Tracker shows that 76% of the public support renewable energy⁴⁷. The Government is taking action to ensure that high levels of support are maintained and that the particular circumstances of individual projects are carefully considered. The various actions being undertaken in response to the onshore wind call for evidence will ensure that the views of local communities are heard, that they are at the heart of decision making, and supported by a package of community benefits⁴⁸. For example, the Government is introducing compulsory pre-application community engagement for more significant onshore wind developments and has published new planning practice guidance

⁴⁴ Consents and planning applications for national energy infrastructure projects: This chart is based on information correct as of 26 September 2013.

⁴⁵ Renewable energy country attractiveness index, August 2013

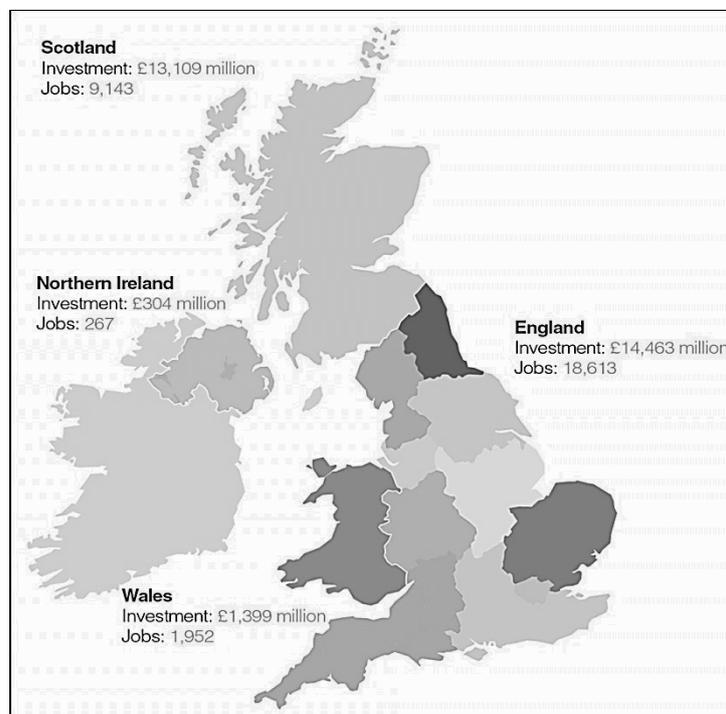
⁴⁶ These figures are based on announcements made by industry between January 2010 and April 2013. Projects recorded will vary and includes projects in planning process, under construction as well as in operation

⁴⁷ DECC Public Attitudes Tracker – Wave 6: Summary of key findings, September 2013

⁴⁸ Onshore Wind Call for Evidence – Government Response to Part A (Community Engagement and Benefits) and Part B (Costs), June 2013

on renewable and low carbon energy. This will help ensure that development is approved only in the right locations, will reassure local communities that their local environment is properly considered and foster new, future investment in renewables.

Chart 5 - Planned renewables investment and jobs announced (January 2010 – April 2013)⁴⁹



- 3.7 Greater energy and resource efficiency belongs at the heart of a low carbon economy too. The Green Deal alone is expected to support up to 60,000 jobs in the insulation sector by 2015⁵⁰. Sales in the energy efficiency sector are projected to grow by around 5% per year between 2010/11 and 2014/15, and the Government's policies such as the Renewable Heat Incentive (RHI), the roll out of smart meters and the Green Deal are spurring the development of markets in technologies and services that save the consumer money. Already the domestic RHI is expected to support industry growth to deliver around 750,000 renewable heating systems by 2020/21⁵¹ and the forthcoming introduction of the Energy Saving Opportunity Scheme will help encourage companies to invest in energy efficiency measures as well.
- 3.8 To accelerate additional capital into green infrastructure and the low carbon economy, the **UK Green Investment Bank (UKGIB)** was established in October 2012 by the Government. It has already committed over £694 million into green projects and has identified non-domestic energy efficiency and the Green Deal as a priority sector. The Bank works to a 'double bottom line' of achieving both significant green impact and strong financial returns with the aim of demonstrating that such investment makes sound commercial sense and helping to mobilise additional private sector capital. Every £1 invested by the UKGIB has mobilised approximately another £3 of investment from other sources. Commitments to date include:

⁴⁹ Announcement at the All Energy Conference in Aberdeen, 22 May 2013

⁵⁰ Final Stage Impact Assessment for the Green Deal and Energy Company Obligation, June 2012: page 174

⁵¹ The Impact Assessment published alongside the Domestic Renewable Heat Incentive, July 2012 document suggests that we might support around 750,000 renewable heating systems by 2020 through the domestic RHI, predominantly installed off the gas grid

- £125 million senior debt facility to support the roll out of the Green Deal, providing long term finance for the aggregation and refinancing of consumer Green Deal Plans.
- £18 million to finance investment in energy efficiency at Addenbrookes hospital in Cambridgeshire expected to generate substantial cost savings and reduction in CO₂ emissions over the project's 25 year operational term.
- £57.4 million in the Rhyl Flats offshore wind farm off north Wales.
- £100 million for the conversion of Drax power station in Selby, North Yorkshire to run partly on biomass fuel resulting in substantial greenhouse gas emissions savings.

- 3.9 Drax Group Plc has also secured a UK Guarantee to underpin private funding for the conversion⁵². The UK Guarantee scheme was launched by the Government in July 2012 to accelerate infrastructure projects struggling to access finance and energy has been identified as one of the priority sectors⁵³.
- 3.10 In supporting UK growth, the Government is committed to the development of sustainable and competitive supply chains. Working in partnership with industry, the Government has launched three outward facing energy-focused industrial strategies during 2013⁵⁴. These strategies aim to ensure innovative and cost-competitive supply chains are able to develop in time to serve growing parts of the energy industry. Focused on oil and gas, nuclear and offshore wind, the strategies identify practical measures to develop and grow a competitive UK supply chain by focussing on specific areas such as skills, technology and finance. The Nuclear Supply Chain Action Plan⁵⁵, also developed with industry and published in December 2012, seeks to help the UK's supply chain cultivate opportunities in both the domestic and global nuclear sectors, which in turn will provide long term jobs and economic benefit.
- 3.11 Specifically under EMR the Government is intending to require developers of low carbon generation projects above a certain size to produce a supply chain plan that must meet a minimum standard before they can apply for a Contract for Difference. Plans will be expected to cover aspects such as the competitiveness of the procurement approach utilised, and any improvement in skill levels and innovation in the supply chain as a result of the project. Further information is provided in the Government's consultation on proposals for the implementation of EMR, and detailed proposals will be published in November 2013 for consultation.
- 3.12 Innovation is fundamental not only to building the UK supply chain, but also to driving down the costs of low carbon technologies to meet the UK's challenging carbon reduction targets and to ensure low carbon energy is affordable for consumers. In 2011/12 UK public sector energy research, development and demonstration spend was £358 million. DECC has a £150 million programme of innovation support from 2011 to 2015 for key low carbon technologies, including: energy efficiency in buildings; marine; electricity storage; bioenergy; and offshore wind. This complements a wider package of support offered by the members of the Low Carbon Innovation Coordination Group worth more than £1 billion from 2011 to 2015. This Group is currently developing a Low Carbon Innovation Strategy, setting out why low carbon innovation is so crucial and how the public sector can support it.

⁵² UK Guarantee Scheme - Drax announcement on 24 April 2013

⁵³ UK Guarantee Scheme – launch announcement on 18 July 2012

⁵⁴ More information on the three energy industrial sector strategies can be found at: <https://www.gov.uk/government/organisations/department-for-business-innovation-skills/series/industrial-strategy-government-and-industry-in-partnership>

⁵⁵ The Nuclear Supply Chain Action Plan, December 2012

Electricity Market Reform

- 3.13 Key to delivering the Government's high level energy goals is reform of the electricity market. EMR will deliver greener energy and diverse, reliable supplies, whilst minimising costs to consumers. Through the Energy Bill, introduced into Parliament in November 2012, the Government is legislating for **Contracts for Difference (CfD)** that will provide long term support for all forms of low carbon generation, including nuclear, renewables and Carbon Capture and Storage (CCS), which will reduce exposure to volatile wholesale electricity prices and provide a steady revenue stream for investors. With new measures such as the provision for setting a decarbonisation target range for the electricity sector and support for electricity demand reduction, extra certainty and incentives are being provided in the reforms.
- 3.14 Subject to completing its Parliamentary passage, the Energy Bill will provide the legislative framework to implement the key aspects of EMR. The Government is consulting on the proposals for the implementation of EMR⁵⁶. The consultation, published in early October 2013, sets out how the powers within the Energy Bill are intended to be used to allow EMR to meet its objectives, and provides an overview of key EMR mechanisms (including CfDs and the Capacity Market). It also aims to provide an explanation of how the reforms will work in practice and consults on specific implementation proposals. Secondary legislation will be subject to Parliamentary scrutiny in 2014 and it is expected to enter into force in summer 2014.
- 3.15 During 2013 the Government has made progress in giving industry the clarity and confidence in price support mechanisms needed for investment in new electricity projects under the EMR regime. Key announcements have been brought forward on:
- the Levy Control Framework limits for each year between 2014/15 and 2020/21, which sets out the aggregate levels of future support available to low carbon generation in the UK⁵⁷;
 - draft CfD strike prices for renewables; and
 - CfD terms with details of how developers will go about securing a contract.
- 3.16 These publications were designed to give developers up to a year's visibility on intended strike prices before they come into force in 2014 and help enable final investment decisions to be made ahead of the full EMR regime going live where appropriate. The Government is also seeking new powers in the Energy Bill to set a 2030 decarbonisation target range for the electricity sector. This power can be exercised following advice from the Committee on Climate Change on the level of the fifth carbon budget that covers the corresponding period (2028 to 2032) and when the Government has set this budget in law, which is due to take place in 2016.
- 3.17 The **draft strike prices for renewables**⁵⁸, which were informed by analysis from National Grid, come down over time. So as technology costs come down, consumers will be paying less. These strike prices are set to be consistent with the levels of support currently provided by the UK's existing support scheme for large scale renewable generation, the Renewables Obligation (RO). They have been adjusted to take into account the different contract length and the benefit of the CfD in reducing a developer's cost of capital.

⁵⁶ Electricity Market Reform: Consultation on Proposals for Implementation, October 2013

⁵⁷ Appendix A of Spending Review Announcement on Electricity Market Reform, June 2013

⁵⁸ Appendix B of Spending Review Announcement on Electricity Market Reform, June 2013

- 3.18 The **draft EMR Delivery Plan**⁵⁹ explains the robust methodology and analysis for the draft strike prices, and sets out the proposed reliability standard for the Capacity Market (see paragraph 3.25). Following consultation, the final EMR Delivery Plan is expected to be published in December 2013. The draft delivery plan confirms the Government's continuing ambitious plans for low carbon electricity deployment, for example, with offshore wind deployment of 8 to 16 GW by 2020⁶⁰ if cost reductions in line with those envisaged by the industry-led Offshore Wind Cost Reduction Task Force are achieved.
- 3.19 Draft **CfD terms**⁶¹, which were made available in August 2013, will form the basis for the final CfD contracts. DECC has worked with developers and investors to test the design of the CfD to ensure it provides a robust legal framework against which to secure investment in the UK. It provides value for consumers by reducing the overall costs of attracting investment and by including provisions to ensure the timely construction of low carbon generation. Final CfD terms are expected to be published by the end of 2013.
- 3.20 To help enable investment decisions ahead of the CfD regime, the Government has committed to **Final Investment Decision Enabling**. This will provide real value to eligible developers by offering investment certainty and support through 'Investment Contracts' (early CfDs). Under this process, the Government has been in discussion with NNB GenCo, a subsidiary of EDF Energy, about an investment contract for its Hinkley Point C new nuclear power plant project (see paragraphs 3.40-3.42). Separately, the Government has launched the **Final Investment Decision Enabling for Renewables** process for renewable electricity project developers⁶². Through this process, investment contracts are expected to be signed in March 2014.
- 3.21 Whilst larger energy companies with substantial resources should be able to adapt to CfDs quickly, **independent renewable generators** may benefit from extra help. To facilitate this, the Government has initiated a process to prepare the market for the introduction of CfDs by working with stakeholders to develop sample Power Purchase Agreements (PPAs) and best practice guidelines for PPA providers. This will help to reduce administrative and financial barriers for independent renewable generators and mitigate any investment hiatus.
- 3.22 However there is a risk that despite these measures, independent generators will struggle to obtain a route to market. Following extensive analysis and consultation with industry, DECC has developed proposals for an '**off-taker of last resort**' mechanism⁶³. This would provide independent generators with a backstop route to market at a specified discount to the market price, improving investor confidence. The Government has amended the Energy Bill to allow such a mechanism to be established and is currently working closely with stakeholders to develop the detailed design, with the intention of consulting on the policy in early 2014.
- 3.23 Through the Energy Bill the Government has set out a revised proposal for the legal framework and payment model for CfDs. The framework provides for a new institution, the **CFD counterparty**, which will sign private law contracts with generators that will collect funds from suppliers using revenue raising powers within the Energy Bill (the "supplier obligation") to meet the CfD payments to generators⁶⁴. The counterparty will be a limited

⁵⁹ Consultation on the draft Electricity Market Reform Delivery Plan, July 2013

⁶⁰ Consultation on the draft Electricity Market Reform Delivery Plan, July 2013, page 34

⁶¹ Electricity Market Reform – Contract for Difference: Contract and Allocation Overview, August 2013

⁶² Final Investment Decision Enabling for Renewables - Update 1: Invitation to Participate, March 2013 and Final Investment Decision Enabling for Renewables - Update 2: Investment Contract Allocation, June 2013

⁶³ More information on the Off-taker of last resort mechanism and preparatory work on the market for the CfD can be found at: <https://www.gov.uk/government/policy-advisory-groups/electricity-market-reform-emr-cfd-market-readiness-working-groups>

⁶⁴ CfD Supplier Obligation: Policy update and response to the call for evidence, August 2013

company owned by the Government and will be in place to sign and manage contracts from the time that EMR is implemented in 2014.

- 3.24 The Government, working with Ofgem and National Grid, is committed to ensuring security of electricity supply this decade and beyond, and is taking clear action where needed to maintain adequate capacity margins. Ofgem's 2013 Electricity Capacity Assessment Report shows a tightening of capacity margins in the middle of this decade. In response, Ofgem has been consulting on possible extensions to National Grid's existing suite of balancing services to minimise any risks.
- 3.25 In addition, the Government confirmed the first **Capacity Market** auction will run in 2014 for delivery of capacity from the winter of 2018/19⁶⁵, subject to State aid clearance and necessary legislation (being sought through the Energy Bill). To enable industry to prepare for implementation, further detail on the Capacity Market design has been provided⁶⁶. The Capacity Market will incentivise sufficient reliable capacity (both supply and demand side) to ensure a secure electricity supply even at times of peak demand. The Government's Response to Ofgem's Electricity Capacity Assessment Report is being published alongside this Statement, as part of the Government's Statutory Security of Supply Report 2013.
- 3.26 There is significant potential for greater electrical efficiency in Great Britain. The Government has amended the Energy Bill to enable **Electricity Demand Reduction**⁶⁷ (EDR) to be supported through the Capacity Market. There are some uncertainties however, so the Government has confirmed that at least £20 million will be made available to pilot EDR⁶⁸. The pilot will examine how businesses and other organisations that install measures like more efficient motors, air conditioning and lighting could receive financial incentives for the reduced amount of electricity they use.
- 3.27 Supporting the Government's electricity market reforms are additional measures to drive investment in low carbon power generation. The **Carbon Price Floor** was introduced in April 2013 to strengthen the carbon price signal for investors and to help the UK meet its ambitious emissions reduction targets. The **Emissions Performance Standard** (EPS) will provide a regulatory backstop on the level of emissions new fossil fuel power stations are allowed to emit. The EPS has been set at a level which supports the planning requirement that new coal-fired power stations can only be built if equipped with CCS. The EPS is a clear and unambiguous regulatory measure, signalling the Government's on-going commitment to decarbonisation and ensuring any new coal-fired power station is constructed and operated in a way that is consistent with UK decarbonisation objectives.

Renewable Energy

- 3.28 Progress continues to be made towards the UK target to source 15% of energy from renewable sources by 2020. The UK is now at 4.1%⁶⁹, up from 3.8% in 2011 and an increase of a third since 2009 (see Chart 6). Since 2011 the Government has updated the UK Renewables Roadmap annually⁷⁰, illustrating analysis and progress across the power, heating and transport sectors. The next publication is due in autumn 2013.

⁶⁵ Announcement: New energy infrastructure investment to fuel recovery, 27 June 2013

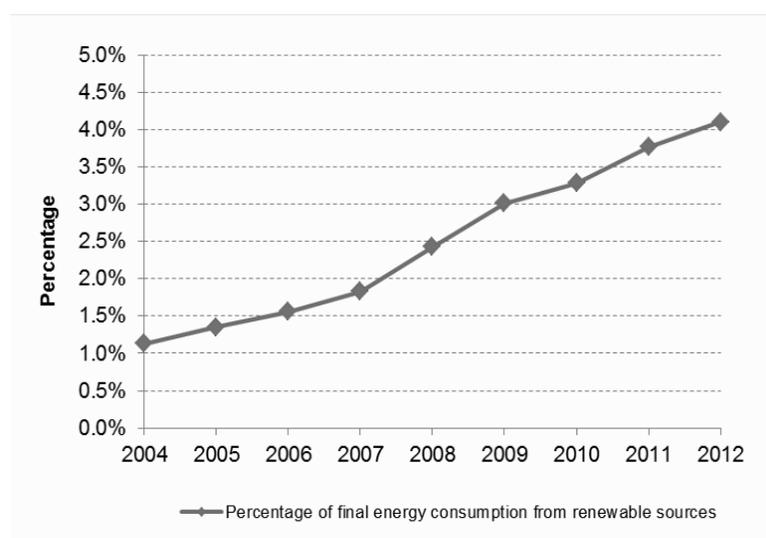
⁶⁶ Electricity Market Reform: Capacity Market – Detailed Design Proposals, June 2013

⁶⁷ Consultation on options to reduce electricity demand - Government Response to 'Electricity Demand Reduction, a consultation on options to encourage permanent reductions in electricity use', November 2012

⁶⁸ Announcement of Energy Demand Reduction pilot, September 2013

⁶⁹ Across 2011 and 2012 3.94% of UK energy came from renewable sources against an interim target of 4.04%. The difference is within the margin of error in the statistics.

⁷⁰ UK Renewable Energy Roadmap Update 2012, December 2012

Chart 6 - UK progress against 2009 EU Renewable Energy Directive

- 3.29 Recent statistics show renewables' share of electricity generation is up to a record 15%, a growth of 56% since the second quarter of 2012, and renewable electricity capacity was 19.5 GW at the end of the second quarter of 2013, which is a 38% increase on a year earlier⁷¹. The Government has a comprehensive package of support in place to drive investment in large scale renewable power generation. The **Renewables Obligation (RO)** is expected to bring forward investment in new renewable energy infrastructure following the revised RO banding levels coming into effect on 1 April 2013.
- 3.30 Moving forward, support for large scale renewable power generation investments will be through CfDs. Between the introduction of CfDs and the closure of the RO, new generators will have the option of applying for support under the regime that they feel is the most suitable. In July 2013 the Government launched a consultation on the arrangements that will apply during this transition period⁷². The consultation response is expected to be published before the end of 2013. The Government is also consulting separately on the proposal to provide additional support for renewables projects on the Scottish Islands, where they have clearly distinct characteristics to typical mainland projects⁷³. This consultation seeks views on proposals to provide additional support for onshore wind located on islands comprising the local government areas of Comhairle nan Eilean Siar, Orkney Islands Council, and Shetland Islands Council. The support proposed is in the form of a higher strike price than for onshore wind projects elsewhere in the UK. The results of this consultation will be incorporated into the final EMR Delivery Plan.
- 3.31 The Government is committed to delivering a transitional regime that provides value for money for the taxpayer. The regime of support for large scale renewables will provide stability and continuity for renewable energy investors, enhance the UK's ability to meet the legally binding 2020 renewable energy target, and maintain the UK's position as an attractive destination for investment in renewable energy. The latter is evidenced by, for example, the opening in summer 2013 of the London Array (an offshore wind farm able to generate 630 MW of electricity) and Greater Gabbard (a 140 turbine offshore wind farm).
- 3.32 Through the **Feed-in Tariffs (FiTs) scheme** for small-scale renewable electricity, there were around 424,000 confirmed installations totalling just under 2.1 GW of installed capacity

⁷¹ UK Energy Trends – Electricity, September 2013

⁷² Consultation on the Transition from the Renewables Obligation to Contracts for Difference, July 2013

⁷³ Consultation can be found at: www.gov.uk/government/consultations/additional-support-for-scottish-island-renewables

at the end of September 2013⁷⁴. The Government is confident that there will be 500,000 by the end of the fourth year of the FITs scheme. Consumers can use the Green Deal to help meet the initial costs of the scheme and they can expect to see returns over the projected lifetime of between 4.5% and 8%.

- 3.33 Under EMR the Government considers that larger community energy projects should be able to benefit from the simplicity and certainty offered by the FITs scheme. So powers are being sought through the Energy Bill to increase the 'Specified Maximum Capacity' of the FITs Scheme from 5 MW to 10 MW for community projects. Following Royal Assent to the Energy Bill, the Government will consult on the necessary amendments to the Feed-in Tariffs Order 2012.
- 3.34 The Government is taking action to enhance investment in a number of key renewable technologies. The *UK Solar PV Strategy Part 1: Roadmap to a Brighter Future*, published on 8 October 2013, shows that the UK has deployed almost 2.5 GW of solar PV. The DECC central forecast estimates that the UK is likely to reach 10 GW by 2020⁷⁵. The Government is working closely and constructively with the industry to address the key challenges to deployment such as costs and engagement with local communities.
- 3.35 Furthermore, the Government is exploring the opportunity for energy trading with other countries⁷⁶, which may offer an inexpensive source of additional renewable energy to complement domestic production. This could provide access to affordable, clean energy and large new markets for exporting energy. A final decision on trading is expected to be published towards the end of 2013.
- 3.36 The heating sector is also contributing to the UK renewable energy target. The Government's **Renewable Heat Premium Payment (RHPP)** scheme, launched in August 2011 to support the domestic sector, has been extended to run until March 2014. The Government published the details of the **Renewable Heat Incentive (RHI)** domestic scheme in July 2013⁷⁷ and intends to open the scheme for payments in spring 2014. Following a consultation in September 2012 on proposals for expanding the existing non-domestic RHI scheme, the Government intends to announce the way forward in autumn 2013, with a view to introducing any changes from spring 2014.
- 3.37 Under the non-domestic RHI as at the 30 September 2013⁷⁸ there were: 3274 applications across a range of technologies, accounting for 712 MW of capacity; of which 2395 have been accredited to the scheme, accounting for 503 MW of capacity. 446 GWh⁷⁹ of eligible heat has now been generated and paid for under the scheme. The RHPP has supported over 17,000 domestic installations since its launch in August 2011.
- 3.38 The transport sector continues to make progress towards the UK's renewable energy and greenhouse gas savings targets⁸⁰. The **Renewable Transport Fuels Obligation (RTFO)** sets mandatory sustainability criteria for biofuels and an obligation on fuel suppliers to

⁷⁴ Cumulative installation numbers and capacity of Feed-in Tariffs with 50kW or less in capacity, monthly figures as at end September 2013

⁷⁵ UK Solar PV Strategy Part: Roadmap to a Brighter Future, October 2013

⁷⁶ Response to Call for Evidence on Renewable Energy Trading, July 2013

⁷⁷ Renewable Heat Incentive: The first step to transforming the way we heat our homes, July 2013

⁷⁸ Data source: Renewable Heat Incentive (RHI) and Renewable Heat Premium Payments (RHPP) deployment data, September 2013

⁷⁹ GWh means gigawatt hour

⁸⁰ The UK must, in law, comply with the EU Renewable Energy Directive which contains a target for the UK to source 15 per cent of its overall energy, and 10 per cent of energy used in transport, from renewable sources by 2020. The related Fuel Quality Directive (FQD) also requires UK suppliers to reduce the greenhouse gas intensity of their fuel by 6% by 2020.

provide 4.75%⁸¹ of transport fuels from renewable sources in 2013/14, with the contribution from wastes counting double.

- 3.39 The UK is seeking to support the increased deployment of 'advanced' biofuels that are derived from feed stocks, which do not compete with food or feed. To that end, the Government has announced £25 million of capital funding to enable the construction of a demonstration-scale waste to fuel and other advanced biofuel plant in the UK. Funding will follow a competition to identify the most promising and suitable industry proposals.

Nuclear Power

- 3.40 Nuclear is an important part of the £110 billion of investment required in electricity infrastructure, and will contribute to the creation of new jobs and diversification of electricity supplies. Investor confidence continues to grow in the UK's new nuclear programme with projects being taken forward by NNB GenCo, Horizon Nuclear Power, and NuGen. These projects have set out plans to develop around 16 GW of new nuclear in the UK, which could support an estimated 29,000 to 41,000 jobs across the nuclear supply chain at the peak of construction⁸², delivering substantial economic benefit to the economy.
- 3.41 There has been significant progress over the last year. Late 2012 saw the successful sale of Horizon Nuclear Power to Hitachi Ltd; the granting of the first new nuclear generation site licence in 25 years at Hinkley Point C (HPC); and regulatory approval of the European Pressurized Reactor (EPR) design. In March 2013 the Secretary of State for Energy and Climate Change gave development consent for NNB GenCo's planned multi-billion pound project at Hinkley Point. The Secretary of State has also made visits to China, Japan and Korea to discuss, amongst other things, the UK nuclear investment opportunity. In June 2013 the Chancellor announced the decision to pre-qualify HPC for a UK Guarantee to support the financing of the project by allowing access to a greater pool of finance⁸³.
- 3.42 The Government and EDF Group (as managers of the HPC project) have now reached commercial agreement on the key terms of a proposed investment contract for HPC in Somerset. This paves the way for the construction of the first new nuclear power station in the UK in a generation; the first to be built since Sizewell B, which started generating electricity in 1995. HPC will provide a stable source of clean power from 2023, generating enough electricity to power nearly six million homes. Once built, it will help to keep the lights on, cut emissions and reduce consumer bills over the long term. The commercial agreement is not legally-binding and the Government expects to continue negotiating a full investment contract with the developer. Any investment contract entered into will be published and laid before Parliament in accordance with the Energy Bill, and is dependent upon a positive decision from the European Commission in relation to State aid.
- 3.43 The Government remains committed to managing radioactive waste safely, responsibly and cost-effectively for the long term, and continues to affirm that geological disposal is the right policy. The Government is confident that the long term **Managing Radioactive Waste Safely (MRWS) programme** is sound and will be put into effect. The votes in Cumbria in January 2013 that resulted in the MRWS siting process being brought to a close in West Cumbria (to which the Secretary of State for Energy and Climate Change responded in a Written Ministerial Statement⁸⁴) do not change this, and do not undermine the prospects for new nuclear power stations. The Government has already held a public call for evidence on

⁸¹ The obligation level was adjusted in 2013 to 4.75% in order to maintain the overall level of biofuel supply, once the RTFO scheme was expanded to include fuels used in non-road mobile machinery and to other end uses covered by the Fuel Quality Directive.

⁸² The Nuclear Supply Chain Action Plan, December 2012

⁸³ Announcement: New energy infrastructure investment to fuel recovery, 27 June 2013

⁸⁴ Written Ministerial Statement by The Rt Hon Edward Davey MP on the management of radioactive waste, 31 January 2013

the site selection aspects of the MRWS programme and is running a public consultation on any revisions to those aspects proposed within the existing policy framework.

Carbon Capture and Storage

- 3.44 CCS is a mitigation technology which can remove the majority of carbon dioxide emissions created by the combustion of fossil fuels in power stations and in a variety of industrial processes, and transport it for safe permanent storage deep underground. However, developing CCS is a significant undertaking as the technology has not yet been deployed at a commercial scale. The Government is therefore working with industry to create a new cost-competitive CCS industry into the 2020s. The UK CCS Roadmap⁸⁵ set out a comprehensive package to take the UK to cost-competitive CCS in the 2020s. This package is widely recognised as one of the best offers of any government to support this technology.
- 3.45 The Government's approach is focussed around the **CCS Commercialisation Programme** with £1 billion in capital funding which is designed to bring forward the first commercial scale projects in the UK. In March 2013 two preferred bidders were announced: the White Rose Project in Yorkshire; and the Peterhead Project in Aberdeenshire⁸⁶. DECC is currently negotiating contracts for FEED (front-end-engineering-design) studies with the two bidders, which will provide further technical and cost certainty for the projects and information for wider industry and academics through a dissemination programme. The FEED studies will inform final investment decisions, expected to take place in 2015. The Commercialisation Programme complements wider activity the Government is undertaking including a four year £125 million CCS Research and Development Programme and international engagement.
- 3.46 The White Rose project has been put forward for funding through the European Commission's NER300 second call. It is the only CCS project in Europe to be included in this scheme.
- 3.47 The CCS Cost Reduction Task Force, appointed by the Government to look at this important issue, presented its final report and recommendations in May 2013⁸⁷. Their primary conclusion was that UK gas and coal power stations equipped with CCS have clear potential to be cost-competitive with other forms of low carbon power generation, delivering electricity at a levelised cost approaching £100/MWh by the early 2020s. The Government published a response to these recommendations and provided an update on key policy developments since the CCS Roadmap on 16 October 2013⁸⁸.

Gas Generation

- 3.48 In 2012 the contribution that gas power stations made to meeting electricity demand dropped from around 40% to under 30%. The reasons for the difficult economics of gas generation were explored and set out in the Government's *Gas Generation Strategy*⁸⁹ which was published in December 2012. The Strategy's objective was to reduce uncertainty around gas generation for investors. It showed that gas currently forms an integral part of the UK's power generation mix and is a reliable, flexible source of electricity. These characteristics mean the Government expects that gas will continue to play a major role in the electricity mix over the coming decades, alongside low carbon technologies, helping to ensure reliability of supplies as the electricity system decarbonises. The role gas plays will

⁸⁵ CCS Roadmap: Supporting deployment of Carbon Capture and Storage in the UK, April 2012

⁸⁶ Announcement of the preferred bidders for the UK's Carbon Capture and Storage Commercialisation Programme Competition, 20th March 2013

⁸⁷ Details on the Carbon Capture and Storage (CCS) Cost Reduction Task Force can be found at:

<https://www.gov.uk/government/policy-advisory-groups/ccs-cost-reduction-task-force>

⁸⁸ CCS in the UK: Government Response to CCS Cost Reduction Task Force, October 2013

⁸⁹ The Gas Generation Strategy, December 2012

be determined by the market, whilst keeping emissions within the limits set out in the UK's carbon budgets.

- 3.49 Greater clarity on the Levy Control Framework and initiation of the Capacity Market form part of the Government's response to the issues raised by stakeholders in developing the Strategy. These announcements seek to provide the investor certainty required to bring forward the investment needed in new gas plant. Longer term, the development of cost-competitive CCS should ensure gas can continue to play a full role in a decarbonised electricity sector.

Coal Generation

- 3.50 Great Britain (GB) currently has around 21 GW of coal-fired generation capacity, delivered through 12 power stations. In the last 12 months, one unit (~600 MW) of a coal station has been converted to biomass, while three coal stations (some 5 GW of capacity) and a 750 MW biomass station (which was previously coal) closed to comply with the Large Combustion Plant Directive (LCPD)⁹⁰. Furthermore, two units (1 GW) of a 2 GW coal station are also scheduled to close under the LCPD by end 2015 at the latest. More stringent regulations will come into force from January 2016 under the EU Industrial Emissions Directive and the remaining 12 plants will need to consider whether to make the investments necessary to comply, or choose to opt out, which would mean having a set number of operating hours allowed up to end 2023.
- 3.51 Cost-competitive CCS is essential if coal is to have a long term future in UK electricity generation. In 2012 coal-fired power stations accounted for 40% of overall electricity generated, a proportion that can increase at peak periods. The Government has introduced a 'triple lock' of policies through the National Policy Statements for Energy⁹¹, the Carbon Price Floor and the Emissions Performance Standard to give investors the certainty they need and to ensure that new coal power stations can only be built if equipped with CCS.

Electricity Networks Infrastructure

- 3.52 Investment in the electricity transmission and distribution networks is a key part of the energy infrastructure investment package required and considerable progress continues to be made in delivering the investment needed.
- 3.53 Ofgem has agreed up to £21.5 billion⁹² of funding for GB's onshore transmission network under the RIIO-T1 electricity transmission price control⁹³ that sets out funding for Transmission Owner activities, including investment in new and replacement assets. RIIO-T1 started in April 2013 and runs until 2021 and will help ensure that new generation can be accommodated in a timely and cost-effective manner whilst maintaining network security and reliability. Ofgem estimates that this could support over 8000 jobs.
- 3.54 The innovative regulatory regime for offshore transmission, jointly developed by the Government and Ofgem, continues to realise investment and drive savings for consumers. In September 2013, Ofgem granted an Offshore Transmission Owner licence for the transmission assets of the London Array offshore wind farm. This is the largest transaction (£459 million) to reach financial close to date, and takes the amount of investment secured

⁹⁰ LCPD is an air quality Directive, which places limits on emissions of sulphur dioxide and nitrogen oxides. LCPD opted-out plants such as EON's Kingsnorth, Scottish Power's Cockenzie and RWE's Didcot A.

⁹¹ Details on the National Policy Statements for Energy Infrastructure can be found at:

http://webarchive.nationalarchives.gov.uk/+/http://www.decc.gov.uk/en/content/cms/meeting_energy/consents_planning/nps_en_infra/nps_en_infra.aspx

⁹² Announcement of Ofgem's price controls, 5 April 2013

⁹³ RIIO (Revenue = Incentives + Innovation + Outputs) is Ofgem's framework for carrying out Price Control Reviews.

by the regime to over £1 billion. Ofgem selects Offshore Transmission Owners through a tender process that harnesses competitive pressures, which it estimates will save consumers upwards of around £290 million on the first tranche of projects.

- 3.55 The Government's enduring **Connect and Manage** regime continues to reduce grid connection timescales for many new generation projects. Under Connect and Manage, 163 large generation projects (total capacity of 36.5 GW) have seen their connection times reduced by an average of five years. A further 128 small-scale generators have benefitted too.
- 3.56 Following Ofgem's recent review of transmission charging (Project TransmiT), its preferred approach to charging and impact assessment was published in August 2013 for consultation. It includes proposed changes that reflect the degree to which the local network is shared to more accurately reflect the impact of a generator on the network. Ofgem expects to publish its decision by the end of 2013.
- 3.57 The next electricity distribution price control (RIIO-ED1), setting out the funding for distribution network operators' (DNOs) activities, will run from 2015 to 2023. In March 2013 Ofgem set out its strategy for RIIO-ED1 and DNOs submitted their business plans in July. Ofgem expects to publish its initial assessment of these plans in November 2013.
- 3.58 The development of a smart grid will play an important role in the transition to a low carbon economy. Work continues with Ofgem and industry through the Smart Grid Forum to refine previous analysis on the benefits and impacts of 'smart' technology that has informed DNOs' RIIO-ED1 business plan submissions. The outputs of this work have been published on the Smart Grid Forum website⁹⁴. The broad conclusion is that a mix of 'smart' and traditional solutions is the optimum long term development, offering significant savings in the order of 25% to 30% of total investment costs to 2050. The Smart Grid Forum (co-chaired by DECC and Ofgem) will publish a Smart Grid Vision and Routemap document by the end of 2013.
- 3.59 On 1 June 2013 the Trans-European Energy Infrastructure Regulation (TEN-E) came into force which aims to facilitate investment in cross-border energy infrastructure via favourable planning and regulatory treatment. The Government supported a number of electricity interconnection projects to receive EU 'Project of Common Interest' status which will be able to access the benefits of the TEN-E regulation. Ofgem is developing a new 'cap and floor' regulatory regime for a project with Belgium to encourage further interconnection. As signalled in *Electricity System: Assessment of Future Challenges*⁹⁵, the Government is developing the evidence base on the impacts of further interconnection and the appropriate development of further capacity, and envisages publishing a policy statement around the end of 2013.
- 3.60 Ofgem is currently reviewing the existing regulatory arrangements for electricity transmission in GB through its Integrated Transmission Planning and Regulation project. It is assessing how the system is currently planned and delivered, considering whether any changes are appropriate to facilitate integrated investments. It intends to publish emerging thinking on interconnection regulation in early 2014 and to work closely with investors nearing Final Investment Decision on more mature projects.

⁹⁴ Analysis of Least Regrets Investments for RIIO-ED1 - Wrapper, June 2013

⁹⁵ Electricity System: Assessment of Future Challenges - Summary, August 2012

Heat Infrastructure

- 3.61 Energy for heating is the single largest energy use in the UK. Nearly half (47%) of the final energy consumed in the UK in 2012 was used for heat⁹⁶; primarily space and hot water heating in domestic, commercial and industrial buildings, and for industrial processes. Fossil fuels remain the dominant source of energy for heating (in particular, natural gas), so security of heat supply in the short to medium term, coupled with the need to decarbonise this sector over the longer term to meet climate change targets, are important priorities for the Government.
- 3.62 *The Future of Heating – a Strategic Framework for Low Carbon Heat*⁹⁷ made clear that reducing emissions from buildings and industry are key to delivering on these priorities. *The Future of Heating: Meeting the Challenge*⁹⁸ set out a package of actions in response covering:
- industrial heat and combined heat and power;
 - heat delivered through heat networks;
 - heating and cooling in buildings; and
 - the implications for energy grids and infrastructure.
- 3.63 *Meeting the Challenge* explored fundamental questions around meeting future heating demands when carbon is severely constrained; alternatives to fossil fuel heating; the role for natural gas as a source of heat out to 2050; and what Government and stakeholders can do now to put the UK on the path to a low carbon heating future. The document committed the Government to working with the six most heat-intensive industrial sectors to work out their own 2050 roadmaps based on technological potential. It also confirmed the important role that Combined Heat and Power can play in increasing industrial efficiency and cutting carbon.
- 3.64 Heat networks will be an important part of a low carbon future, providing heat to dense urban areas. A Heat Networks Delivery Unit has been established to support local authorities to share best practice, and identify and tackle barriers to deliver a step change in heat network deployment. A new £6 million grant funding programme has been launched to help local authorities in England and Wales to develop new heating and cooling networks, and expand existing networks⁹⁹. This support will assist them to access much larger amounts of project finance from the private sector and the UK Green Investment Bank once projects are more fully developed.

Transport Infrastructure

- 3.65 Secure, affordable supplies of oil are fundamental as transport is expected to remain predominately fossil fuel based for the medium term. But this must go hand in hand with greater fuel efficiency of vehicles and increased use of low carbon fuels, such as electricity and hydrogen to decarbonise the transport sector. This means that ultra-low emission vehicles (ULEVs) will need mass deployment during the 2020s and 2030s. To enable this shift and to support growth, inward investment and job creation, the Government is taking action to establish the UK as a dominant market for plug-in vehicles. Notable areas of progress since the 2012 Annual Energy Statement include:

⁹⁶ Energy Consumption in the UK, July 2013

⁹⁷ The future of heating: a strategic framework for low carbon heat, March 2012

⁹⁸ The future of heating: meeting the challenge, March 2013

⁹⁹ Announcement of the £6 million funding for local authority heat networks, 20 September 2013

- By June 2013 over 5500 charging points had been provided through the eight **Plugged-in-Places schemes** with an estimated 5000 additional charging points provided nationally by the private sector.
- The **Plug-in-Car Grant scheme** (offering a grant of 25% of the vehicle price, up to a value of £5,000) had over 4553 claims by end of June 2013; and 310 claims had been made through the Plug-in Van Grant scheme (offering a grant of 20% of the vehicle price, up to a value of £8,000).
- Phase one of the **UKH₂Mobility project** looking at the potential of hydrogen for transport, and in particular deployment of hydrogen fuel cell vehicles (FCEVs) from 2015, has produced a roadmap for the introduction of FCEVs and hydrogen infrastructure in the UK. Phase two is underway developing a detailed business case and overarching framework for realising the roadmap and addressing key barriers to the introduction of FCEVs to the UK.
- The Government published the *Automotive Industrial Strategy*¹⁰⁰ in July 2013, developed in partnership with industry in the Automotive Council. As part of this, the Government and industry will invest around £1 billion over the next 10 years in an Advanced Propulsion Centre to research, develop and commercialise the next generation of low carbon technologies.
- In September 2013 a new ULEV strategy for the UK, *Driving the future today*¹⁰¹, was launched. This sets out the Government's intention to position the UK at the global forefront of ULEV development, manufacture and use; contributing to economic growth and carbon targets and delivering cleaner towns and cities. It reiterated the commitment of £500 million of new funding through to 2020 to bring this vision to life and announced a call for evidence which will inform decisions on how best to invest the funding.

3.66 New car efficiency has improved 27% between 2002 and 2012¹⁰², meaning that users benefit from higher fuel economies; an average increase of 14 miles per gallon more for new car owners over this period. However, with Heavy Goods Vehicles (HGVs) accounting for around 20% of transport carbon emissions, there is a need to reduce HGV carbon emissions too. Improved logistics, better driving behaviours and techniques, continued improvements in vehicle fuel efficiency and finding alternative sources of power are all ways of increasing energy efficiency in the transport sector.

3.67 Industry is taking steps to increase its fuel efficiency. For example, operators in the Freight Transport Association Logistics Carbon Reduction Scheme¹⁰³ are taking various steps to reduce their fuel consumption, and hence their carbon emissions. These include: driver training and performance monitoring; reduced empty running; improved routing and scheduling; and greater use of more efficient engines, aerodynamic devices and low rolling resistance tyres to reduce drag. The Government is undertaking two major HGV carbon emission reduction trials:

- **Low Carbon Truck Trial:** in 2013 a two year £11.3 million trial commenced involving around 300 low carbon HGVs and their supporting infrastructure, including a number of public access refuelling points which will be available to other operators. Trial vehicles should have carbon emissions at least 15% lower than those emitted by equivalent diesel vehicles. Mostly these use some form of gas power (Compressed Natural Gas or Liquefied Natural Gas, some with an element of biomethane content) in dual fuel vehicles (diesel and gas).

¹⁰⁰ Driving success: A strategy for growth and sustainability in the UK automotive sector, July 2013

¹⁰¹ Driving the Future Today: A strategy for ultra-low emission vehicles in the UK, September 2013

¹⁰² More information on new car carbon dioxide emissions can be found at:
<https://www.gov.uk/government/publications/new-car-carbon-dioxide-emissions>

¹⁰³ Details on Logistics Carbon Reduction Scheme (LCRS) can be found at:
http://www.fta.co.uk/policy_and_compliance/environment/logistics_carbon_reduction_scheme/

- Longer Semi-Trailers: in February 2012 the Government initiated a series of operational trials over 10 years eventually involving around 1800 longer semi-trailers up to 15.65metres long. This will enable fewer HGV journeys to carry the same amount of goods. The trial is expected to save over 3000 tonnes of CO₂ with overall benefits estimated at £33 million. The first trial annual report on progress was on 31 May 2013¹⁰⁴.

3.68 Energy efficiency has a part to play on the rail network. The Government has already committed to electrifying the Midland Mainline, various lines in the North West of England, the Great Western Main Line and the Welsh Valleys; and to creating an 'Electric Spine' for passengers and freight stretching from Southampton to the Midlands and Yorkshire¹⁰⁵. In December 2012 the rail industry published the Rail Technical Strategy¹⁰⁶. This included four objectives on energy covering reduced reliance on fossil fuels, low-embedded carbon materials, energy efficient operation and information on how energy is used.

Maximising UK Oil and Gas Production

3.69 With oil and gas remaining key elements of the energy system for years to come (especially for transport and heating), the Government is committed to maximising indigenous resources, onshore and offshore, where it is cost-effective and in line with safety and environmental regulations to help ensure security of supply. In 2012 UK oil and gas production provided 41% of the UK's primary energy needs¹⁰⁷ and £6.5 billion of direct tax receipts in 2012/13¹⁰⁸.

3.70 The upstream oil and gas industry brings major economic benefits to the UK. As one of the most mature offshore basins in the world, the UK Continental Shelf (UKCS) faces unprecedented challenges which merit a focused, in-depth review. The Secretary of State for Energy and Climate Change invited Sir Ian Wood, recently-retired chair of Wood Group, to lead this review. He is working with leaders across industry, Government and elsewhere to produce robust analysis, conclusions and recommendations for improving future economic recovery of UKCS oil and gas. Emerging conclusions are expected in autumn 2013 and the final report and recommendations in early 2014.

3.71 Further to the successful offshore licensing round in 2012 (244 applications were received), which resulted in the award of 167 new licences, the remainder of the blocks applied for are currently subject to environmental assessment under the Habitats Directive. The responses to a public consultation are being considered and the Government expects to make decisions later in 2013 on whether to offer licences for the remaining blocks. A new offshore round is planned for next year.

3.72 The PILOT oil and gas taskforce continues to take action¹⁰⁹. Activities across its workstreams includes: improving production efficiency; infrastructure; enhanced oil recovery and improving recovery; and work on determining a technology strategy for the UK.

3.73 DECC's petroleum licensing work ensures that exploitation of the UKCS is successful, with some 41 billion barrels of oil equivalent having been produced so far. In February 2013 the large Mariner field was approved, which is the first ultra-heavy oil field to be developed in the North Sea. Plans for developing several other similar fields are progressing.

¹⁰⁴ Evaluation of the high volume semi-trailer trial: Annual Report 2012, May 2013

¹⁰⁵ Plan of Rail High level output specification (HLOS) 2012 electrification by 2019

¹⁰⁶ The Future Railway: The Industry's Rail Technical Strategy 2012, December 2012

¹⁰⁷ Digest of United Kingdom energy statistics (DUKES) 2013, July 2013

¹⁰⁸ HM Treasury 2013 Budget Report, March 2013

¹⁰⁹ More information about PILOT can be found at: <https://www.gov.uk/government/policy-advisory-groups/pilot>

3.74 A fiscal regime that encourages further investment in the North Sea, whilst ensuring a fair return for UK taxpayers, continues to be a Government priority. In September 2012, following extensive engagement with industry, the Government introduced a 'brown field allowance' to promote investment in commercially marginal projects in existing fields while the Finance Act 2013 introduced the necessary legislation to underpin a contractual approach giving companies greater certainty on decommissioning tax relief.

Unconventional Oil and Gas

3.75 Onshore fields today supply only a very small part of UK oil and gas production; around 1% of the total. However the growth of unconventional gas and oil in the US, particularly shale gas, has been one of the most salient shifts in energy markets in recent years. The Government is committed to ensuring that the regulatory, planning and fiscal regimes enable the onshore industry to establish what the commercial prospects in the UK may be for unconventional oil and gas. The Government will make sure that the exploration and extraction can be carried out safely and with full regard for the protection of the environment.

3.76 Scientists from the British Geological Survey (BGS)¹¹⁰ have estimated that the volume of gas held within the Bowland Hodder shale in northern England is some 1300 trillion cubic feet (central estimate). This compares to the recent US Energy Information Administration estimate of the UK's shale gas resources of around 600 trillion cubic feet. The BGS study is the first in the UK to provide investors, operators and regulators with an indication of where to target future exploratory drilling, which will be required to determine the extent of gas that can be technically and commercially recovered.

3.77 The Government welcomes the recent investment in the industry by Centrica, which demonstrates the attractiveness of Bowland shale as an investment proposition. In order to facilitate shale development, the Government has taken a number of actions, such as setting up the new Office of Unconventional Gas and Oil to co-ordinate the approach on unconventional energy sources.

3.78 The Government has worked with the industry on its community engagement charter, announced in June 2013¹¹¹, which sets out how developers will engage with communities that host them. This includes: commitments on consulting honestly and openly with local people in advance of any application for planning permission; providing communities with a continued point of contact with developers; minimising disruption during operations; and a commitment to employing local workers and suppliers where possible. Operators will commit to provide £100,000 in community benefits at exploration phase, per well-site where hydraulic fracturing occurs. They have also committed to sharing their proceeds with communities at production phase, providing 1% of revenues to communities that host them, ensuring communities are rewarded for hosting shale gas developments and playing their part in meeting the UK's future energy needs.

3.79 Over the next 12 months the Government's priorities include ensuring the regulatory regime is fully mapped out and robust for the exploration phase as this industry moves forward and setting out plans for public engagement on shale. The Government has already taken important early steps, including the publication of technical planning guidance¹¹² that clarifies the interaction of the planning process with the environmental and safety consenting regimes. Furthermore, the Environment Agency has announced actions to streamline and

¹¹⁰ The Carboniferous Bowland Shale Gas Study: geology and resource estimation, July 2013

¹¹¹ More information on Community Engagement Charter of Oil and Gas from Unconventional Reservoirs can be found at: <http://www.ukoog.org.uk/elements/pdfs/communityengagementcharterversion6.pdf>

¹¹² Planning practice guidance for onshore oil and gas, July 2013

simplify the regulation of exploratory activity whilst maintaining environmental protection¹¹³ and published technical guidance in July 2013 for consultation as a first step. The Government has also published a consultation on fiscal measures to incentivise shale activity, recognising the high upfront costs associated with shale gas projects¹¹⁴. Together, these actions provide the framework for the unconventional gas and oil industry to get on with the vital exploration phase for shale gas.

Oil Supply

3.80 Oil and oil products continue to play a significant role in the UK's energy mix; meeting demand accounting for 32% of the UK's energy consumption¹¹⁵. Demand for oil is expected to decrease over the longer term as the UK transitions to a low carbon economy. Oil will retain an important role in the medium term though especially in the transport sector, which accounts for 77% of UK oil usage¹¹⁶. Domestic heating, industry and feed stock for petrochemical, industrial and construction products account for the remaining use. Production from the UKCS can meet approximately 66% of UK current crude oil demand¹¹⁷.

3.81 The UK continues to have substantial refining capacity, but the Government is working with the sector to review the role of UK refining in the face of current and future challenges. Challenges include: substantial new investment requirements to meet tightening environmental standards and to better balance refinery output with demand; and responding to increased competition from Asia and the Middle East.

3.82 This review will assess the resilience benefits to the UK for retaining a level of domestic refining cover. It will consider whether there is an appropriate balance for the UK between domestically refined and imported sources of product, particularly those products that the UK relies heavily on imports for such as diesel and aviation fuel. Additionally, the review will take into account the contributions that the sector makes to the economy and will consider what action is appropriate for the Government to take to help incentivise investment in the sector and improve competitiveness. Key conclusions and recommendations are expected by the end of 2013.

Gas Supply

3.83 Gas will continue to have an important role in electricity generation and providing heat for households and industry, as highlighted already in this Statement. The GB gas market is well placed to deliver gas security of supply to meet these needs. GB has the most liquid and one of the largest gas markets in Europe with extensive import infrastructure, a diverse range of gas supply sources and lower wholesale prices than the oil indexed gas contracts still widely used internationally. In addition, the past decade has seen significant investment in new gas supply infrastructure, including a more than fivefold increase in annual import capacity and a significant increase in the peak deliverability of gas storage facilities. Further storage capacity is currently under construction¹¹⁸ and 12 potential projects have their main planning consents in place. The GB gas market has provided reliable gas supply over recent challenging winters.

3.84 Projections show the UK will become increasingly dependent on imports and can expect more volatility in gas demand with greater deployment of renewable power generation

¹¹³ More information on Commitment to streamline and simplify environmental regulation of onshore oil and gas exploratory activities can be found at: <http://www.environment-agency.gov.uk/news/148476.aspx>

¹¹⁴ Consultation on Harnessing the potential of the UK's natural resources: a fiscal regime for shale gas, July 2013

¹¹⁵ Digest of United Kingdom energy statistics (DUKES) 2013, July 2013 Table 1.1.1

¹¹⁶ Energy trends and prices, June 2013

¹¹⁷ Digest of United Kingdom energy statistics (DUKES) 2013, July 2013 Table 3.1

¹¹⁸ At Stublach and Hill Top Farm in Cheshire

sources. However, gas demand-side flexibility is likely to fall as coal generation plant closes. In light of these challenges, a number of interventions to enhance gas security are being developed and implemented, including the Capacity Market penalty regime and work within the EU to facilitate a well-functioning, integrated and transparent European gas market.

- 3.85 Ofgem has announced revised proposals to sharpen incentives on gas suppliers through changes to emergency cash-out arrangements. They have also been consulting on a demand-side response auction by commercial and industrial customers with a view to making final policy decisions in early 2014. In addition, Ofgem has reviewed the efficiency of gas interconnectors with Europe, proposing further work to ensure these pipelines flow gas into GB when needed.
- 3.86 The Government takes gas security of supply seriously, and has recently reviewed whether the potential benefits of further interventions in the gas market might outweigh the associated costs and risks. The analysis conducted by independent consultants confirms the resilient picture of the GB gas market reported by Ofgem in November 2012¹¹⁹, DECC's own analysis to meet European gas security regulations and previous independent market assessments¹²⁰. It shows that GB security of gas supply is expected to be robust in the short, medium and long term and that effective implementation of low carbon policies will bring further enhancement to GB gas security.
- 3.87 The Government announced the result of this review in September 2013¹²¹, finding there to be no clear case for a further intervention in the gas market above and beyond the range of measures already being taken to enhance gas security. Such an intervention would risk adding disproportionately to energy costs for consumers.

International Oil and Gas

- 3.88 The Government's work internationally to secure reliable imports of oil and gas is a key strand of the UK's energy security strategy. On-going actions include:
- Encouraging global investment in oil and gas production (to the extent this is compatible with climate change goals and policies) and maximising UK commercial opportunities in doing so, through a range of bilateral relationships and multilateral initiatives. For example, the Government continues to work through the International Energy Agency to ensure robust analysis on investment needs and outlook.
 - Working to ensure reliable supplies by encouraging greater liberalisation of energy markets and strengthening trading links and infrastructure, again working bilaterally and multilaterally. This includes work at a European level (see paragraphs 4.12-4.16).
 - Enhancing energy price stability by continuing to support producer/consumer dialogue and greater market transparency. The UK is an active member of the International Energy Forum, which brings together all the main oil producing and consuming countries.
 - Working to restrain rising international demand by promoting low carbon technologies and energy efficiency. The UK works to encourage countries to take up low carbon forms of generation to ensure a balanced energy mix globally, to minimise demand and reduce pressure on oil and gas markets.

¹¹⁹ Gas Security of Supply Report, Ofgem, November 2012

¹²⁰ For example, GB Gas Security of Supply and Options For Improvement, Poyry, March 2010

¹²¹ Decision by Ministers on gas storage, informed by independent analysis

4. Driving international action on climate change

The case for international action

- 4.1 The Government's aim, and the internationally agreed goal, is to limit global temperature rise to an average of no more than 2°C above pre-industrial levels. As made clear throughout this Statement, the Government is committed to playing its part to transition to a low carbon economy, whilst maintaining security of supply and affordability. However, the UK accounts for only around 1.5% of global emissions and therefore to address the challenge that climate change presents to prosperity, security and resources, a global response is needed.

Ensuring progress in multilateral negotiations

- 4.2 The best chance of securing cost-effective action at a global scale is through a global agreement to reduce emissions. The international body responsible for agreeing collective action is the United Nations Framework Convention on Climate Change (UNFCCC). With near universal membership (195 Parties), it is the only forum which has the legitimacy, coverage and buy-in to deliver a global response that is commensurate to the nature and scale of the problem.
- 4.3 Since the call for Parties to the UNFCCC to raise their mitigation action at the Conference of Parties (COP) 15 in Copenhagen, over 91 countries (accounting for around 80% of global emissions), have submitted targets and actions to reduce their emissions by 2020.
- 4.4 The Government has made progress in the international negotiations. COP16 in Cancun in 2010 produced the basis for a comprehensive and far-reaching international response to climate change (the Cancun Agreements). Amongst the successful outcomes of COP16, Parties agreed to commit to the goal of limiting the maximum temperature rise to an average of no more than 2°C above pre-industrial levels.
- 4.5 COP17 in Durban in 2011 was a major turning point which put the world back on track towards the below 2°C objective by agreeing to negotiate a new legally-binding global deal by 2015 and to increase effort to reduce emissions in the pre-2020 period.
- 4.6 COP18 in Doha in 2012 was the next step to making progress on both of these issues. All Parties to the UNFCCC reiterated their commitment to negotiate by 2015 a new global, legally-binding deal applicable to all nations to come into force by 2020¹²² and it was agreed to identify actions to help close the mitigation gap before 2020. Developed countries were able to announce that they had met their Fast Start Finance commitment of approaching \$30 billion by the end of 2012 (within which the UK met its share of £1.5 billion).
- 4.7 Additionally in Doha, the EU alongside a number of other countries agreed to a second commitment period of the Kyoto Protocol (KP2), under which the EU and others take binding targets to reduce emissions to bridge the period until the new global agreement comes into force in 2020 and to help ensure continuity of the legal framework until then. Whilst countries who have joined this second commitment period (including the EU, Australia, Switzerland, and Norway) only contribute 15% of global emissions, this was an important outcome in that it maintains the only legally-binding instrument under the UNFCCC.
- 4.8 The next COP (COP19) takes place in Warsaw, Poland, between 11 and 22 November 2013. This is not expected to result in any major breakthroughs but will be an

¹²²Establishment of an Ad Hoc Working Group on the Durban Platform for Enhanced Action publication, December 2011

opportunity to take a further step towards achievement of the 2015 agreement and closing the emissions gap. 2014 will be an intensive year of negotiations, where concrete steps are needed to develop a framework for the new agreement and a draft outcome text by COP20 (in Lima, Peru), in line with the timetable agreed in Doha.

- 4.9 A recent development on tackling fast growing emissions from international aviation should also provide further momentum for the UNFCCC negotiations. The International Civil Aviation Organization (ICAO) General Assembly took place in Montreal from 24 September to 4 October 2013. The climate change resolution agreed by the Assembly commits the ICAO to develop a global Market Based Measure to address aviation emissions, and sets out a detailed work programme to finalise the design of a scheme, including mechanisms for implementation from 2020, for decision at the next ICAO Assembly in 2016.

Driving international action

- 4.10 As well as making progress in international negotiations, many countries are taking action to reduce their own emissions. Alongside the UK, climate change related legislation has either been implemented or is being progressed in 32 major economies¹²³, including Brazil, China, India, Mexico and South Africa. Over 30 countries and a number of state level governments have, or are also developing, carbon markets. This includes China, South Korea and California.
- 4.11 The UK Government is engaging with other countries to share expertise gained from developing and implementing domestic energy and climate change policies. This is to help encourage big emitters such as the US, China and other emerging economies, which could shift the dynamic in the negotiations, to achieve significant levels of carbon abatement, highlighting that a shift to low carbon is in their best interests. The Government will continue to take advantage of such opportunities to make the case that the shift to low carbon can be good for prosperity, security and growth.

EU Leadership

- 4.12 Working with the EU, and demonstrating leadership at an EU level, is critical to achieving the Government's international energy and climate change objectives. The EU's leaders have committed to transforming Europe into a highly energy efficient and low carbon economy. The Government continues to work closely with the European Commission and other EU Member States in creating the framework for this transition and in negotiating internationally for a global deal on climate change. The Secretary of State for Energy and Climate Change has founded the Green Growth Group, which is a group of EU energy and environment Ministers whose aim is to provide the political leadership to deliver clear and credible EU low carbon ambition up to and beyond 2020.
- 4.13 A single energy market is crucial to meeting EU energy and climate objectives. 'Projects of Common Interest' and adoption of the more than 20 complex network codes, under the Third Package of Energy Liberalisation, are examples of work to further facilitate cross-border energy flows and help complete the single energy market by 2014. In June 2013 the UK implemented the Regulation on Energy Market Integrity and Transparency (REMIT), which gives Ofgem and other regulators across the EU additional powers to tackle energy market abuse. This is an important contribution to ensuring that EU energy markets work effectively and efficiently.

¹²³ The GLOBE Climate Legislation Study, January 2013

- 4.14 The Government believes that the EU should not stop however at a 20% emissions reduction target for 2020 but should go further, adopting a 30% cut in emissions by 2020 (against 1990 levels). The Government's strategy for achieving 30% is based on making progress in Europe on two levels: at the top down political level by making the case to Member States for an increase in the overall 2020 target and formal recognition of the European Commission's Low Carbon Roadmap; and on the bottom up practical level by supporting measures that will deliver enhanced emission savings, including implementation of the EU Energy Efficiency Directive and strengthening the EU Emissions Trading System (EU ETS).
- 4.15 The Government is playing a leading role in the development of a 2030 EU climate and energy framework to facilitate the investment needed to ensure the EU remains on a cost-effective path to its long term emissions objectives, whilst maintaining energy security and affordability for commercial and domestic customers. The Government's response to the European Commission's Green Paper on a framework for 2030 climate and energy policies made clear the view 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;
 - adopt a unilateral EU wide greenhouse gas emissions reduction target of 40% for 2030;
 - offer to increase the target up to 50% in the context of a global comprehensive agreement on climate change;
 - 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 2013;
 - continue to work towards completion of the single energy market in line with recent European Council Conclusions;
 - 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
 - continue with key enabling actions to promote renewables and other low carbon generation, including support for research and development and product standards.
- 4.16 Furthermore, the Government has been successful in securing a major change to proposed EU legislation on the regulation of offshore drilling. This means that the need for changes in the current well-regarded North Sea regime have been reduced, whilst still ensuring that high standards of safety and environmental protection are in place across the EU.

Supporting low carbon, climate resilient economies

- 4.17 Helping developing countries to take action to reduce emissions, promote low carbon development and to adapt to the effects of climate change remains an important focus. The Government allocated £2.9 billion over the current Spending Review period to the **International Climate Fund** (ICF) to support developing countries movement to low carbon, climate resilient pathways. The Spending Review has allocated a further £969 million to the ICF in 2015/16.
- 4.18 The Government is using the ICF to invest in transformational approaches that can deliver value for money and be scaled up and replicated by others to enable longer term shifts in low carbon, climate resistant investment. The Government's low carbon investment portfolio is testing a range of interventions that aim to:

- drive private investment into low carbon;
- support the deployment of technologies that are critical to closing the gap to 2°C, but which are not on track globally;
- improve the architecture for climate finance to enable effective delivery at scale; and
- build capacity in priority countries to support their ability to access climate finance and to deliver results at scale in the future.

4.19 The ICF contributed to delivering the UK's share of the Fast Start pledge (agreed at COP 15) to provide new and additional international climate finance alongside other developed countries of approaching \$30 billion in total for the period 2010 to 2012. In the event, developed countries delivered a total of around \$33 billion of Fast Start finance. This includes the UK's share of £1.5 billion between 2010 and 2012.

4.20 The ICF demonstrates the Government's commitment to scaling up climate finance beyond the Fast Start period to meet a fair share of mobilising \$100 billion of public and private international finance per year from 2020 as set out in the Copenhagen Accord. The Government is encouraging other countries to scale up their international climate finance commitments. To help deliver on this commitment and scale up private flows of climate finance, the Capital Markets Climate Initiative has been established. This is a platform for public-private engagement that informs policy thinking and the design and implementation of practical solutions to mobilise private finance being sought for support through the ICF.

5. Energy resilience and legacy

- 5.1 Ensuring energy resilience and tackling UK energy legacies safely, securely and cost-effectively, whilst minimising the burden for taxpayers, is a national priority.

Delivering a resilient energy system

- 5.2 Risks to energy supply are assessed on an on-going basis and where risks are identified, including natural disasters and malicious attacks, action is taken to ensure the UK energy system remains resilient. To reduce the likelihood and impact of these risks the Government continues to perform essential on-going resilience work such as strengthening contingency planning by:

- working to improve capability to respond to energy supply disruptions;
- working in partnership with industry and others to strengthen the resilience of UK systems against cyber related risks; and
- supporting implementation of programmes which provide enhanced protection against flooding at key energy sites.

- 5.3 The Government has an international obligation to hold oil stocks. In April 2013 a consultation was issued on options for the future management of compulsory oil stocking in the UK, including the option to establish an industry-owned and operated Central Stocking Entity, to ensure the UK is resilient to supply disruptions and minimises the burden on industry. A response is expected to be issued later in 2013.

Nuclear safety and resilience

- 5.4 The Government continues to have a programme of work to ensure all nuclear sites (current and legacy) remain safe and secure. Key actions on nuclear safety and resilience include:

- ensuring a robust safety and security framework for nuclear sites and the transportation of nuclear materials;
- co-ordinating national responses to incidents; and
- working domestically and internationally to reduce risks to national and global security.

- 5.5 The regulation of nuclear safety, security, emergency planning, transport and safeguards is carried out by the independent civil nuclear regulator, the **Office for Nuclear Regulation** (ONR) which is expected to be given statutory footing in the Energy Bill. In October 2012 the regulator issued new outcome focused security requirements to industry, known as the National Objectives Requirements and Model Standards (NORMS). NORMS ensure that the nuclear industry's security culture is positive, professional, current and continues to be seen as a priority.

- 5.6 In October 2013 the International Atomic Energy Agency conducted an Integrated Regulatory Review Service (IRRS) mission to the UK. The IRRS mission provides expert third party scrutiny to ensure that nuclear regulatory systems are robust. The mission assessed the ONR and said in its preliminary findings that the UK had made considerable progress since reviews in 2006 and 2009. It also identified good practices in the UK's nuclear regulatory system. A final report with suggestions for improvement and recommendations will be published in due course.

- 5.7 The **Civil Nuclear Police Authority** (CPNA) is a Non Departmental Public Body sponsored by DECC. The CPNA administers the Civil Nuclear Constabulary, whose purpose is to

protect civil nuclear licensed sites and safeguard nuclear material at sites and during transportation.

- 5.8 The **Nuclear Decommissioning Authority** (NDA) has responsibility for delivering the decommissioning and clean-up programme of the UK's nuclear legacy sites. Progress of this programme continues with plans in place to bring forward more than £1 billion in savings and a prospective closure date up to 17 years earlier than originally anticipated of the high-hazard facilities at Sellafield.
- 5.9 Through its supply chains, the NDA is making an important contribution to UK growth, with some 18,000 people employed at sites across the UK and spending of £1.66 billion in 2012/13 (£1.61 billion in 2011/12) via the Site Licence Companies (SLCs) managing the various sites across the UK. There are over 3,000 companies, almost half of which are estimated to be small and medium enterprises, in the supply chain with direct SLC contracts. A further (estimated) £100 million is spent by the NDA each year on research and development.

Coal Liabilities

- 5.10 DECC's latest (as at March 2013) assessment of outstanding coal mining health related liabilities is worth around £170 million. Noise-related hearing loss continues to be the most significant source of claims.
- 5.11 DECC continues to work to implement the Court Judgments previously handed down on two Group Litigation actions. The first related to cancer and respiratory claims at a former plant in South Wales. Compensation on the lead claims has been paid and DECC is now making offers to the other claims on the register. The second case which related to osteoarthritis of the knee amongst coal miners did not proceed. Attempts are now being made to recover costs from the organisations that funded the action. In July 2013 DECC received notification of potential new compensation claims for former coke production workers employed by the nationalised coal industry. These are currently being reviewed.
- 5.12 In April 2013 Capita was re-awarded the contract of the **National Concessionary Fuel Scheme** (NCFS) following a competitive tender. Under the new contract some of the arrangements and working practices were simplified to achieve the most effective delivery of obligations under the NCFS. As of 30 June 2013, the total number of scheme beneficiaries was over 69,000 of which approximately 57,800 were taking their entitlement in cash and the balance, over 11,200, continuing to receive solid fuel. It is expected that this liability will continue for a further 50 years at a cost to the taxpayer of around £450 million. DECC continues to meet its obligations under this scheme.
- 5.13 The **Coal Authority**, which is responsible for the licensing of coal and the meeting of the environmental and public safety liabilities arising from coal mining, continues to meet its statutory and regulatory obligations. The Authority has also played an advisory role during the recent restructuring in both the English and Scottish coal industries; and where necessary has provided flexibility to temporarily alleviate some financial obligations due to it. On public safety, the Authority had completed 36,600 mine entry inspections as at the end of 2012 and is on track to meet its target of inspecting 90% of the total urban mine entries, around 50,000, by March 2014.

North Sea oil and gas decommissioning

- 5.14 Through the Government's responsibilities for managing the decommissioning of offshore oil and gas installations, the aim is to minimise the risk of companies failing to meet their

obligations and the cost of decommissioning falling to the taxpayer. The industry has already decommissioned 10% of the 618 installations and 25,000 kilometres of pipelines on the UKCS. Work will be on-going on the remaining infrastructure for at least a further 20 to 30 years. With £30 billion to £40 billion of decommissioning costs for the infrastructure currently on the UKCS, this is a clear opportunity to support UK economic growth.



information & publishing solutions

Published by TSO (The Stationery Office) and available from:

Online

www.tsoshop.co.uk

Mail, Telephone, Fax & E-mail

TSO

PO Box 29, Norwich, NR3 1GN

Telephone orders/General enquiries: 0870 600 5522

Order through the Parliamentary Hotline Lo-Call 0845 7 023474

Fax orders: 0870 600 5533

E-mail: customer.services@tso.co.uk

Textphone: 0870 240 3701

The Houses of Parliament Shop

12 Bridge Street, Parliament Square

London SW1A 2JX

Telephone orders: 020 7219 3890/General enquiries: 020 7219 3890

Fax orders: 020 7219 3866

Email: shop@parliament.uk

Internet: <http://www.shop.parliament.uk>

TSO@Blackwell and other Accredited Agents

URN 13D/252

ISBN 978-0-10-187322-2



9 780101 873222