HM Government

Review of the Balance of Competences between the United Kingdom and the European Union

Energy Report

Summer 2014

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Executive Summary

This report examines the balance of competences between the European Union (EU) and the United Kingdom in the area of Energy and is led by the Department for Energy and Climate Change. It is a reflection and analysis of the evidence submitted by experts, non-governmental organisations, business people, Members of Parliament and other interested parties, either in writing or orally, as well as a literature review of relevant material. Where appropriate, the report sets out the current position agreed within the Coalition Government for handling this policy area in the EU. It does not predetermine or prejudge proposals that either Coalition party may make in the future for changes to the EU or about the appropriate balance of competences.

The Development of EU Energy Competence and Policy

Chapter One describes the development of EU competence in energy and its current state and shows how the main drivers for EU energy policy have developed and changed over time.

The history of the EU is closely tied to energy and two of the original communities, the European Coal and Steel Community (established in 1951) and the European Atomic Energy Community (established in 1957), were partly, or primarily, concerned with energy. However, despite this early focus on energy, little further action was taken over the following decades, during which Member States' energy mixes and market structures developed independently alongside the decline in the importance of coal and the rise in importance of oil as energy sources. At the time of the UK's accession to what was then the European Economic Community (EEC) in 1973, no specific legal base for energy measures was included in the EEC Treaty. Instead, a range of general provisions based on substantive law (such as the four freedoms) of the EEC Treaty provided the legal basis for energy measures and legislation. These included its powers to regulate the Single Market or under general powers to pursue the Community's objectives. This remained the case until express provision was made in the Treaty of Lisbon for the EU's competence in energy.

Following the Treaty of Lisbon, the Treaty on the Functioning of the European Treaty (TFEU) provided competence in the area of energy – which is shared between the Member States and the EU. However, the EU's competence is restricted as the adoption of measures which: 'affect a Member State's right to determine the conditions for exploiting its energy resources, its choice between different energy sources and the general structure of its energy supply' is prohibited. Consequently, such measures can only be adopted on the basis of other, non-energy specific provisions, such as by unanimous decision of the Council in accordance with Article 192(2)(c) TFEU.

How EU competence has been used to develop energy policy, both before and after the adoption of express provisions under the Treaty of Lisbon, has been influenced by a number of key drivers, which have included:

- The perceived need for reform and transparency of the energy market within the EU, encompassing market liberalisation, cross-border market access and greater integration of national markets. This has led to a series of legislative packages, since 1990, aimed at introducing competition into energy markets and greater interconnection of markets. This culminated in the Third Energy Package in 2009 which envisages completion of the internal market by 2014;
- The recognition of the growing need for protection of the environment and the promotion of measures to tackle climate change addressing the fundamental relationship between energy use and generation, energy efficiency and greenhouse gas emissions. This led initially to a series of measures aimed at addressing the air pollution impacts of energy generation and latterly a series of key legislative interventions to promote the deployment of renewable energy technologies and improvements in energy efficiency in order to reduce greenhouse gas emissions to meet the EU's climate change objectives;
- Concerns about the EU's energy security in the light of growing import dependency and global demand for energy and the need for the EU to engage effectively externally. A series of supply disruptions, from the oil crises in the 1970s to interruptions to gas supply from Russia in 2009, led to a series of measures to cope with supply disruptions and enhance the EU's energy infrastructure, particularly for interconnection; and
- The key contribution that reliable and affordable energy has to make to driving and underpinning EU competiveness and economic growth. This has led to an increased focus on the question of energy prices and the role of competitive markets, greater inter-connection and action to improve energy efficiency to help lower costs and reduce energy demand.

The significance of these individual, and at times conflicting, drivers has varied over time as a result of developments within the EU and external developments, as the EU has attempted to develop and implement an energy policy that seeks to address multiple objectives.

EU Competence and the UK National Interest

Chapter Two considers and details the evidence received from individual stakeholders on how the competence exercised by the EU has impacted on the development of energy policy and the UK's national interest.

Overall, stakeholders, whilst viewing the EU's competence in this field as being valuable and having been generally beneficial, also expressed a degree of frustration about how that competence had been exercised in some individual areas of policy and legislation.

Stakeholders from across all sectors highlighted a number of benefits that they considered derived from the exercise of the EU's competence including: a level-playing field for competition within the Single Market; greater ambition on renewables and energy efficiency than would otherwise have been the case; removal of planning and regulatory barriers for investment in energy infrastructure; support for innovation and research; greater weight in international negotiations; and establishing long term policy frameworks that aided investment decisions.

Stakeholders also noted the extent to which the UK has successfully influenced and led EU policy, particularly in liberalising its energy markets. However, others noted that this had not always worked to the UK's advantage as the UK has often needed to change its existing legislation when harmonising rules and regulations have been subsequently agreed at the EU-level.

Stakeholders highlighted the tensions between, on the one hand, a desire to avoid prescription and a wish to see additional flexibility within EU legislation to reflect the often very different national circumstances in Member States, or indeed regions of Member States, and, on the other, the benefits that come from more harmonised, prescriptive approaches that help create a level playing field for competition. However, stakeholders, particularly from industry, also argued that greater flexibility in implementation was leading to differing interpretation of legislation across the EU which in some cases was placing the UK at a competitive disadvantage. On some occasions these disadvantages were felt to be the result of over implementation or 'gold plating' by the UK. A number of respondents, particularly from industry, also noted what they saw as burdens imposed by domestic legislation being applied in addition to EU legislation.

Respondents, particularly from the energy sector, commented on what they saw as the incoherence of elements of energy policy with the interaction between individual pieces of legislation sometimes leading to unintended consequences – with the wider impacts of the three pronged '20-20-20' energy and climate change targets adopted under the 2020 Climate and Energy framework package being highlighted. The cumulative impact of regulation on business was also stressed by a number of respondents.

The evidence also suggested concerns about the effectiveness of policy-making and the EU processes that underpin legislation in this area. In particular, stakeholders from all sectors highlighted issues around the development and use of impact assessments for new legislation, the inflexibility of EU processes to adapt to changing circumstances and the tendency for the Commission to pursue new legislation rather than focussing on monitoring, enforcement and revision of existing legislation.

Competition and Internal Market

Many respondents, from across all sectors, regarded the EU internal energy market legislation as a fundamental element of EU energy policy and one which had delivered significant benefits for the UK. It had provided: a common framework in which businesses could operate; increased competition to the benefit of the consumer; facilitated cross-border trading; enhanced interconnection and improved security of supply. However, affordability of energy supplies was also of growing importance and some stakeholders, particularly those speaking on behalf of consumers of energy, felt that not enough attention had been paid to the price effects of EU policies in the past.

Stakeholders also highlighted that the full impact of all 28 Member States achieving fully functioning liberalised markets, without the distorting effect of regulated prices in some Member States, has yet to be realised. Though it was recognised that the process is well underway, slow or partial implementation of the obligations and measures in the internal market legislation by some Member States meant that many barriers to competition remained. In that context, stakeholders, particularly from the energy sector, argued that there should be more effective monitoring by the Commission of Member States' progress in implementing existing legislation and that they should take action (infractions) if they failed to do so.

Security of Energy Supply

There was widespread recognition amongst stakeholders across all sectors that security of supply issues had risen up the EU agenda, particularly following the January 2009 Russia/ Ukraine gas contract dispute, when 30% of the EU's gas imports were cut off for two weeks, and EU action to improve security of supply was welcomed. Since the close of the consultation period for this report, subsequent Russian actions in Ukraine have highlighted the need for energy security to remain a core component of energy policy into the future. A number of Member States are dependent on a single supplier source for significant proportions of their energy needs. Energy security is therefore likely to remain a dominant theme for the EU and, in particular, be a priority for the incoming Commission.

Stakeholders, particularly from downstream sectors, highlighted a number of benefits flowing from the EU's actions to enhance energy security and improve interconnection. Respondents considered the adoption of common rules for trans-boundary interconnection projects as more effective than previous piece-meal arrangements between Member States. EU funding in this area through the Connecting Europe Facility was also welcomed. However, some stakeholders from the oil sector considered that action should be taken at the national level to ensure adequate levels of supply security and resilience.

Some stakeholders argued that security of supply issues had been given insufficient weight within EU energy policy, particularly when compared to the focus on sustainability, which they considered had distorted price signals for investments in other energy options and infrastructure. Respondents also highlighted that, in some cases, it was Member State decisions and policies that were impacting on security of supply by reducing supply options, for example, by banning Carbon Capture and Storage (CCS), nuclear energy or shale gas exploitation.

Exploitation of indigenous energy sources was highlighted by respondents as a key means of enhancing the EU's energy security. Stakeholders were split on the role of the EU in regulating the upstream sector involved in oil and gas extraction. Respondents from the oil sector considered that EU legislation had been unnecessary and duplicative of world-leading UK controls. On shale gas exploitation, whilst some stakeholders, particularly from the energy sector, felt there was no need for additional EU legislation, others representing environmental groups suggested that existing national or EU controls were not sufficient to mitigate the potential environmental impacts.

Sustainability

The focus of stakeholders' responses on the role of the energy sector, in meeting the EU's climate change objectives, was on the implications of existing EU targets and legislation for renewable energy and energy efficiency.

Many stakeholders, particularly from the renewables sector and environmental groups, argued that, without action at the EU level to promote renewable energy and energy efficiency, less progress would have been made in deploying these technologies at the Member-State level, including in the UK. A number of respondents also highlighted the wider economic benefits that this had delivered. However, other respondents raised the negative impacts they felt action at the EU-level had had on energy prices and security of supply.

Stakeholders, particularly from the renewables sector, considered that having a specific and binding target for renewables had been fundamental in shaping UK renewables policy and providing investor certainty. Others, from a range of sectors, felt that having a renewables target had distorted the market and created perverse incentives to deploy one technology over another, even if not cost-effective to do so.

Stakeholders pointed to the EU biofuels target as an example of a measure that had had unintended and negative consequences in terms of competition for land and social impacts. However, stakeholders from the renewable industry in particular saw benefits in the original policy framework and highlighted the threats to investment in their industry caused by changes in EU policy on first generation biofuels.

There was broad agreement amongst stakeholders across all sectors that setting energy performance standards for energy-using products at the EU level was consistent with the requirements of the Single Market and had helped drive innovation. Similarly, requirements for energy labelling of products had helped trigger behaviour change amongst consumers. However, a number of respondents considered that other EU energy efficiency legislation was overly prescriptive which meant that requirements were not always cost-effective. Requirements were also often inconsistently implemented by Member States. Some respondents considered that the UK had suffered from being a leader in this area, often having to amend existing UK legislation to meet new EU requirements.

A number of stakeholders, particularly those from the sector, felt that EU policy had actively militated against investment in CCS, notably the EU renewable energy target which had meant that investment in renewables had been prioritised over CCS. In addition, these stakeholders considered that the emphasis on financial liabilities in the EU's CCS legislation had also acted as a disincentive.

EU External Energy Relations

The extent of EU competence in the field of external energy relations remains a subject of debate amongst Member States, in particular the extent to which the EU might speak on behalf of its Member States. A particular concern has been to ensure that Member States are not constrained from speaking freely on their own behalf by the exercise of EU competence.

Many stakeholders from all sectors considered that speaking with a single voice as the EU added weight, particularly when dealing with key energy suppliers and particularly for smaller Member States, though others suggested that Member States could have competing interests and a collective approach would not always be possible. It was also suggested that the very process of securing an EU position can delay progress.

Nuclear and the European Atomic Energy Community (Euratom)

Euratom was established in 1957 to encourage the development of a European nuclear industry through co-operation between Member States and a sharing of resources. Since 1957, Euratom has been ratified by all Member States who subsequently joined the EU, at the same time as they accede to other EU Treaties. Unlike the EU Treaties, the Euratom Treaty has not been significantly amended since it was signed in 1957.

Stakeholders from a range of sectors generally considered that Euratom had provided an effective framework for the development of nuclear energy in Europe and had helped ensure high safety standards. However, a number of stakeholders felt that not enough had been done at the EU-level to promote nuclear energy as a low-carbon energy source and a means of enhancing the EU's security of supply despite Euratom having, as a primary aim, the promotion of nuclear energy.

Future Challenges and Opportunities

Chapter Three considers the future challenges and opportunities and considers how EU competence might be best deployed (or not deployed) to meet these in the UK's national interest. Stakeholders considered that huge challenges lie ahead in the energy field and at the heart of these challenges are:

- The impact of growing global energy demand and geo-political developments on the future security of the EU and UK's energy supply;
- The need for affordable energy to underpin EU and UK competiveness and economic growth, the implications of rising and divergent energy prices and the implications of the completion of the internal market; and
- Ensuring the EU's 2030 framework for energy and climate change policy focuses on delivering cost-effective de-carbonisation of energy. Stakeholders, particularly from the energy sector, highlighted potential implications of further steps to complete the internal market and enhance inter-connection, in particular the potential for harmonisation of renewable support schemes and capacity mechanisms and called for greater powers for EU-level bodies such as the Agency for the Cooperation of Energy Regulators (ACER).

Whilst the three '20-20-20' energy and climate change targets introduced in 2007/2008 have yet to run their course, many stakeholders agreed with the Commission that it was timely to look beyond 2020 to 2030 and agree a policy that would give long-term stability to a market that is not yet fully delivering on the necessary means and infrastructure to decarbonise.

Looking ahead to this post-2020 climate and energy framework, the views of stakeholders were split as to whether a single emissions target was preferable in the context of a 2030 framework, rather than multiple targets for greenhouse gas emissions, renewable energy and energy efficiency. A substantial number of stakeholders, including low-carbon investors, suppliers of energy and energy intensive users, were generally of the view that a single emissions target was preferable. In this way, they argued, the UK and other Member States could resolve for themselves the inherent tensions of competing claims of security of supply, sustainability, competitiveness and social responsibility and adapt them for their own particular circumstances.

However, stakeholders directly engaged in renewable energy activities tended to disagree with a single emissions target approach. They believed that, in order to keep up the momentum of renewable energy generation and maximise the UK potential in this field, new renewable targets were essential.

Introduction

Terms of Reference

This report is one of 32 reports being produced as part of the Balance of Competences Review. The Foreign Secretary launched the Review in Parliament on 12 July 2012, taking forward the Coalition commitment to examine the balance of competences between the UK and the EU. It will provide an analysis of what the UK's membership of the EU means for the UK national interest. It aims to deepen public and Parliamentary understanding of the nature of our EU membership and provide a constructive and serious contribution to the national and wider European debate about modernising, reforming and improving the EU in the face of collective challenges. It has not been tasked with producing specific recommendations or looking at alternative models for Britain's overall relationship with the EU.

The review is broken down into a series of reports on specific areas of EU competence, spread over four semesters between 2012 and 2014. More information can be found on the review, including a timetable of reports to be published, at www.gov.uk/review-of-the-balance-of-competences.

The analysis in this report is based on evidence gathered following a call for evidence. It draws on written evidence submitted, notes of workshops and discussions held during the call for evidence period and existing material which has been brought to our attention by interested parties, such as past select committee reports or reports of the European Commission. A list of the stakeholders who submitted evidence and attended workshops can be found at Annexes Three and Four. The separate Appendices contain the written evidence and notes of workshops published alongside this report. A literature review of relevant material, as well as opinions received in the course of regular business from a range of organisations and people has also been drawn upon, as has relevant evidence from other Semester reports where interests have overlapped with this report.

Definition of EU Competence

For the purposes of this review, we are using a broad definition of competence. Put simply, competence in this context is about everything deriving from EU law that affects what happens in the UK. That means examining all the areas where the Treaties give the EU competence to act, including the provisions in the Treaties giving the EU institutions the power to legislate, to adopt non-legislative acts, or to take any other sort of action. But it also means examining areas where the Treaties apply directly to the Member States without needing any further action by the EU institutions.

The EU can only act within the limits of the competences conferred on it by the Treaties, and where the Treaties do not confer competences on the EU they remain with the Member States.

The EU must act in accordance with fundamental rights as set out in the Charter of Fundamental Rights, such as freedom of expression and non-discrimination, and with the principles of subsidiarity and proportionality. Under the principle of subsidiarity, where the EU does not have exclusive competence, it can only act if it is better placed than the Member States to do so because of the scale or effects of the proposed action. Under the principle of proportionality, the content and form of EU action must not exceed what is necessary to achieve the objectives of the EU Treaties.

There are different types of competence: exclusive, shared and supporting. Only the EU can act in areas where it has ***exclusive*** competence, such as the customs union, competition and common commercial policy. In areas of shared competence, such as energy, the Single Market and environment, either the EU or the Member States may act, but the Member States may be prevented from acting once the EU has done so. In areas of ***supporting*** competence, such as culture, tourism and education, both the EU and the Member States may act, but action by the EU does not prevent the Member States from taking action of their own.

Engagement with Interested Parties

A programme of direct engagement with stakeholders was undertaken and 13 workshops held – in London, Brussels, Glasgow, Aberdeen, Belfast and Cardiff. Written evidence has been received from over 80 respondents (list of stakeholders at Annex Three) and over 90 stakeholders attended the workshops (list of stakeholders attending workshops at Annex Four). Stakeholder engagement events are listed at Annex Five.

Areas of Competences not Covered by this Report

The Energy Report has not considered climate change and international negotiations on climate change, carbon pricing, nor the reduction of EU Member State greenhouse gas emissions via 'burden-sharing' arrangements and the EU Emissions Trading Scheme (EU ETS). These issues were considered in the Semester Two report on Environment and Climate Change.[1] However some references to emissions reductions have been made in the Energy report where there is discussion of the EU '20-20-20' energy package targets on renewables, energy efficiency and green-house gas emissions and in the context of the subsequent 2030 package proposals published by the Commission in January 2014, which also includes action on emissions reduction.

Other Areas of Overlap with Other Reports

Semester One and Two reports: Transport – Fuel quality and biofuels; *Foreign Policy* – EU external representation; *Research and Development*.

Semester Three reports (concurrent with this report): *EU Budget* – the Connecting Europe Facility (CEF) funding for energy projects; *Social and Employment* – health and safety aspects of energy offshore activities; Competition and Consumer Policy – State aid and competition aspects of the internal energy market; *Cohesion* – Trans-European Networks (TENS) policy; *Agriculture* – biofuels.

[1] HMG, *The Balance of Competences Between the UK and the EU: Environment and Climate Change Report* (2014).

Chapter 1: Development of Competence and Current State of Competence

Introduction

1.1 This chapter considers the development of the EU's energy policies, explains the current EU competence in the area of energy and considers briefly the drivers that have influenced how that competence has developed and been used over time and the part the UK has played in those developments. These drivers have included:

- The perceived need for reform and transparency of the energy market within the EU, encompassing market liberalisation, cross-border market access and greater integration of national markets;
- The recognition of the growing need for protection of the environment and the promotion of measures to tackle climate change aimed at addressing the fundamental relationship between energy use and generation, energy efficiency and greenhouse gas emissions;
- Concerns about the EU's energy security in the light of growing import dependency and global demand for energy and the need for the EU to engage effectively externally; and
- The key contribution that reliable and affordable energy has to make to driving and underpinning EU competiveness and economic growth.

1.2 The significance of these individual, and at times conflicting, drivers has varied over time as result of both developments within the EU, but also as a result of external developments, as the EU has attempted to develop and implement an energy policy that seeks to address multiple objectives.

The Development of EU Energy Policy

1.3 The history of the EU is closely tied to energy and two of the original communities – the European Coal and Steel Community (ECSC) and the European Atomic Energy Community (Euratom) – were partly, or primarily, concerned with energy. The ECSC was established by the Treaty of Paris in 1951 to create a common market for coal and steel among its Member States to avoid the competition between European nations over natural resources which was perceived to have been an important driver behind earlier conflicts in the 20th century. The Treaty expired in 2002.

1.4 The establishment of Euratom in 1957 to promote nuclear energy in the EU was an additional energy-based institution for co-operation. Euratom aimed to encourage

the development of a European nuclear industry through co-operation between Member States and a sharing of resources. Euratom covers the nuclear Research and Development (R&D), nuclear investment and safety and security of nuclear materials. It does not cover the use of nuclear energy for military purposes. Since 1957, Euratom has been ratified by all Member States who subsequently join the EU at the same time as they accede to other EU Treaties. Unlike the EU Treaties, the Euratom Treaty has not been significantly amended since it was signed in 1957.

The Relationship Between Euratom and The EU

Subjects covered by the EU Treaties, for example energy and environmental protection, may also be relevant to the field of nuclear energy and radiological protection. Article 106a(3) of the Euratom Treaty states:

> 'The provisions of the Treaty on European Union and of the Treaty on the Functioning of the European Union shall not derogate from the provisions of this Treaty'.

This means that, in the event of a conflict between the Euratom Treaty and the EU Treaties, the Euratom Treaty will apply. Further, where the Euratom Treaty makes specific provision, this should prevail over a more general provision in the EU Treaties. However, where there are no provisions on a particular subject in the Euratom Treaty, the EU Treaties can apply. Therefore there is some competence in the field of nuclear energy or radiological protection to be derived from the EU Treaties, but only where suitable provision is not made in by the Euratom Treaty.

1.5 Despite this early focus on energy, little further action was taken in the field of energy over the following decades, during which Member States' energy mixes and market structures developed independently alongside the decline in the importance of coal and the rise in importance of oil as an energy source.

The Oil Crises

1.6 The oil crisis in 1973-1974, when a number of Member States, in particular the Netherlands, faced oil embargos from the Arab States and oil prices rose considerably, triggered the first steps towards greater EU co-operation. In 1974, a Council resolution for a new energy policy strategy was adopted, stressing the value of co-ordination between Member States to reduce the rate of increase in energy demand, diversify energy supplies, accelerate development of nuclear energy, and consider environmental issues associated with energy use.[1] A further Council Resolution in 1974 adopted an objective to reduce import dependence to 50% (or, if possible, 40%) by 1985 through increased use of solid fuels, natural gas and nuclear energy.[2]

1.7 However, the measures on oil stocking and other responses to help manage future supply interruptions were addressed primarily through the creation of the International Energy Agency (IEA), rather than through the then European Community (EC). Nevertheless, in 1975, directives were adopted that required Member States to limit the use of natural gas and oil for electricity generation and to retain minimum fuel stocks at thermal generation plant.[3]

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1 Council Resolution of 17 September 1974 concerning a new energy policy strategy for the Community, 1974.

2 Council Resolution of 17 December 1974 on a Community action programme on the rational utilization of energy, 1974.

3 Council Directive 75/339 on maintenance of minimum stocks of crude oil and/or petroleum products at power stations, 1975; and Council Directive 75/404 on restriction of use of natural gas in power stations, 1975.

1.8 Concerns about security of supply were also the key drivers behind the first pieces of legislation aimed at improving energy efficiency. These focussed on performance standards for domestic heat generators (boilers) and energy labelling.

1.9 A further oil crisis occurred in 1979, associated with a change of regime in Iran. In 1979 the EC committed to Community-wide and national oil import ceilings for 1980 and 1985.

Focusing on the Market

1.10 In the 1980s and 1990s, supply concerns began to take a back seat as prices stabilised and the Member States who made up the EC, including the UK, had relative abundance of, and ready access to, oil, gas and coal. In addition, several Member States had substantial new indigenous hydrocarbon resources of their own, particularly the UK, Netherlands and Denmark – all of whom were net energy exporters.

1.11 With shifting import profiles over the 20 years to the turn of the century, cross-border gas and electricity interconnection between Member States developed piecemeal. No common framework was in place to regulate those markets other than cross-cutting internal Single Market rules, such as those covering competition and State aid. Some of these were the subject of exclusive competence, for example, competition, but in other areas Member States regulated their own markets, for example, in respect of prices and tariffs.

1.12 The lack of EU legislation to regulate the market was predominately because most Member States tended to regard energy supply as a natural monopoly. Whilst the UK had liberalised its own electricity and gas markets and broken up (unbundled) its energy monopolies, most energy companies in other Member States remained vertically integrated-combining generation, transmission and supply. Indeed many were state-owned and some remain totally or partly state-owned to this day.

1.13 The first generation of electricity and gas market directives (namely the Price Transparency Directive, followed by the Electricity and Gas Transit Directives and culminating in the first Electricity Directive and the first Gas Directive, providing common EU rules for the internal market in electricity and gas), have their origins in an EU Commission paper from 1988.[4] This paper stressed the need for transparency in the energy markets, but also acknowledged that a gradual approach to market integration was required. The reasons for a gradual approach included the need to allow the newly denationalised energy industries to adjust to competition and to permit Member States to choose how to regulate their respective energy sectors, albeit within the limits of the four freedoms and EU competition law.

1.14 A review of the implementation of the first gas and electricity Directives in 2001 concluded that there was significant variation in implementation which constrained the process of creating a single energy market within the EU. Reflecting on this, the European Council Summit in Gothenburg in 2001 called on the Commission to prepare a second energy liberalisation package. This package drew heavily on the experience of market liberalisation in the UK.

[4] These directives are (in order): Directive 90/337/EEC on a community procedure with regard to transparency of the prices of gas and electricity for the final user in industry, 1990; Directives 90/547/EEC on the transit of electricity through transmission grids, 1990; Directive 91/296/EEC on the transit of natural gas through grids, 1991; Directive 96/92/EC concerning common rules for the internal market in electricity, 1996; Directive 98/30/EC concerning common rules for the internal market in natural gas, 1998; and Commission of the European Communities, *The Internal Energy Market, Commission Working Document* COM (1988) 238 final.

1.15 When adopted in 2003, these new electricity and gas directives required full electricity and gas market opening for non-household consumers by July 2004 and for all consumers by July 2007. To prevent discrimination by Transmission System Operators (TSOs) in transmission system access issues, the directives mandated organisational separation of units operating transmission activities from those operating generation and supply activities (legal unbundling). Additionally, the directives instructed Member States to set up national regulatory agencies with well-defined functions. The directives provided greater transparency through publication of network tariffs by the TSOs (regulated access) instead of case-by-case negotiations.

Environmental Protection

1.16 The varied environmental impacts of generation and use of energy have been the focus of much EU legislation as the impact of emissions on air, water and land has become better understood. Early legislation was aimed particularly at improving air quality through control of industrial emissions, including those from generation plants. This was enacted through directives such as that on combating of air pollution from industrial plants adopted in 1984 and the more holistic Integrated Pollution Prevention and Control Directive of 1996, which drew heavily on the UK's own Integrated Pollution Control regime.

1.17 Of particular importance for energy generation has been the Large Combustion Plant Directive adopted in 1988 (revised in 2001). This limits emissions from combustion plants with a thermal capacity of 50 MW or more. The Directive specified emission limits for sulphur dioxide, nitrogen oxides and particulates. Under the terms of the Directive, combustion plant built after 1987 must comply with specific emissions limits. From 2007, plant built earlier than 1987 could either 'opt in' to comply with the emissions limits, or 'opt out'. Plants which opted out were limited to a maximum of 20,000 hours further operation, and must have closed completely by the end of 2015. Across Europe, 205 plants have opted out, with the UK having the largest proportion of opted-out plant in terms of total capacity.

Tackling Climate Change

1.18 Following the Rio Summit in 1990 and the adoption of the Kyoto Protocol in 1997, there was an increasing recognition of the importance of taking action to combat climate change. This led to the adoption of a series of EU measures which have influenced EU energy policy, including the EU Emissions Trading System in 2003, the impacts of which have already been considered in the Balance of Competence report on environment and climate change.

1.19 The need to reduce greenhouse gas emissions has also helped drive new EU legislation for the energy sector, specifically to promote the use of renewable energy and improve energy efficiency within the EU. In 2001, the Directive on Electricity Production from Renewable Energy Sources set new national indicative targets for renewable energy production for individual Member States to be achieved by 2010.

1.20 Earlier action on energy efficiency included setting minimum energy performance standards for a range of energy-using products and, with the SAVE Directive of 1993, a requirement to promote energy efficiency to help limit carbon dioxide emissions.[5] However, the first comprehensive EU framework for energy efficiency was put in place

[5] Directive 93/76/EEC of the European Council to limit carbon dioxide emissions by improving energy efficiency (SAVE), 1993.

in 2002 with adoption of an Energy Efficiency Action Plan that aimed to deliver a 1% improvement in energy intensity per year to 2010, over and above the business-as-usual rate of improvement. It also led to the establishment of a comprehensive suite of legislation – the Energy Performance of Buildings Directive in 2004, the Co-generation Directive in 2004, the Eco-design of Energy Using Products Directive in 2005 and the Energy-End Use Efficiency and Energy Services Directive in 2006.

1.21 The wider impacts of environment and climate change legislation were considered in the Balance of Competence report on environment and climate change.[6]

A European Energy Policy

1.22 It was not until the Hampton Court informal European Council (Heads of Government) under the UK Presidency in 2005 that the first significant attempts to forge a more comprehensive EU energy policy were made. By that time ten more Member States had joined, or were about to join, the EU from Central and Eastern Europe. Their needs were very different from those of the existing Member States – with less developed, relatively closed and heavily regulated markets. Most of those Member States were reliant on a single supplier source for their gas supplies (Russia) and some had limited or no electricity interconnection to the rest of the EU. Many Member States were also increasingly dependent on oil imports from third countries, often from less stable areas of the world.

1.23 In 2007, the European Commission subsequently published its Communication *An Energy Policy for Europe*.[7] This reflected a growing realisation amongst Member States that further steps in opening up the internal gas and electricity markets, including making efforts on greater interconnection, were needed. There was also a heightened recognition of the challenges and issues around climate change and the interplay between energy security, supply, energy efficiency and greenhouse gas emissions.

1.24 In March 2007, the Energy Council agreed the '20-20-20' package that was later enshrined in EU law:

- A 20% reduction in EU greenhouse gas emissions in each Member State by 2020 compared with 1990 levels, with separate targets for each Member State;
- 20% of all energy consumed in the EU to be generated from renewable sources by 2020 with a separate target set for each Member State; and
- A 20% reduction in primary energy consumption (non-binding) in each Member State by 2020 compared with 'business as usual' projections (set against a 2007 baseline).

1.25 These targets in turn have driven the adoption of further legislation, notably the Renewables Directive 2009/28/EC which provided for binding national renewable energy targets for 2020. In addition, a further Energy Efficiency Action Plan was adopted for 2007-2012 to deliver the 2020 energy-saving target, introducing a range of new or amended energy efficiency legislation including updates to the Labelling and Energy Performance of Buildings Directive. This was further enhanced with the adoption of the Energy Efficiency Directive in 2012 with a range of requirements intended to put the EU back on track to meet the 2020 target.

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6 HMG, *The Balance of Competences Between the UK and the EU: Environment and Climate Change* (2014).

7 European Commission Communication, *An Energy Policy for Europe* (2007).

Further Steps to Energy Market Reform

1.26 The Third Package of internal electricity and gas market reform legislation was also adopted in 2009 to further improve the functioning of the market through a range of measures including:

- Unbundling the ownership of transmission systems from ownership of electricity generation, gas production and/or supply to break up vertically integrated companies and open up competition;
- Improving levels of customer protection;
- Ensuring the independence of national regulatory authorities from national governments; and
- Establishing a European Agency for the Cooperation of Energy Regulators (ACER) to assist national regulators in enforcing the internal energy market rules.

1.27 The Third Package aims to achieve a fully functioning market by 2014 and, by 2015, to end the energy island status of those few Member States who are still unconnected to the rest of the EU.

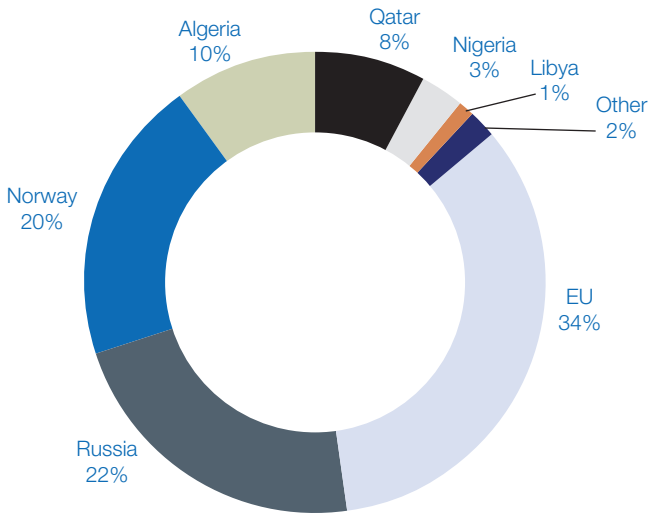
Energy Security Back on the Agenda

1.28 Over time the EU's dependency on imported energy has continued to grow. In 2011, according to Eurostat data, the EU had a 67% dependency on gas imports from third countries, 85% oil dependency and 62% on coal. The UK became a net importer of gas in 2004 for the first time since 1996 and a net importer of oil in 2005 for the first time since 1992. Denmark and the Netherlands are now the only net gas exporters in the EU and Denmark is the only net oil exporter. Poland and the Czech Republic continue to be net coal exporters.

1.29 Provisional DECC figures to December 2013 showed that 77% of UK gas imports were sourced by pipeline from Norway (58%) or as shipped Liquefied Natural Gas – LNG – (19%). The remaining 23% of gas imports were sourced from Belgium (7%) and the Netherlands (16%). Gas imports from the continent of Europe arrive via the interconnector pipeline from Belgium and the BBL pipeline from the Netherlands.

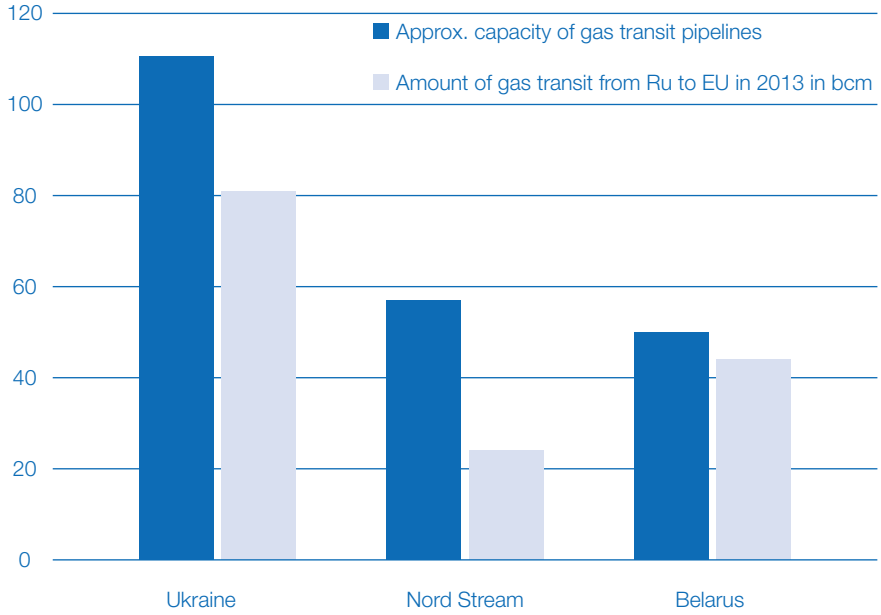
1.30 The charts below illustrate the overall dependence of the EU on third country sources for its gas.

Chart One: Where Does the EU Get its Gas From?



Source: Eurostat, BP. Note: 2011/12 data.

Chart Two: Russian Gas has Just a Few Channels



Source: GazpromExport, CEEMarketwatch, Commerzbank.

1.31 Issues surrounding energy security and Member State dependencies on imports were once again highlighted when, in January 2009, as a result of a contract dispute between Russia and Ukraine, 30% of the EU's supply of gas was disrupted for two weeks. Member States' vulnerabilities to supply disruption were exposed, particularly those reliant on a single source for their gas in the central and eastern regions of the EU.

1.32 As a result of this gas supply crisis, Member States at the European Council of February 2009 agreed urgent and concerted action to improve the EU's vulnerability to supply disruptions. This led in 2010 to a revamp of earlier light touch security of gas supply legislation, including a requirement for gas interconnectors to be bi-directional.

1.33 Improved inter-connection (both for gas and electricity) is a fundamental building block for improved energy security and to facilitate increased energy flows around the EU. However, significant barriers to investment still remain, particularly in respect of cross-border interconnection projects where Member States consenting regimes can differ radically. The Trans-European Energy Infrastructure Regulation (TEN-E), adopted in 2013, aims to address these barriers. It established a framework and timeline for streamlining permitting and planning cross-border consent procedures for Projects of Common Interest (PCIs) established under that legislation and also provides a mechanism for agreeing division of costs cross-border for those projects.

1.34 Recent events in Ukraine have brought the issue of energy security back onto the EU agenda. The March 2014 European Council asked the Commission to conduct an in-depth study of EU energy security and a plan for reducing EU energy dependence. The conclusion of this study is likely to form a major strand of the work on energy of the new European Commission.

Nuclear Power – The Impact of Fukushima

1.35 Nuclear power plants generate about 30% of the electricity produced in the EU. There are currently 132 nuclear reactors in operation in 14 Member States and each Member State can decide whether it wants to include nuclear power in its energy mix. The Euratom Treaty has provided for specific measures adopted at EU level to protecting the health of those working in the sector and of the public at large, and protecting the environment from the risks associated with the use of nuclear fuel and the resulting waste.

1.36 The significant incident at the Fukushima nuclear plant in Japan in 2011 resulted in a number of Member States re-evaluating their approach to nuclear power, notably Germany, which took the decision to phase-out nuclear energy. It also spurred action at the EU level with stress tests carried out at nuclear plants across the EU following agreement between the Commission and the European Nuclear Safety Regulatory Group (ENSREG) representing national regulators. Whilst these reviews concluded that safety standards were high, lessons learnt from the exercise were reflected in the proposal in 2013 for the revision of the Nuclear Safety Directive and included a European system of peer reviews of nuclear installations that drew on the peer review process used during the post-Fukushima nuclear stress tests.

EU Energy Strategy

1.37 In 2010, the year following the gas crisis and publication of the Third Package of internal market reform suite of legislation, the Commission adopted a new strategy for the period to 2020 – *'Energy 2020: A strategy for competitive, sustainable and secure energy'*. This built on the progress already made towards achieving the 20-20-20 targets and, endorsed by Member States, continues to provide the basis for the EU's current energy policy framework. It focused on five priorities:

- Achieving an energy efficient Europe;
- Building a truly pan-European integrated energy market;
- Empowering consumers and achieving the highest level of safety and security;
- Extending Europe's leadership in energy technology and innovation; and
- Strengthening the external dimension of the EU energy market.

Looking Ahead

1.38 At the time of writing, current EU actions related to energy are largely focused on: completing the internal market reforms largely through agreeing market and network codes provided for under that legislation; taking decisions on Member States' State aid cases on supporting low carbon energy and the investments needed to secure it; taking forward the TEN-E infrastructure package with its programme of PCIs to increase security of supply and facilitate increased trading; and working towards agreement on the framework of a 2030 package, aimed at achieving medium and long term energy and climate change objectives. The focus is also increasingly on the need for further diversification of EU energy supplies. These issues are considered further in Chapter Three.

Development of Competence

1.39 The EEC Treaty to which the UK acceded in 1973 did not refer explicitly to energy. Historically, one reason why energy was not expressly dealt with in the EEC Treaty was because in 1957 (when the Treaty of Rome was agreed), the principal source of energy in Europe was coal. At that time, the regulation of coal was already covered by the ECSC Treaty, the founding community of the modern EU. In addition, the nuclear energy industry was governed by the Euratom Treaty, which had also been adopted in 1957.

1.40 Beyond the specific areas covered by the ECSC and Euratom treaties, the original six Member States of the EEC considered that trade in other sources of energy, such as oil, would be covered by areas of substantive law, such as the free movement of goods.[8] This remained the case until express provision was made in TFEU for the EU's competence, shared with the Member States, in the field of energy.

Current State of Competence

1.41 Following the Treaty of Lisbon in 2009, Article 4 TFEU conferred shared competence in the field of energy on the EU and Member States. The nature and extent of this competence is dealt with in title XXI of the TFEU, under the "energy" heading. This title has one article, namely Article 194 TFEU, which sets out the powers of the EU to legislate in respect of energy.

[8] For instance, Article 122 TFEU (ex Article 100 EC); Article 114 TFEU (ex Article 95 EC); Article 49 (ex Article 43 EC); Article 50 TFEU (ex Article 44 EC); Article 53 TFEU (ex Article 47 EC); Article 59 TFEU (ex Article 52 EC); Article 352 TFEU; Article 191 TFEU and Article 192 TFEU.

Article 194

(1) In the context of the establishment and functioning of the internal market and with regard for the need to preserve and improve the environment, Union policy on energy shall aim, in a spirit of solidarity between Member States, to:

a) Ensure the functioning of the energy market;

b) Ensure security of energy supply in the Union;

c) Promote energy efficiency and energy saving and the development of new and renewable forms of energy; and

d) Promote the interconnection of energy networks.

(2) Without prejudice to the application of other provisions of the Treaties, the European Parliament and the Council, acting in accordance with the ordinary legislative procedure, shall establish the measures necessary to achieve the objectives in paragraph 1. Such measures shall be adopted after consultation of the Economic and Social Committee and the Committee of the Regions.

Such measures shall not affect a Member State's right to determine the conditions for exploiting its energy resources, its choice between different energy sources and the general structure of its energy supply, without prejudice to Article 192(2)(c).

(3) By way of derogation from paragraph 2, the Council, acting in accordance with a special legislative procedure, shall unanimously and after consulting the European Parliament, establish the measures referred to therein when they are primarily of a fiscal nature.

1.42 There are other competence provisions in the TFEU which are relevant to EU energy measures. Historically, these provisions were the legal competence basis for energy measures and it cannot be ruled out that they may provide additional or alternative legal basis for EU energy legislation. However, it is expected that future EU energy measures will be adopted under Article 194 TFEU.

(a) Article 122 TFEU allows the Council to decide appropriate measures in solidarity with Member States facing 'severe difficulties in the supply of certain products, notably in the area of energy'. According to European Court of Justice (ECJ) case law, Article 122 TFEU can only be relied on as a legal basis for a measure covering the energy sector if no other legal basis for the measure exists in the TFEU, under which the European Parliament has a role.

(b) Harmonisation measures which aim for high level of protection in the areas of health, safety, environmental protection and consumer protection have utilised Article 114 TFEU as a legal basis for several energy measures.

(c) The Council could use Article 352 TFEU (sometimes referred to as the broad 'enabling clause') to adopt measures in order to attain one of the EU's objectives, but only where the existing Treaties have not provided the necessary powers to do so already, and so long as the measure concerned remains within the confines of the EU's existing competence. The presumption is that, if an energy measure or proposal for legislation fits Article 194 TFEU, then that should be the preferred legal basis. Case law of the ECJ has established this principle.

(d) The EU's competence in the field of the environment has provided a legal basis for a large number of energy measures, notably in the field of renewable energy and energy efficiency. EU competence over the environment is provided for by Articles 191 and 192 TFEU and has been addressed in the Environment and Climate Change report. Competence in this field was first introduced by the Single European Act and thereafter enhanced by the Maastricht Treaty.

(e) The energy sector has also been a frequent source of cases under the EU State aid rules (Article 107 TFEU). Some of these cases have concerned aid granted to energy undertakings upon or following denationalisation and/or associated with unbundling, or various measures to support or encourage renewable energy sources, such as 'feed-in tariffs'.[9] The EU has sole competence in the field of State aid. The Commission has issued decisions, communications and guidelines in a number of areas, including coal, environmental protection and in the context of the EU Emissions Trading Scheme. As part of the modernisation of the EU State aid policy, the Commission has adopted new rules on public support for projects in the field of environmental protection and energy.[10] These guidelines came into force on 1 July 2014. State aid issues will be addressed in the Balance of Competence report on competition and consumer policy.

What this Means in Practice

1.43 The first paragraph of Article 194(2) confers competence on the EU to adopt measures necessary to achieve the objectives in article 194(1) by the ordinary legislative procedure. The scope of this competence is, however, restricted by the second paragraph of Article 194(2), which prohibits the adoption of measures which 'affect a Member State's right to determine the conditions for exploiting its energy resources, its choice between different energy sources and the general structure of its energy supply'. Consequently, such measures can still be adopted on the basis of other, non-energy specific provisions, such as by unanimous decision of the Council in accordance with Article 192(2)(c) TFEU. This provision requires the measures in question to be based on the environmental objectives in Article 191 TFEU, not primarily on security of supply objectives.

1.44 Article 194(2) requires that EU measures 'shall not affect' certain matters of national energy policy, while Article 192(2)(c) requires Council unanimity for adoption of measures 'significantly affecting' such interests. In other words, the competence to adopt measures in the security of supply interest by the ordinary legislative procedure under Article 194 is more limited than the competence to adopt environmental measures under Article 192(1) TFEU.

1.45 The national competence reservation in Article 194 TFEU is underlined by the Thirty Fifth Declaration included in the Final Act of the Treaty of Lisbon. This states:

Declaration on Article 194 of the Treaty on the Functioning of the European Union.

The Conference believes that Article 194 does not affect the right of the Member States to take the necessary measures to ensure their energy supply under the conditions provided for in Article 347.[11]

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[9] Essent Netwerk Noord, Case C-206/06, [2008] E.C.R. I-5497; and Preuseen Elektra, Case C-379/98, [2001] E.C.R I-2099.

[10] Commission Communication, *Guidelines on State Aid for Environmental Protection and Energy 2014 – 2020* C(2014) 2322 final.

[11] Article 347 TFEU permits Member States, after consulting each other with a view to protecting the EU Single Market, to take measures to deal with certain unforeseen events, such as dealing with serious internal disturbances, war and serious international tension constituting a threat of war.

Article 194 has been used as a legal basis for energy related legislative acts adopted since the entry into force of the Treaty of Lisbon including:

- Directive 2010/30/EU on labelling of energy-related products;
- Directive 2010/31/EU on the energy performance of buildings;
- Regulation (EU) 994/2010 on security of gas supply;
- Regulation (EU) 1233/2010 extending the economic recovery plan to energy efficiency and renewables;
- Regulation (EU) 1227/2011 on market transparency (the REMIT Regulation); and
- Directive 2012/27/EU on establishing a common framework of measures for the promotion of energy efficiency within the EU in order to meet the EU 2020 20% headline target on energy efficiency.

Article 192 (the environmental objective) was used as a legal basis for Directive 2013/30/EU on the regulation for the safety of offshore oil and gas operations.

Shared Competence – Member States and the EU

1.46 While Article 4 TFEU confers shared competence on the EU in the field of energy, the EU competence is limited by Article 194(2) TFEU if a Member State's right to determine the conditions for exploiting its energy resources, the choice between different sources or the general structure of its energy supply are affected. However, the EU has more flexibility by way of the special decision-making procedure with unanimity voting in the Council to legislate under Article 192(c) TFEU as long as it pursues an environmental objective.

The Role of the European Parliament

The EU Legislative Process

Treaties (which are primary EU legislation) allow for secondary EU legislation, such as directives and regulations to be made. These are proposed by the European Commission and usually agreed jointly by the Council (made up of ministers from each Member State) and the European Parliament. This is called the 'ordinary legislative procedure'. The Council acts by Qualified Majority Voting (QMV), where a certain number of votes are needed for the law to be agreed. This means that a single Member State does not have the power to veto.

The Council and the European Parliament may, through secondary legislation, delegate power to the European Commission itself to make further legislation under defined conditions, as delegated or implementing acts (tertiary EU legislation). Tertiary legislation can be passed more quickly than secondary legislation and is particularly suitable for more technical, less political regulation, but gives Member States and the European Parliament less control, for example, State aid).

1.47 For energy base under Article 194, the Council and Parliament act in accordance with the ordinary legislative procedure, by QMV where a specified majority of votes is required for the law to be agreed, meaning that a single Member State does not have the power to veto. The share of votes of each Member State reflects its population size.

1.48 Nuclear energy (and radiological protection more generally) is the subject of its own treaty, the Euratom Treaty. The European Atomic Energy Community ('the Euratom Community') is an entity distinct from the EU, with its own legal personality, its own objectives and decision-making process. Although the Euratom Community shares most of the EU's Institutions (including the Council, Commission, European Parliament and the Court of Justice), the European Parliament has a more limited role under the Euratom Treaty (essentially consultative body status) than under the EU Treaties.

Parliament v Council (Case-490/10)

The European Parliament sought annulment of Regulation (EU, Euratom) No. 617/2010, which was adopted by the Council on the dual legal basis of Article 337 and Article 187 of the Euratom Treaty.[a] According to the Parliament, the Council's choice of legal basis is erroneous because the measures covered by the Regulation fell within the energy responsibilities of the EU which are specifically governed by Article 194 TFEU. Those measures should, therefore, have been adopted on the basis of Article 194(2) TFEU in accordance with the ordinary legislative procedure laid down in that provision, instead of on the basis of Article 337 TFEU, which does not provide for involvement by Parliament. In addition, the Parliament took the view that it was not necessary to rely also on Article 187 of the Euratom Treaty in order to adopt the measures at issue.

The ECJ annulled Regulation (EU) No 617/2010 because it should have been adopted under Article 194 TFEU, to which the ordinary legislative procedure applies and not pursuant to Article 337 TFEU and Article 187 of the Euratom Treaty, where the consultation procedure applies and the Parliament could only provide an opinion on the proposed regulation.

[a] Regulation (EU, Euratom) No. 617/2010 of the European Council on notification to the EU Commission of investment projects in energy infrastructure within the European Union and repealing Regulation (EC) 736/96, 2010.

The Role of the ECJ

1.49 In simple terms, the ECJ interprets EU law to make sure it is applied in the same way in all EU Member States. The ECJ has made clear that there can only be one legal basis for a measure where another possible legal basis for the measure is liable to undermine the rights of the Parliament.[12]

1.50 In relation to nuclear, Article 2 of the Euratom Treaty sets out the key areas where the Euratom Community is to act and Chapters One to Ten of Title II of the Euratom Treaty provide more detail on the Euratom Community's role and competences in relation to these areas. Competence is shared with the Member States in some areas, while in other areas it is exclusive. Unlike the TFEU, the Euratom Treaty does not explicitly state which competences are shared and which are exclusive.

Although there is no express provision in the Euratom Treaty, the ECJ's judgment in Ruling 1/78 indicates that Euratom's activities can extend to the area of physical security in the nuclear field.

[12] Commission v Parliament and Council, Case C-178/03 [2006].

The provisions on health and safety in the Euratom Treaty have been interpreted broadly by the ECJ on several occasions in order to give them 'practical effect'. Although Chapter Three of that Treaty does not expressly refer to the safety of nuclear installations, the ECJ has held that the Euratom Community has competence in this area since 'it is not appropriate, in order to define the Community's competences, to draw an artificial distinction between the protection of the health of the general public and the safety of sources of ionising radiation'.

External Relations and Energy

1.51 Article 216 TFEU provides for the EU's competence over external action:

1. The Union may conclude an agreement with one or more third countries or international organisations where the Treaties so provide or where the conclusion of an agreement is necessary in order to achieve, within the framework of the Union's policies, one of the objectives referred to in the Treaties, or is provided for in a legally binding Union act or is likely to affect common rules or alter their scope.
2. Agreements concluded by the Union are binding upon the institutions of the Union and on its Member States.

1.52 Article 216 TFEU substantially codifies EU law on the competence of the EU over external action. Further, article 3(2) TFEU provides for the exclusive external competence of the EU. The EU has exclusive competence to conclude an international agreement:

When its conclusion is provided for in a legislative act of the Union or is necessary to enable the Union to exercise its internal competence, or in so far as its conclusion may affect common rules or alter their scope.

1.53 By Article 194 TFEU, where EU measures are adopted or already exist covering particular energy matters, the EU will have external competence over those matters where Article 216 TFEU is satisfied. The EU competence will be exclusive if the provisions of Article 3(2) TFEU are satisfied.

1.54 Examples of how the EU has exercised its external competence in the field of energy include the Energy Charter Treaty in 1994, the Energy Community Treaty 2006 and the first Energy Star Agreement with the United States in 2001.

1.55 Further information on the development of external competence can be found in the Balance of Competence report on foreign policy.[13]

[13] HMG, *The Balance of Competences Between the UK and the EU: Foreign Policy Report* (2013).

Crown Dependencies

Some aspects of EU law apply to the Crown Dependencies (the Isle of Man and the Bailiwicks of Guernsey and Jersey), as set out in Protocol 3 of the UK to the UK's Treaty of Accession to the European Communities.

Energy services are a service under EU law and so outside the scope of Protocol 3. EU electricity directives in the Third Energy Package therefore generally do not apply in the Crown Dependencies. However the bulk of the energy needs in the Crown Dependencies are met from supplies from the EU, so the Crown Dependencies have a strong interest in a properly functioning, competitive EU energy market, with security of supplies.

Each island has significant marine energy resources (both wind and tidal current) that could be exported into the EU to assist with climate change commitments. The proximity of the Flamanville nuclear power station to the Channel Islands and of the Sellafield reprocessing plant to the Isle of Man makes EU competence for nuclear safety standards under the Euratom Treaty of particular importance.

Chapter 2: Summary of Evidence on the Impact of EU Competence on Energy on the UK National Interest

Section 2.1 – Cross-Cutting Themes

Introduction

2.1.1 As we have seen from Chapter One, energy cannot be seen in isolation from efforts to curb climate change. Article 194 TFEU includes 'the need to preserve and improve the environment' as well as ensuring the functioning of the energy market and security of energy supply, promoting energy efficiency, energy saving and the development of new and renewable forms of energy and promoting the interconnection of energy networks. Energy also remains subject to other substantive treaty provisions that impact heavily on energy activities, for example those that provide the bases for competition and health and safety legislative acts. To some extent these overlapping areas also apply to nuclear activities, particularly in the area of environmental and safety legislation, even though nuclear is the subject of its own Euratom treaty.

2.1.2 Inevitably, trying to mesh such a complex mix of goals and issues into one coherent EU strategy and meeting all of the needs all of the time has been challenging and inherently difficult. On the one hand there has been the need to achieve a fully functioning internal energy market whilst maintaining international competitiveness, but, on the other hand, this has had to be crafted with environmental and climate change considerations in mind – reducing consumption and dependence on high carbon emitting fuels such as coal and oil and promoting renewables and other low carbon means of generation, as well as addressing security supply concerns.

2.1.3 This tension was recognised by a number of stakeholders, including in the Brussels workshop. National Grid, in its evidence summarised some of these tensions: 'recent developments show that there may be a tension between EU-led objectives, typically renewable targets set out in the Renewable Energy Directive, and certain EU policies like the EU Emission Trading Scheme or the EU's internal market rules (State aid)'.

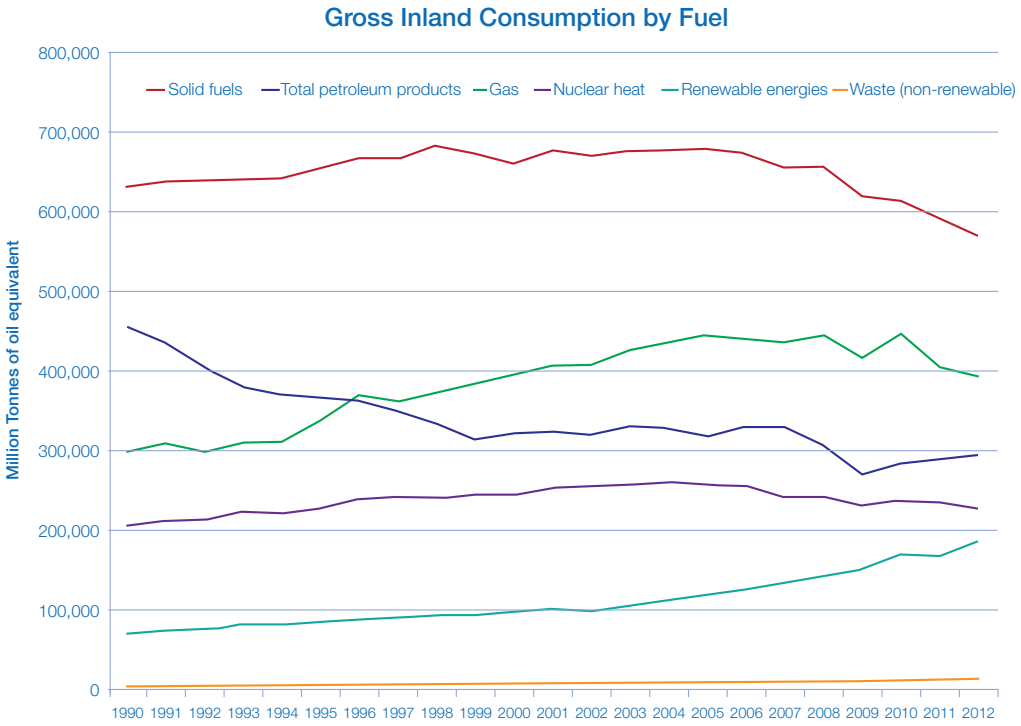
2.1.4 The importance of each of the energy goals and concerns has tended to fluctuate depending on external developments. For example, geopolitical events such as the gas supply crisis in 2009 (when no Russian gas flowed through Ukraine for onward transmission to the EU for a significant period during a harsh winter), and latterly Russian actions in Ukraine and Crimea, has meant that once again security of energy supply – and gas in particular – is a priority issue for the EU.

2.1.5 Many Member States with high import dependencies are still highly vulnerable to interruptions to supply, (particularly central and eastern Member States who have joined

the EU over the past 10 years and are still dependent on a single or primary import supplier source for their gas. This vulnerability is compounded since they otherwise tend to have high carbon emitting indigenous resources such as coal and oil shale and a switch to predominantly low carbon energy sources will inevitably take time.

2.1.6 The chart below shows overall EU consumption levels for energy for the 28 Member States since 1990. Of note, is the decline in oil consumption since 2005/2006 and the steady climb since 2002/2003 of renewables, possibly reflecting the impact of EU legislation.

Chart Three: EU 28 – Gross Fuel Consumption Since 1990



Source: Eurostat Database, April 2014.

2.1.7 Changing world patterns of supply and demand and prices over the years have also meant a number of major challenges for Member States. For example, the abundance of cheap United States (US) gas from shale gas exploitation (as yet unavailable for export) has allowed the products of some US firms, particularly those of their Energy Intensive Industries (EIIs), to be highly competitive globally. The relative tightness of the global liquefied natural gas (LNG) market with high priced gas going to Japan (to replace its nuclear generation in the wake of the Fukushima crisis) has also had implications for accessing gas at reasonable prices. The sudden German decision to phase out nuclear energy and its knock-on effects on supply and demand in neighbouring electricity markets, as well as the varying attitudes (some positive, some negative) to EU indigenous shale gas exploitation and nuclear generated power have also contributed to market uncertainties in the EU to some degree or other.

The Balance of Competence

2.1.8 This historical context has provided the backcloth to stakeholders' evidence and discussion in workshops. Although views and evidence from stakeholders have tended to be very wide ranging, reflecting their diverse sector interests, a number of cross-cutting issues have emerged and these are set out in the paragraphs immediately following. Evidence that is particularly relevant to the separate themes identified later in this chapter

of: internal market and competition; security of energy supply; sustainability; EU– external energy relations; and nuclear and Euratom, is discussed in those sections.

2.1.9 Evidence from a broad spectrum of stakeholders and sectors suggested that EU competence in respect of energy has, in general, been exercised appropriately and to the benefit of the UK, referencing in particular the need to provide market stability for investment, although this view was often caveated by evidence highlighting specific examples where EU activity had been, in their view, unhelpful and / or burdensome. Most of the discussions in the workshops tended to reinforce this overall assessment.

2.1.10 AB Sugar wrote: 'in general we feel that regulatory stability is necessary to provide adequate certainty for investors. Most energy related projects have long lead times, significant build phases, extended payback periods and significant operational lifetimes'. They went on to say: 'we believe that the current balance between Member State competence and EU competence is about right at the moment and the role of the EU should not be extended further so the status quo should be maintained'.

2.1.11 WWF's view was that 'despite some setbacks and some flaws in the design of some policies […] EU membership has, on balance, positively contributed to the development of three important factors: (i) the development of effective energy efficiency measures and standards; (ii) the accelerated deployment and cost reductions of renewable energy technologies in the EU; and (iii) the development of the world's first emissions trading scheme, which while flawed, has provided the EU with important lessons that can help it improve the effectiveness of the scheme in the future'. WWF also saw value to the UK of European collaboration in facilitating greater interconnection: 'to substantially reduce the amount of back-up capacity required to keep the lights on when its renewable energy plant are providing smaller outputs of electricity'. It cited, for instance, the European Climate Foundation's Roadmap 2050 report which illustrated the benefits of interconnection.

2.1.12 Chell Instruments suggested that there were a number of areas where closer working with the rest of the EU would be of benefit to the UK. This included sharing renewable technology and infrastructure given it saw the UK as 'geographically isolated'. In the context of meeting the challenge of climate change objectives, potentially rising global market prices and the transition to a low carbon economy it was of the view that: 'it will force a need for greater EU co-operation'.

2.1.13 Renewable Energy Systems (RES) observed that: 'a common EU-wide energy and climate change policy promotes competition and avoids distortions that might occur as a result of different national standards within the Member States of the EU. Setting the same overall targets at the EU level will align direction and help avoid fragmentation. It facilitates trade in green technologies and services within the internal market at the same time as achieving the European objective of cross-border environmental protection'.

2.1.14 National Grid regarded the balance of EU activity and its impact on the UK as positive. In its evidence it wrote: 'whilst there may be examples of where EU measures have been overly prescriptive, or conversely where UK implementation of EU measures has exceeded what is necessary, National Grid considers that legislation in the energy field has been mostly proportionate so far. There are elements of legislation that have had adverse impacts from a UK perspective but we believe it is important not to focus on such issues in isolation but rather look more holistically on EU energy policy as a whole'.

2.1.15 The Scottish Government said: 'overall the energy acquis works well for Scotland. The EU 2020 renewables targets are fully supported by the Scottish Government, and have been a key driver for renewables investment in Scotland – giving the regulatory certainty

to create investor confidence and unlock our massive offshore wind, wave and tidal resource for European benefit'. They also wrote in their evidence: 'more generally, the European market has underpinned the Scottish energy industry as it constitutes one of the largest markets for Scotland's export'.

2.1.16 The Welsh Government, in its written response, also saw merit in EU actions particularly in creating greater interconnection and funds to improve regional frameworks for renewable energy expansion. It welcomed the recognition by the Commission that EIIs in Europe faced substantially higher electricity costs than their competitors in non-European countries and that where those industries were most impacted by the indirect costs of the EU ETS, State aid support was possible.

2.1.17 CIBSE also saw merit as regards EU action to promote more efficient standards of products: 'for example, the EU Appliance Labelling Directive made energy efficiency performance transparent, and subsequently set minimum standards for a range of common white goods, thereby giving more confidence to consumers. Within a few years of the implementation, leading white goods manufacturers were exploring with the European Commission the notion of an A+ category for their most energy efficient products. This development demonstrates how effective the Directive was in accelerating market transformation'.

2.1.18 E.on commented: 'overall, in our view, EU action in the energy field has benefitted the UK energy sector. In order to see continued benefits, further integration and development of the Single European Energy Market is essential'.

Cross-Cutting Issues

2.1.19 However, despite the evidence suggesting that, in general, EU competence for energy has been exercised appropriately and to the benefit of the UK there were, nevertheless, many examples cited by stakeholders where the exercise of competence was considered to be disadvantageous, unnecessary or in need of reform. This evidence suggested a number of key cross-cutting areas which caused concerns for stakeholders, focused particularly on how that competence has been exercised and the processes that underpin legislation in this area.

First Mover Advantage?

2.1.20 A number of stakeholders raised the issue where a first mover role has not always been to the advantage of the UK, including in the devolved regions such as in Northern Ireland or Scotland, and/or where stakeholders were faced with what they regarded as 'unnecessary' changes to domestic laws when legislation had subsequently been agreed at the EU level or when it had had competitive implications.[1]

2.1.21 For example, the Institute for European Environment Policy (IEEP) summarised its concerns as follows: 'the UK's first mover role may have been disadvantageous in that the country's fully liberalised market has exposed UK energy companies to competitors in other Member States that were benefitting from protected markets and could use their power to enter the UK market'.

[1] Including: the Devolved Administrations; CIBSE, IEEP; Calor Gas; *submissions of evidence*; and *Record of 29 November 2013 London Workshop, and Brussels.*

2.1.22 CIBSE cited the example where the UK had taken action domestically on new build dwellings before action was agreed at EU level. They wrote: 'the UK intends that from 2016 all new dwellings will be zero carbon in regulated energy use. Meanwhile, the recast EU Energy Performance of Buildings Directive requires "nearly zero energy buildings" by 2021. The UK has decided, for domestic political reasons, to move ahead of the EU on this policy. However, some concerns have emerged that the UK definition of "zero carbon" and the EU definition of "nearly zero energy" may be in conflict'.

2.1.23 The British Ceramic Confederation (BCC) in its evidence said that: 'in the UK, specific energy-related regulation has undermined the competitive position of the ceramics industry with the rest of Europe and beyond (for example the introduction of the Carbon Price Floor to encourage renewable power generation)'.

Prescription Versus Flexibility

2.1.24 A range of evidence that was submitted focused on the advantages and disadvantages for Member States in having flexibility as to how they implement EU legislation and the balance between, on the one hand, being able to reflect national circumstances and, on the other, securing a level playing field in Europe through a 'one size fits-all' approach.

2.1.25 Stakeholders representing the oil and gas production and refining sectors, in particular, were less in favour of prescription and a 'one size fits all' approach. At the Cardiff workshop, stakeholders views on the benefits of EU legislation were more mixed. Whilst a number of stakeholders regarded EU measures as having had a positive effect and aided innovation, some stakeholders felt that EU regulation was 'heavy' and the cost of compliance with EU legislation significant, particularly for smaller companies and communities such as in Wales. Quite a few stakeholders regarded directives as a more suitable form of legislation to drive forward innovation at a local level than more prescriptive regulations. Stakeholders felt that such flexibility was important so as to reflect local and small community conditions – a view shared by the other devolved administrations (DETINI in Northern Ireland and the Scottish Government).

2.1.26 Stakeholders, including those representing communities in the devolved regions, felt that in some cases EU action failed to take account of the distinct circumstances of Member States with small and / or remote geographic locations. The need to accommodate regional and national differences would vary depending on maturity and nature of their markets, their import dependencies and fuel mix, their access to indigenous resources etc.

2.1.27 DETINI had misgivings as regards prescriptive EU legislation. They wrote in their evidence: 'the Commission's drive to ensure consistency is understood, however this can lead to a "one–size-fits-all" approach and in turn have disproportionate consequences, including costs, for our relatively small energy market in Northern Ireland. In effect, the cost of establishing new arrangements in such a small energy market has the potential to outweigh any benefits.

2.1.28 DETINI also suggested that in some circumstances 'interim option' arrangements could be agreed where small communities had to make large costly changes. They said: 'It is also not clear that the EU fully appreciates the difficulties for Member States, or regions within a Member State such as Northern Ireland, to deliver major infrastructure projects which are essential to meet EU requirements. Public concerns about the environmental impacts of energy infrastructure can lead to much longer than expected delivery times

for significant energy projects, and there is a need for the EU to ensure that other interim options are available'.

2.1.29 Where the legislation provided some flexibility in interpretation and implementation, some stakeholders, whilst favouring this flexibility, were nonetheless concerned that the way in which the UK implements EU laws had often been unnecessarily complex.[2] This had potentially put UK interests at a (competitive) disadvantage to other Member States.

2.1.30 The Scotch Whisky Association wrote: 'we believe that EU action on energy is vital and benefits the UK. Our concern is more with the complexity and the burden generated by additional UK legislation over and above it. The UK Climate Change Levy (and associated CCA scheme) and the UK's CRC Energy Efficiency Scheme (quite apart from the EU ETS) create overlapping and complex regulatory requirements. These energy policies have grown in silos and create considerable duplication. Some businesses are covered by multiple policies, taxes and regulations, leading to significant extra administrative and cost burdens'.

2.1.31 Some stakeholders viewed this differential interpretation and implementation of legislation as 'gold plating' or, in some instances, under-implementation by other Member States.[3] This highlighted inherent tensions whereby, on the one hand, many stakeholders preferred the flexibility of EU directives which give greater leeway to Member States on how to implement, but, on the other, concern was also expressed if other Member States used that self-same flexibility to implement the legislation in ways considered less onerous than those adopted in the UK.

2.1.32 Forth Energy cited the EU Renewable Energy Directive as: 'providing an example where EU and UK legislation and policies complement one another and facilitate the delivery of common objectives', but nevertheless felt that DECC's interpretation of the EU Energy Efficiency Directive and the consequent risk of reduced support under the Contract for Difference scheme (CfD): 'will significantly undermine the investment appetite for renewable CHP plants in the UK'.

2.1.33 Stakeholders from the energy intensive industries acknowledged some benefits of standard setting at EU level, but also felt that more could have been done to ensure they did not suffer disproportionately as an industry group as a result of environmental and energy legislation designed to limit the use of energy and the use of fossil fuels.

2.1.34 Centrica wrote: 'in general, EU competence should be framework setting, rather than determining the detail. For example, we believe it is right for the EU to agree a level of ambition on reducing carbon emissions, but right for Member States to develop specific policies to meet those targets'.

2.1.35 A number of stakeholders, whilst acknowledging the benefits of certain levels of prescription in the past, particularly as regards internal energy market legislation, also expressed a preference going forward for framework setting by the EU rather than additional prescription.[4]

2.1.36 This was a point strongly made by stakeholders in the Belfast workshop too and by DETINI in its written evidence. Whilst embracing much of the positive impact of EU actions, stakeholders said this would be a positive step to meet the needs of smaller

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2 Including: *Record of 14 November 2013 and 9 January 2014 London Workshops*.

3 Including: Scotch Whisky; and *Record of 18 November 2013 and 9 January 2014 London Workshops.*

4 Including: Oil and Gas UK; EDF Energy; CIBSE; Centrica; Shell; Energy UK; UKLPG; *submissions of evidence* and *Record of 18 November 2013 and 9 January 2014 London Workshops.*

regions in the EU, including the devolved, where often EU legislation has led to significant and disproportionate implementation costs.

Lack of Policy Coherence and Unintended Consequences

2.1.37 The negative effects of unintended consequences arising from EU legislation and the need for much greater coherence of policies across EU Directorates were recurrent themes both in stakeholders' written submissions and in workshop discussions. For example, some regarded the setting of multiple EU targets / requirements under the 2020 climate and energy framework as inherently flawed – it did not address, or attempt to prioritise, the most cost effective and carbon neutral solutions, thereby skewing the market.

2.1.38 The Scottish Government highlighted the lengthy processes that precede European legislation and insufficient coherence across energy, climate and environmental policy. They wrote that this creates uncertainly for industries and highlighted the: 'tension between EU market-based objectives such as the Emissions Trading Scheme and the development of the internal energy market and those EU policies which seek to make specific interventions in support of specific technologies such as the Renewables Directive or the Carbon Capture Storage (CCS) Directive. The EU needs to ensure clarity for its policy going forward to give markets the certainty that they need to invest in new capacity and in support of decarbonisation'.

2.1.39 National Grid in its evidence stressed the importance of assessing the risk of unintended consequences when designing legislation: 'Recent developments show that there may be a tension between EU-led objectives, typically renewable targets set out in the Renewable Energy Directive, and certain EU policies like the EU Emissions Trading Scheme or the EU's internal market rules (State aid)'. National Grid summarised its concerns: 'it is important that such possible conflicts and interactions between different EU policies are fully recognised'.

2.1.40 On the issue of dealing with possible unintended consequences of legislation and all the associated costs, Shell wrote: 'EU regulation needs to be mindful of the indirect implications of legislation on business'. They were concerned on the implementing methodology of the Fuel Quality Directive (FQD) – yet to be agreed – in case Member States were to implement crude GHG intensities differently. This would risk adverse consequences with crude oils going to less regulated markets and transportation routes sub optimized to avoid penalties.

2.1.41 Other stakeholders shared the view that some legislation had unforeseen consequences and thought it important that, when Member State support schemes were being scrutinised under internal market or State aid rules, they were used in a pragmatic manner to mitigate the distortive effects of such policies rather than to seek a de facto harmonisation of those policies.

2.1.42 The necessity to consider the interactions and consequences of one set of EU policies on another was echoed by the carbon capture and storage industry who felt that the heavy focus on renewable energy targets had had the unfortunate consequence of crowding out progress in their sector, especially given its potential to aid low carbon fuel use.

The Cumulative Impacts of Regulation

2.1.43 On the whole the EIIs were quite critical of the cumulative effect of legislation affecting their activities. This view was also shared by UKPIA, the oil refining trading association who had: 'concerns regarding the increasingly complex and multiple legislative instruments covering the energy sector, in particular, those concerned with climate change, air and water quality and other environmental aspects'. At a broader level they did not support greater EU involvement in regulation of the downstream oil sector.

Developing Legislation

2.1.44 Stakeholders highlighted a range of other cross-cutting issues associated with how legislation was developed across the range of EU energy policy.

New legislation Rather than Making Existing Legislation Work

2.1.45 Many stakeholders felt there was an increasing tendency for the EU to:

- Introduce new legislation as opposed to fixing problems by amending existing legislation or enforcing existing laws;
- Introduce new legislation before existing legislation is fully implemented;
- Be slow to react to the disconnect between existing legislative requirements and on-going market developments – though some stakeholders (the Food and Drink Federation for example) felt that a process of continuous policy review would be unhelpful or impractical; and
- Go automatically for the regulation option rather than more flexible directives.

2.1.46 In this vein, a number of stakeholders responded, both in workshop sessions and in written evidence, that the EU has a tendency to over harmonise and/or introduce new legislation – essentially as a 'quick fix' to solve a perceived problem rather than giving existing legislation a time to bed in and/or amend existing legislation. On this latter point stakeholders also regarded the process of amending existing EU legislation as too cumbersome and lengthy and in need of reform. In particular, when market conditions changed, some stakeholders felt there may be a need to accommodate new challenges or technologies. However a few stakeholders recognised that this could be difficult once EU legislation was already in place, given the time-consuming process to change legislation. Some stakeholders suggested that having more flexible legislation in the first place would allow Member States to adapt as appropriate.

2.1.47 Stakeholders noted difficulties when Commission Directorates other than DG Energy proposed legislation and conducted negotiations or were responsible for implementation of technical directives, even though the expertise lay more with DG Energy.[5] It was felt that time-scales for the consultation, negotiation, adoption and/or implementation of EU legislation could be improved and generally lengthened in order to help deliver higher quality legislation. An example cited was the Health and Safety Offshore Directive, negotiated the previous year. According to stakeholders in the Aberdeen workshop, much time had been spent during the negotiations on the original proposal, in the form of a regulation, to educate both MEPs and the Commission on practical operational aspects of work offshore (as opposed to onshore). A more flexible directive was subsequently agreed and thereby avoided the large cost implications of the original proposals.

[5] For example: DG CLIMA; DG Environment; DG Move; and DG Health and Consumers *submissions of evidence*.

Impact Assessments

2.1.48 Linked to the process for preparing legislation, strong views were expressed by many stakeholders and across a broad range of sectors, both in written evidence and in the workshops, on the poor quality of Commission impact assessments with few dissenting voices (though RES, for example, did not share this view). In the main, impact assessments were seen as mostly 'self-serving' by stakeholders to achieve a particular solution favoured by the EU and they failed to consider the most cost effective options, or environmental and / or social aspects of a policy – either at all or in sufficient detail. In addition stakeholders felt that impact assessments:

- Did not consider or skated over the need for 'coherence' of one policy or target over another, particularly those where Directorates (other than DG Energy), were involved and their policies impacted heavily on the energy sector. This applied particularly in the cross over with environmental, State aid and health and safety considerations. This was a recurrent comment by stakeholders;
- Should be carried out at intervals, particularly where there is a sunset provision in legislation, to help ensure legislation is / remains 'fit for purpose'; and
- Should be redone where the legislative process has led to significant changes in the original proposals – cost implications of last minute changes should be evaluated. Again cost was a recurrent issue.

2.1.49 RSPB suggested that: 'many of the IA [Impact Assessment] process weaknesses in practice are a result of Directorates General (DGs) carrying them out "in-house"', whilst AB Sugar wrote: 'we feel that the Commission does not provide adequate data and analysis in its impact assessments and we would like to see this situation improved. We could then more effectively engage in the democratic process'. The weakness of the consultation process was also mentioned as an issue in the nuclear and other workshops.

2.1.50 EDF were also concerned that the: 'economic assessment of costs and benefits in legislation impact assessments is not always comprehensive or robust'. They raised a concern about outsourcing to consultants given they were not always able to gain the necessary insight into sector circumstances.

Monitoring

2.1.51 Stakeholders considered there was a need for the EU (Commission) to monitor Member States' implementation of legislation more closely and take timely action if Member States were in breach of the legislation; otherwise those Member States that did comply could be put at a significant competitive disadvantage over those that did not comply. The British Ceramic Confederation (BCC), for instance, said: 'the EU should also take a more active role in checking that Directives and Regulations are actually applied in each of the Member States. Otherwise, countries such as the UK which has a comprehensive and legalistic approach to implementation can be left at a competitive disadvantage'.

2.1.52 CIBSE spoke about the necessity for the EU to monitor progress in meeting its policy goals: 'given the energy competence, it is for the EU to adopt public policy instruments and EU level goals etc; to monitor progress; and, where necessary, act to ensure the goals are met. It is then for Member States to implement packages of complementary enabling policy instruments and action plans to achieve, or if they wish, exceed, their respective shares of the EU level goals'.

Section 2.2 – Internal Market and Competition

This section includes responses on the impact of EU competences on the internal energy market and prices, State aid regulation of energy activities, REMIT

2.2.1 Chapter One gave a brief account of the history of the internal energy market legislation. When the first legislative measures were introduced, the aim was to increase efficiency by introducing competitive forces into energy markets (thereby reducing prices and leading to consumers receiving better service as suppliers seek to maintain their customers or gain new ones) and to achieve greater interconnection of markets. Increased interconnection would in turn reduce the need for reserve generation capacity, thus further reducing costs.

2.2.2 The last suite of measures, which came into force in 2009 with the publication of the Third Energy Package (TEP), introduced further refinements, particularly as regards separating out the operations of vertically integrated companies from transmission and generation and supply (unbundling) and putting in place a framework for a number of technical codes designed to reduce barriers to cross border trading, for example by introducing new rules for how interconnector capacity is sold. As security of supply concerns have risen up the agenda in the meantime and the EU and Member States have introduced measures to support the transition to a low carbon economy, the added benefits of a fully functioning and liberalised internal energy market have been brought to the fore.

The Third Energy Package (TEP) came into force in 2009. The Package encompasses the 'Electricity Directive (2009/72)' and 'Gas Directive (2009/73)' and three related Regulations. It sets rules and obligations for:

- Liberalising European energy markets;
- Unbundling transmission system operators;
- Facilitating cross-border energy exchanges;
- Putting in place technical codes; and
- Establishing an Agency for the Co-operation of Energy Regulators (ACER).

2.2.3 In 2011 the European Council agreed the following twin goals: (i) the internal market to be 'completed' by 2014 with Third Package measures implemented in full in all Member States as well as the most important technical codes agreed; and (ii) by 2015 there should no longer be any Member State with 'energy island' status (that is Member States who have no or minimal interconnection with the rest of the EU for their energy supplies). 'Energy islands' include the Baltic States Estonia, Latvia, Lithuania and Finland who depend on a single source of supply for gas (Russia) and have limited or no electricity interconnection with the rest of the EU. The Iberian peninsula with its minimal gas and electricity cross border interconnection with France is also regarded as an 'energy island' and so too is Ireland given its 95% dependence on mainland Great Britain for its gas supply.

2.2.4 However with the slow implementation of the TEP and isolated markets still existing much still needs to be done. For example, for the Baltic States, their particular geographical and geopolitical situation makes it difficult to put in place measures to be certain of achieving this timetable.

Third Energy Package (TEP)

2.2.5 In the main stakeholders across a range of sectors were positive about the way in which EU competences had been exercised to progress the development of the internal market. Particular benefits for UK interests identified by stakeholders were:

- A common framework in which businesses can operate;
- Increased competition, including breaking up monopolies and separation of operators from supply and generation activities (unbundling);
- Benefits to consumers including lower prices than what they would otherwise have been without the internal market legislation;
- A significant rationalisation and liberalisation of the way in which the market operates that has facilitated cross-border trading and led to more liquid markets;
- Common rules for interconnection and introduction of technical codes to provide a degree of harmonization within and across borders; and
- Enhanced security of supply – the UK has benefitted from increased energy security as a result of physical market integration.

2.2.6 National Grid commented in its evidence: 'as many of the challenges faced by the energy sector are in effect European or global, a degree of EU action in the field of energy is desirable. EU coordination is, in particular, instrumental to build the internal energy market – from a technical perspective (for example, network codes), regulatory aspects (for example, fully unbundled model for Transmission System Operators) and also physically through the building of interconnectors. These will bring significant benefits to UK consumers and businesses alike, in the form of increased security of energy supply, economic benefits of increased competition, and the sustainability benefits of further integration of low-carbon energy sources'.

2.2.7 This positive view was echoed by many stakeholders from a range of organisations including Centrica, Dong Energy, E.on, RWE, BOC, Shell, The Climate Parliament, RSPB, the Devolved Governments, Giles Chichester and Vicky Ford (writing on behalf of Conservative MEPs) and Fiona Hall MEP (Liberal Democrats' spokesperson on energy in the European Parliament), Energy UK, Renewable Energy Association (REA), Food and Drink Federation, and responses from attendees in workshops.

2.2.8 Prospect conducted their own survey on the impact of EU action in the energy field and were of the view that: 'effective and focused regulation does both protect individuals and encourage competition by providing clear market signals'. 91% of their respondents indicated that the overall impact on the UK by EU action in the energy field was beneficial, 73% indicated that EU action had been of benefit to the electricity generation sector, whilst 27% believed it had been disadvantageous.

2.2.9 Nevertheless stakeholders pointed out that there were some significant issues still to be addressed and that further effort, including at the EU-level, was needed:

- Energy 'islands' still existed where interconnection with the rest of the EU was severely restricted or non-existent, and this had security of supply implications for those Member States who were particularly vulnerable to interruptions of supply;
- Some Member States had yet to fully implement the TEP;

- There were markets, for example Hungary, France, Spain and Bulgaria, where regulated prices still existed and some of these could have distorting effects on the market; and
- To agree all the technical network codes (the way in which one network system in one Member State interacts with another) to improve market functioning and better rationalise and harmonise working practices across Member States.

2.2.10 Energy UK commented that it is: 'important that the Network Codes focus particularly on overcoming barriers to trade and do not impose unnecessary costs. This is particularly important for a mature competitive market such as the UK, where costly system changes could be required without major benefit in terms of promoting cross-border competition'. Energy UK went on to say: 'the Commission's aim to complete the internal market by 2014 is proving far too optimistic; a more realistic timetable which allows proper consideration of the complex national issues raised by the network codes is now essential'.

2.2.11 This issue of complexity was also picked up by a number of other stakeholders. RES, whilst acknowledging the potential for the EU Target Model and clear 2030 targets to encourage more interconnection and successful utilisation and operation of cross border capability, felt, nonetheless that: 'the realities of trading incompatibilities will result in different trading patterns. There is much complexity in this approach to market integration, which will make it challenging especially when other political uncertainties are also considered'.[6]

2.2.12 Stakeholders in the Northern Ireland workshop spoke of their concern that the Republic of Ireland / Northern Ireland Single Electricity Market (SEM) arrangements (put in place before the TEP) would have to be changed at great cost to adapt to the Target Model and despite being a peripheral market. They felt that due consideration should be given to exempting such small markets from having to change where they had no or little direct impact on other Member States' markets.

2.2.13 AB Sugar was also concerned that new EU trading rules could potentially disadvantage industrial CHP plants that are tied into national distribution networks. They felt that this could act as: 'a significant disincentive to build new, and operate existing, CHP [plants], particularly small CHP'. Energy UK shared this concern quoting the example of the draft Requirements for Generators Code, which will bring very small generation such as a small 800 W solar panels into the scope of the Regulation. They commented that: 'such units are in our view not of cross-border significance and it is disproportionate to include them in a European Code of this type'.

2.2.14 The BCC, whilst acknowledging: 'tangible improvements such as the foundations of an internal market and industry codes to facilitate cross-border energy flows', felt that the challenges faced by the ceramic industry was in part due to the interaction between the EU and UK policy making and regulation.

2.2.15 The Mineral Products Association felt strongly that the shared competence in the area of energy had put the UK cement and lime manufacturing sectors at a competitive disadvantage within and outside the EU because: 'UK consumers are subject to UK domestic legislation and indirect legislative costs not faced by other EU and non-EU competitors'. They gave, as examples, the direct costs associated with levies paid on the use of fossil fuel energy (Climate Change Levy) and schemes designed to encourage energy efficiency improvements (CRC Energy Efficiency Scheme). They said that mineral

[6] The EU target model is a model for the operation of the EU internal energy market designed to facilitate cross-border trade, much of which will be defined as part of a series of technical Network Codes.

products producers also faced large indirect costs of electricity market changes and renewable subsidies including Carbon Price Support, Renewables Obligation and Feed-in-Tariffs, while receiving no incentives themselves for use of renewable energy through schemes such as the Renewable Heat Incentive (RHI).

Slow Implementation of, and Non-Compliance with, the TEP

2.2.16 There was also frustration amongst stakeholders that progress on completing the internal energy market had been too slow, including significant delays in agreeing a number of technical gas and electricity codes – though it was acknowledged that this was due, in part, to their complexity.

2.2.17 More generally, however, stakeholders felt it was difficult to judge the degree of success of the internal energy market at the present time, given how long it has taken to introduce liberalisation. As Energy UK summarised in their evidence: 'the original Directives were proposed over twenty years ago and the impact of competition has only started to be felt in some national markets over the last few years. This is an indication that legislation on the Single Market has not been disproportionate – and arguably that a more prescriptive approach and stronger enforcement could have been beneficial'.

2.2.18 E.on commented: 'a key concern is when EU directives are implemented half-heartedly by some Member States, which then do not provide a clear signal to investors'.

Gas and Electricity Prices

2.2.19 Stakeholders highlighted what they regarded as the increasing disparity between energy prices not only between the EU and its global competitors, particularly the United States, but also between individual Member States and the impact this had on the competitiveness of UK business. A number of stakeholders commented on the beneficial impact of a variety of EU actions that affected energy prices, including internal market reforms and measures to promote renewable energy.[7] However, a few stakeholders, including individuals, held the view that they had been a contributing factor to higher prices, particularly retail prices.[8]

2.2.20 Stakeholders from the energy intensive industries in the UK felt they were being particularly disadvantaged by lower prices enjoyed by their peers in Germany, whilst other stakeholders mentioned the disparity that existed across the EU as a result of oil indexed gas prices. For example, central and eastern Member States tend to pay higher prices for their Russian gas, though other factors can also influence the price they pay.

2.2.21 The European Commission's (2014) Communication *Energy Prices and Costs in Europe*, charts rises in electricity prices and costs over recent years.[9] The report examines the drivers of price rises, concluding that these have in general been driven by increases in network costs, taxes and levies. The share of renewable energy levies as a proportion of the electricity price increased over the period examined (2008-2012). The report found that the cost of renewable energy levies added to retail prices constitutes 6% of the average EU household electricity price. More broadly the report notes that overall trend of rising energy prices disguises significant disparities across Member States and across industry sectors; for example, energy price rises in the UK have mainly been driven by wholesale cost increases, rather than taxes or levies.

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7 Including: RES; National Grid; RWE; RSPB; British Ceramics Confederation; IEEP; *submissions of evidence* and *Record of 20 November 2013, 3 December 2013 and 9 January 2014 London Workshops.*

8 *Record of 14 and 18 November 2013 London Workshops.*

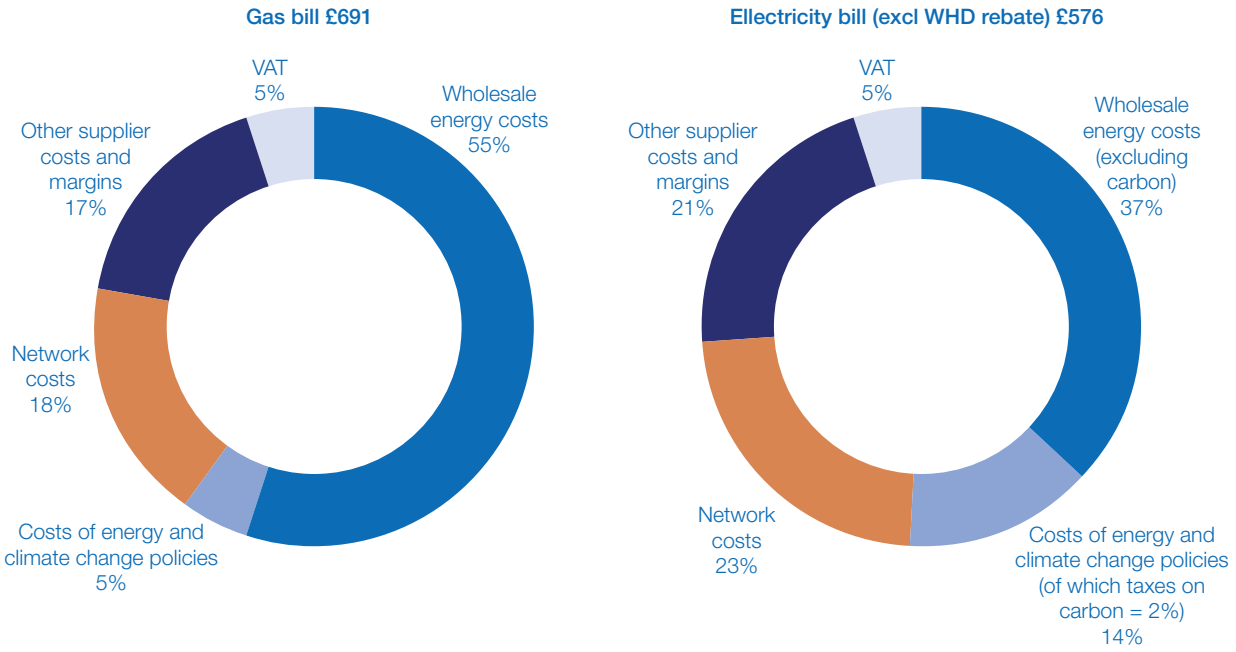
9 European Communication, *Energy Price and Costs in Europe* (2014).

2.2.22 The Communication identified that the energy price differential with many external competitors had increased, in particular citing the sharp fall in gas prices in the US. This echoed the International Energy Agency's *World Energy Outlook 2013* report, which concluded that the widening of the difference in regional gas prices: 'has mainly been driven by factors such as the shale gas boom in the US, the impact of oil-indexation on gas price dynamics in the EU, and sharply increased gas demand in Japan in the aftermath of Fukushima'.[10]

2.2.23 A number of actions to reduce energy costs and mitigate the impacts of rising energy prices were recommended in the Communication, which the UK Government broadly supports. These included: increasing effort to complete the internal energy market; ensuring that climate and energy policies are cost effective; addressing, with international partners, the issue of energy subsidies to local industries and export restrictions related to energy goods, both bilaterally as well as at WTO level; and, where necessary, using fiscal transfers, exemptions and reductions in taxes and levies to protect certain industrial consumers from higher energy costs, provided that these are compatible with State aid rules and internal market rules.

2.2.24 In DECC's report *Estimated Impacts of Energy and Climate Change Policies on Energy Prices and Bills*, published in 2013, the price effects of various UK policies are illustrated.[11] However, accurately trying to predict what impact EU energy and climate change policies have had on energy prices and consumption levels, and relative to measures taken by other Member States, is impossible to calculate. There are a number of factors which impact on what consumers pay for energy. These include wholesale energy costs as the largest single component of energy bills (as shown in the pie charts below) and which in turn are heavily determined by international fossil fuel prices.

Chart Four: Estimated Breakdown of UK Average Household Gas and Electricity Bills in 2013



Source: DECC, *Estimated Impacts of Energy and Climate Change Policies and Bills* (2012).

[10] International Energy Agency, Report on the World Energy Outlook (2013).

[11] DECC, Report on *Estimated Impacts of Energy and Climate Change Policies on Energy Prices and Bills*, (2013).

Prices – Wholesale

2.2.25 For the past few years GB wholesale gas prices have typically been lower than their near European neighbours. The International Gas Union's *Wholesale Gas Price Survey 2013* considers 2012 price comparisons and places Great Britain prices below a number of key neighbours including the Netherlands, Germany, France and Italy.[12]

2.2.26 However 'hub' pricing – that is gas traded on a hub, not long term contracts – is growing in Europe. North West European hub prices will generally track one another due to physical interconnection. The table below from internal DECC data shows day-ahead prices in comparison to some of its main European rival hubs. This shows a general trend from lower prices on the National Balancing Point (NPB) – the UK trading hub – until a cross-over in 2012 where the NBP averaged higher levels through 2014 (so far) and 2013.

Chart Five: Price Comparisons Across European Hubs

Year Average	NBP (UK)	ZEE (Belgium)	TTF (Netherlands)	NCG(Germany)
2008	56.98	57.25	58.28	N/A
2009	30.78	30.97	31.46	28.13*
2010	42.44	42.94	43.47	44.03
2011	56.30	57.14	57.46	58.38
2012	59.70	59.34	59.33	59.91
2013	67.96	67.31	67.21	67.60
2014	61.80	60.36	60.35	61.06

*From 01/09/2009

Source: Data supplied to DECC under contract.

State Aid

2.2.27 The rules on State aid are of considerable importance to the energy sector given the traditionally high level of involvement of EU governments in energy production and supply. This is particularly the case in the UK with respect to: ensuring long-term investments in the interest of security of supply; securing the realisation of large-scale investment projects as a result of both UK and EU energy policies; promoting environmentally friendly energy technologies; promoting the production and use of renewable energy; stimulating the transition away from carbon-intensive fuels; and helping to ensure that the energy intensive industries remain competitive.

In order for there to be State aid, a measure is required to fall within the scope of Article 107(1) TFEU:

- Aid is granted by a public authority or through its resources;
- The aid favours certain undertakings or the production of certain goods;
- The aid distorts or threatens to distort competition; and
- The goods or services in question are traded within the EU and therefore, the aid affects trade between Member States.

[12] International Gas Union, *Wholesale Gas Price Survey (*2013).

2.2.28 Against the back drop of the 2020 Climate and Energy Package, Member States have had to consider and, where appropriate, create the necessary financial incentives for undertakings to take measures to contribute towards meeting national targets set at the EU-level. The Commission has focused aid for environmental protection under two key legislative instruments:

- The General Block Exemption Regulation 2008 (GBER);
- The Environmental Protection and Energy Aid Guidelines 2014 (EEAG) – for the first time, these new guidelines include both energy as well as environmental aid.

Overview of EEAG

The EEAGs have been expanded to cover energy issues with new sections added on:

- Generation adequacy (Capacity Mechanisms);
- Carbon Capture and Storage;
- Energy Infrastructure; and
- Evaluation.

New requirements/significant changes to previous guidelines:

- Individual aid notification requirements;
- Aid to energy from renewable sources; and
- Publication of information on State aid awards by Member States.

Nuclear is not included.

2.2.29 Both RES and the REA regarded it as appropriate for State aid guidelines to operate at EU level provided they were applied equitably across Member States. The Welsh Government too saw positive benefit in the way the Commission had recognised that Energy Intensive industries (EIIs) in Europe faced substantially higher electricity costs than their competitors in non – European countries. They wrote: 'a particular concern is that EIIs in Europe face substantially higher electricity costs than their competitors in non-EU countries. It is important that they continue to be able to compete internationally and, in the absence of global agreements on climate change mitigation, EU energy and climate change policies do not adversely impact their ability to do this. We therefore welcomed the Commission's permission for Member States to grant State aid to certain energy intensive sectors most affected by the indirect costs of the EU Emissions Trading Scheme'.

2.2.30 However, the Sustainable Energy Association cautioned that State aid considerations could lead to substantial delays in implementing measures related to the use of biomass.

2.2.31 More detail on State aid is considered in the Balance of Competence report on competition and consumer policy.[13]

[13] HMG, *The Balance of Competences Between the UK and the EU: Competition and Consumer Policy,* published in parallel.

Regulation on Wholesale Energy Market Integrity and Transparency (REMIT)

2.2.32 The Regulation on Wholesale Energy Market Integrity and Transparency (REMIT) establishes rules prohibiting abusive practices affecting wholesale energy markets. REMIT creates an enforcement regime which is consistent with the regime for financial market abuse whilst taking into account the specificities of wholesale energy markets. Subject to an exemption concerning financial instruments, the Regulation applies to all trading in wholesale energy products. The Regulation also provided for the monitoring of wholesale energy markets by ACER, in close collaboration with national regulatory authorities.

2.2.33 The UK Government's REMIT enforcement regulations provide Ofgem, the energy regulator, with the tools to enforce against breaches of the REMIT prohibitions and include the ability to request any relevant information, carry out onsite inspections and impose unlimited fines for breaches of the REMIT prohibitions.

2.2.34 In Ofgem's evidence it describes the benefits of REMIT as reducing the potential for information asymmetries and market abuse, allowing for market prices to more accurately reflect supply and demand, and ensuring that consumers have confidence that the prices they pay for energy accurately reflect the costs. Ofgem wrote: 'from an Ofgem perspective, REMIT will require market participants from all over Europe and beyond to provide transaction data relating to GB, something that national legislation would be unable to deliver'.

2.2.35 In general, the stakeholders who commented on this aspect of EU competence were positive about the principle of the regulation but critical of the way it has been brought in by the Commission. For example, EDF energy, RWE, Energy UK, noted various problems with the interpretation of the Regulation, its implementation and reporting requirements, including a lack of clarity in the drafting. They felt these problems added to the effect of regulatory uncertainty and therefore could have been avoided. Workshop participants also commented that REMIT was something that was driven through quickly and without allowing time for better solutions to be developed and considered.

2.2.36 EDF wrote: 'adequate time needs to be allowed for the implementation of EU legislation and the sequencing of requirements needs to be carefully determined during the legislative process. For instance, in the case of REMIT, the prohibition on insider trading was introduced before there was any clarity about reporting requirements or any agreed routes for publishing the data. This resulted in significant regulatory uncertainty which could have been avoided'.

Section 2.3 – Security of Energy Supply

This section includes responses on the impact of EU competences on security of supply, infrastructure development, exploitation of indigenous oil and gas including shale gas resources, and oil stocking

Security of Supply Concerns

2.3.1 As noted earlier in this report, security of energy supply has long been a key priority of the EU, and some of the first legislation applied to the energy sector was as a result of the need to enhance security of supply in the light of the 1973/1974 oil crisis. Rising energy demand globally and increases in energy prices have helped re-focus attention on energy security; so too did the January 2009 gas crisis when Russian gas supplies via Ukraine ceased completely for a period of two weeks as a result of a contract dispute between the two countries. At that time many Member States were forced to declare a state of emergency and/or take emergency measures, including a number of the wider community of Balkan States. Whilst gas (and oil) disruptions of Russian supplies to the European Union were not new phenomena, the sheer scale of the 2009 gas disruption was the most severe one experienced to date.

2.3.2 In the light of the severity of the gas disruption, the March 2009 European Council pressed for urgent EU action to improve the security of energy supplies in the EU. The Gas Security of Supply Regulation (replacing an earlier light touch directive) was adopted in 2010. This set vigorous new supply and infrastructure standards, obligatory risk assessments and the requirement that emergency and preventive plans have to be reviewed regularly, shared with the Commission and other Member States and published.

- Primary gas consumption in the EU in 2012 was 477 bcm.
- In 2013, according to IEA data, physical gas flows from Russia to Europe through Ukraine totalled around 82 bcm.
- Though flows through Ukraine are less than they were in 2009 (some now re-routed through the Russian Nordstream pipeline to Germany), this still represents well over half of gas imports from Russia to Europe and is therefore the largest transport corridor of Russian gas to Europe.

2.3.3 The 2009 gas crisis came at the same time as the effects of the economic crisis was having a negative impact on investment. In December 2008 the European Council endorsed the Commission's European Economic Recovery Plan for an immediate injection of €200bn to aid the recovery process. Energy infrastructure and production facilities were included amongst the priority areas for support given many energy projects had been heavily delayed or cancelled as a result of the economic downturn. Regulation (EC) 663/2009 subsequently established the European Energy Programme for Recovery (EEPR) with a financial envelope of € 3.98bn. €2.37bn was allocated for gas and electricity projects, €.57bn for offshore wind and €1.05bn for carbon capture and storage technologies.

2.3.4 In terms of financial provisions, it was the first time that such a large sum had been made available under the EU budget, specifically with energy projects in mind. The identification of the type of energy products needing support reflected priorities in the Second Strategic Energy Review and in the Strategic Energy Technology Plan, completion of the EU-wide energy networks, increased energy security as well as development of strategic low carbon technologies.

2.3.5 However barriers to cross-border energy infrastructure development have remained an issue – particularly as regards securing timely planning permission for cross-border projects and agreeing cost allocation for investments that span Member States' borders. To this end, in 2011, the Commission put forward proposals for a new TEN-E. Two key features of that regulation (adopted in April 2013) were aimed at: (i) streamlining planning consent procedures in respect of projects that are designated as PCIs; and (ii) putting in place a mechanism to develop cross-border cost allocation methodologies (overseen by EU regulators).

2.3.6 To achieve PCI status, projects have to meet stringent criteria laid down in TEN-E. All PCI projects have to have cross – border impact for two or more Member States and can include gas and electricity interconnections, storages, LNG terminals, some limited oil pipeline connections in central eastern Europe, smart grids and carbon capture and storage transmission projects.

2.3.7 The first PCI list of 248 projects, which included a number of UK clustered electricity interconnection projects, a smart grid project and gas projects involving Northern Ireland, was published in October 2013 and maps at Annex 1 show the spread across the EU of this first list for gas and electricity projects. This list will be updated / revised every two years. Since finance remains an issue, the new Connecting Europe Facility (CEF) regulation will also provide access to financial instruments (for example loan finance) for PCIs and possible grant funding support if PCIs meet the TEN-E criteria. The CEF fund for energy projects is Euros 5.8bn over seven years in current prices.

2.3.8 To put the complexity and scale of gas flows across the EU into context, both from within the EU and from third country imports outside of the Union, the map at Annex 2 published by DECC in Energy Trends (2014) illustrates the pattern of physical gas flows in 2012.

Views of Stakeholders

2.3.9 Significant numbers of respondents saw many benefits emanating from EU activity in the fields of security of supply, import dependency and infrastructure development.[14] In particular the gas security of supply legislation and the recent TEN-E infrastructure regulation that support cross-border gas and electricity interconnection projects were cited as examples where EU legislation had worked well.

2.3.10 Northern Ireland (DETINI) found EU regulations covering security of supply for both gas and oil stocking as: 'broadly useful for improving the GB and NI resilience to international and national supply chain shocks'. They regarded obligations in respect of gas and having Regional Preventative Action Plans and Emergency Plans as helpful given it placed a timeline for work priority across all organisations. They also regarded the approach to strategic fuel oil stocking across Member States (ensuring that reserves held in other states will be released in the event of an international emergency), as improving the resilience of both GB and Northern Ireland.

2.3.11 Friends of the Supergrid were very positive on the EU's efforts in creating a single energy market in Europe through physical electricity interconnectors under the new TEN-E regulation – and regarded this as proportionate action at EU level. They felt such policy goals are best served by legislation and coordination at the EU level, as opposed to a more piece-meal approach laid out by individual Member States. They referred to the

[14] Including: RWE; RSPB; WWF; Scottish Government; DETINI; Fiona Hall MEP (Liberal Democrats' spokesperson on energy in the European Parliament); Giles Chichester MEP and Vicky Ford MEP, on behalf of Conservative MEPs; Greenpeace; Friends of the SuperGrid; IEEP; and NFU; and a number of other businesses.

CEF and also the Horizon 2020 research and innovation funding programmes that have also been created and that may provide financial support, including for interconnection projects not yet commercially-viable. Nevertheless, they found the creation of the single, interconnected European energy market as 'disappointingly slow'.

Friends of the Supergrid said:

There are still too many 'electrical islands' – regions with isolated grid systems that are separated from Continental Europe. This holds true for island states, like the UK, but also occurs in regions that share land borders. For example, interconnected capacity between the Iberian Peninsula and France barely exceeds 1 GW. In the case of the UK, to date, there are only 4 interconnectors with 4GW transmission capacity. The European Network of Transmission Operators for Electricity (ENTSO-E) estimates that 45,300 km of new transmission lines is required for Europe to meet its renewable energy targets alone, much of which must be cross-border, and another 18,200 km and 21,900 km for internal market integration and security of supply respectively.

2.3.12 The RSPB agreed that the TEN-E Regulation was a significant step forward: 'European legislation under TEN-E will help overcome bottlenecks in energy infrastructure investment in the UK and Europe, with benefits for UK energy security, climate change mitigation efforts, electricity trading and promoting competition for the benefit of consumers'. It went on to say: 'the UK will be building increasing quantities of wind, solar and marine energy in coming years to reduce dependence on fossil fuel imports and meet its climate change commitments. In this context, the UK's ability to trade electricity within the EU becomes critical to controlling costs and protecting security, as interconnection is among the cheapest options for managing variability. The UK grid will need to export power at times of surplus, and will benefit from access to imported power when needed. This can only work in the context of a well-functioning European market and an integrated European grid system'.

2.3.13 Fiona Hall MEP (Liberal Democrats' spokesperson on energy in the European Parliament) shared this view on the benefits of greater interconnection with mainland Europe: 'being well interconnected is also important for ensuring uninterruptable energy supply. Co-ordination at EU-level can avoid the building of unnecessary power stations as it can be cheaper to interconnect cross-border and use extra capacity elsewhere instead. It has been estimated that fully integrating the EU energy market will deliver benefits in the range of €12.5bn to €40bn per year by 2030. Similarly, the UK will be able to benefit from the recently agreed Connecting Europe Facility, aimed at supporting infrastructure projects in the areas of transport, energy and telecommunications. The energy budget of €5.12bn (for 2014–2020) will be used to finance cross-border projects of strategic importance for the EU as well as to modernise EU grids and enhance security of supply. Given the huge need for investment that the UK energy system is facing in the coming decade, this funding stream should be a welcome addition to national efforts'.

2.3.14 At a broader level, E.on was of the view that: 'delivering an optimum energy policy requires a pan European approach rather than on a country by country basis. This is even more relevant for the UK which is increasingly dependent on markets both within and outside the EU for key fuels such as gas'.

2.3.15 On the whole, those stakeholders who saw overall benefits from EU actions were those engaged in electricity and gas supply activities and / or renewable energy activities, whilst those engaged in upstream activities such as oil and gas exploration and production and refining of fossil fuels felt there was less of a case for EU intervention.

2.3.16 Those stakeholders representing the upstream sector (oil and gas production companies) felt that some EU action had tended to encroach into areas that were Member State competences and where they regarded EU action as unnecessary and inappropriate. This was the case particularly as regards legislation affecting North Sea activities production. Stakeholders felt that world class systems were already in place for exploiting oil and gas reserves and they were already subject to a raft of safety legislation. They also made the point that, in their view, where other EU Directorates legislate on energy matters other than DG Energy, this can be a problem because they lack the relevant energy expertise to make meaningful proposals. This has resource implications for the industry in seeking to make Commission proposals workable.

2.3.17 A few stakeholders from the upstream sector also cited other areas of EU action which they regarded as unhelpful and unnecessary. For example, they expressed concerns about the knock-on effect to the industry of changes to the onshore 'gas day' being made under the technical Network Codes (under the umbrella of internal energy market legislation).

2.3.18 As regards security of supply, UKPIA believed that action should be taken at national level: 'to ensure adequate levels of supply security and resilience'. They felt that the UK downstream oil industry had seen: 'significant increases in capital expenditure and operating costs as result of UK, EU, and in some cases, global legislation over recent years'. Furthermore, they regarded the UK refining sector as disadvantaged against refinery operations in other Member States and in non-EU countries. UKPIA suggested that the refining sector: 'has significant exposure to risk of carbon leakage – unilateral UK policies imposing costs over and above those found for refineries located in other EU Member States or outside the EU, inevitably result in a loss of competitiveness'.

EU Energy – Need to Rebalance?

2.3.19 There were a number of stakeholders, including the British Irish Chamber of Commerce and in workshop discussions, who felt the EU had focused too much on sustainability. For instance, the British Irish Chamber of Commerce evidence suggested that the: 'EU's focus on sustainability should be rebalanced and greater focus given to the areas of security of supply and affordability [...] the EU's lack of focus on affordability has been detrimental to the energy sector in the UK'. This need to rebalance was shared by Giles Chichester MEP and Vicky Ford MEP, writing on behalf of Conservative MEPs, who wrote: 'when considering that the three pillars of energy policy are security, competitiveness and sustainability we believe that policy has focussed too much on sustainability, to the detriment of the two other pillars. We believe that energy policy must be rebalanced between the three'.

2.3.20 'Rebalancing' was also a theme in an article by the Deputy Head of the Commissioner for Energy entitled: *Energy Perspectives – Where are we Heading?* The Commission had argued that there was a: 'need to rebalance things between each of the three concepts [climate change goals, ensuring competitiveness and the affordability of energy]' and warned that: 'policy makers would lose people's support for fighting climate change unless they address the three key ambitions in a coherent manner – tackling climate change, while at the same time giving households and businesses access to secure and affordable energy supplies'.

2.3.21 RWE, whilst noting that security of supply had been improved through access to a wider market, nevertheless also viewed some areas of EU action (and national implementation of these by Member States) as potentially undermining security of supply. It suggested that some Member States' support systems for renewables were no longer appropriate

and gave distorting price signals for investment in other infrastructure: 'for example, the use of feed in tariffs and priority dispatch to support renewable energy, in many EU markets far beyond technical infancy, have distorted prices signals, for example leading to negative prices, and discouraged rational investment decisions. Greater coherence between policy mechanisms should be an objective for moving forwards together with decisions being made on deployment of technologies and transmission investment that ensure the most cost effective use of resources'.

2.3.22 E.on, in its evidence, suggested that: 'the EU has not focused much attention on security of supply until very late in the day, which in part explains why Member States have responded with their own set of proposals to tackle this issue'.

2.3.23 Energy UK, whilst they were of the view that the primary responsibility for security of supply should remain with Member States on account of the fact that the availability and public acceptability of different energy sources and technologies varies across Europe and therefore makes a wholly unified policy unfeasible, nevertheless felt that the EU should: 'act as a proactive forum for discussion on energy issues and should where appropriate help coordinate energy security policies'.

2.3.24 Dong Energy regarded security of energy supply as: 'a fundamental necessity for the UK' since it is increasingly dependent upon the EU for its security of supply through the development of interconnectors. In their view it also had a bearing on consistent pricing and pointed to the need to ensure that: 'guidelines [for State aid] are sufficiently clear to avoid an opportunity to arbitrage between Member States, yet to take account of the individual Member State'.

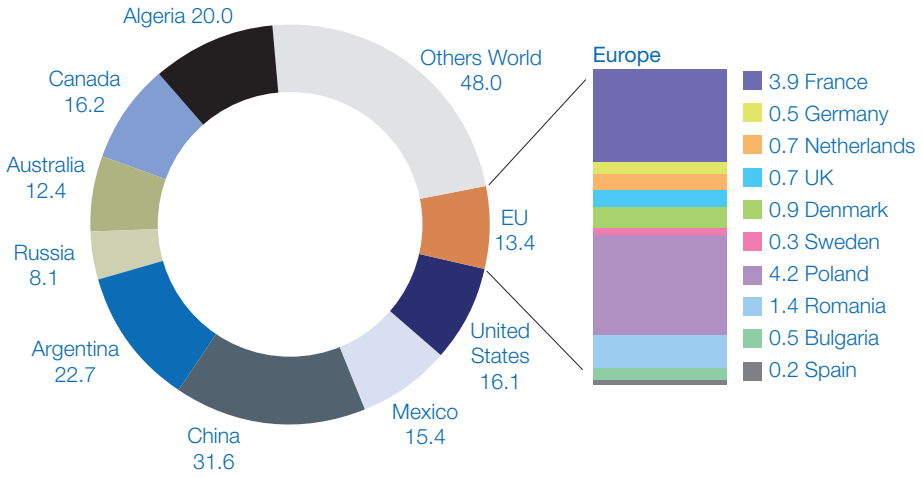
2.3.25 The BCC agreed that: 'secure energy supplies are a necessity for all industrial activity, especially energy intensive ceramic manufacturing. There is a potentially beneficial role for the EU in facilitating cross-border trade and promoting essential interconnection and storage infrastructure. However this should rarely be achieved from centralised, top-down interventions as Government, whether at EU or national level, is not placed to "pick winners" on security of supply grounds. As a general rule, in order to improve security of supply, the primary focus must be on the market- and competition-based processes. However, EU interventions should be deployed as a measure of last resort to correct any market-based deficiencies (such as the lack of UK gas storage facilities)'.

2.3.26 Northern Ireland (DETINI) reflected on how EU interventions can sometimes be unhelpful: 'there is an issue on the timing of the introduction of a range of directive requirements and regulations which appear to enforce a series of incremental changes which can overlap, create duplication in approaches, or even inconsistencies on intended outcomes. For example, the Industrial Emissions Directive (IED) requirements have potential to conflict with security of supply objectives, and are impacted by work on other areas such as capacity mechanisms. Consideration of the interdependencies across policy areas, and perhaps fewer Regulations with a longer timeframe for implementation might result in a more streamlined process'.

Unconventional Gas Exploitation

2.3.27 Exploitation of indigenous energy sources can be an important contributor to energy security. A potentially significant new source of energy is reserves of shale gas. The following chart sourced from the United States Energy Information Administration (EIA) in its update in June 2013, shows the revised potential of unproved shale gas reserves in the world of which US is 16.1 tcm (trillion cubic metres) and EU 13.3 tcm. EIA also point out the huge range being cited for estimates of recoverable shale gas, particularly for the EU. According to some sources it is between 2.3 tcm and 17 tcm.

Chart Six: Potential of Unproved Shale Gas Reserves (tcm)



Unproved shale gas Technically Recoverable Reserves		
Term	2011	2013
Total EU	**18.1**	**13.3**
Of which		
France	3.1	3.9
Germany	0.2	0.5
Netherlands	0.5	0.7
Norway	2.4	0
UK	0.6	0.7
Denmark	0.7	0.9
Sweden	1.2	0.3
Poland	5.3	4.2
Bulgaria	/	0.5
Spain	/	0.2
Romania	/	1.4
Total US	**24.4**	**16.1**
Of which		
Marcellus	11.0	/
Total World	**187.5**	**203.9**

Source: United States Energy Information Administration.

2.3.28 The EIA estimate for the EU should be seen against the background of total proved natural gas reserves in 2011 of about 4 tcm. Shale gas resources are also far more dispersed in comparison to those in the US. While between one third and half of the potential US reserves are located in one huge basin (Marcellus) and other US resource basins appear quite large as well (Haynesville, 10% of total, around 2 tcm), the EU estimated reserves are scattered across several countries, with France and Poland having the largest reserves. The dispersion over many smaller fields suggests lower economies of scale for their exploitation compared to the US and are generally in more dense areas of population than in the US, so conditions for exploitation are far more complex.

Stakeholder Views

2.3.29 Responses by stakeholders noted that sometimes Member States themselves distort the Single Market to prevent investment they regard as undesirable, rather than this being as a result of action by European institutions. This applied, for example, to the exploitation of shale gas. Energy UK wrote in its submission: 'Europe needs to maintain a diversified mix of fuels and technologies to ensure security of supply and minimise costs. However, the current picture is not encouraging with several Member States effectively banning the development of nuclear energy, CCS, and shale gas, all of which have a potential role to play in ensuring reliable low-carbon energy provision'.

2.3.30 Stakeholders in a number of workshops held the view that those Member States who had shale gas resources should not have unnecessary legislation imposed on them simply because some Member States were politically opposed to such exploitation or had no reserves of their own.

2.3.31 UKPIA, in its written evidence, wrote: 'the UK refining sector supports early exploitation of shale oil and shale gas, as this is likely to result in more competitive electricity and gas pricing against, for example, US refineries, which now enjoy a structural advantage on feedstock and energy costs over EU and UK refineries'.

2.3.32 The Confederation of Papers Industries (CPI) shared this view and suggested that those Member States who had no shale gas or did not wish to exploit their own shale gas reserves: 'should not be allowed to regulate and interfere with such developments in the UK'. This was also a point made in workshop discussion.

2.3.33 Opinions from non-extractive industries and associations were divided as to whether more regulation of the upstream sector was needed at EU level, particularly in respect of shale gas exploitation. The range of opinions is illustrated in the following paragraphs.

2.3.34 Energy UK did not see the need for EU-wide legislation for shale gas at this juncture though they did see a role for national and EU policy-makers promoting a diversified fuel mix and together helping to ensure that potential new energy resources including shale gas are exploited where environmentally acceptable and cost-effective. They were of the view that: 'national competent authorities should be responsible for assessing and monitoring the environmental impacts of shale gas extraction'. Calor gas also suggested that 'fracking' should remain a national competence.

2.3.35 Centrica too saw no need for the EU to introduce new regulations to cover shale gas drilling in the UK as the regulatory regime in place was, in their view, 'extremely robust'.

2.3.36 Shell felt, at least for current level of shale gas activities at exploration and appraisal (pilot) phases, it was appropriately covered. They did not rule out the need for further examination of the existing frameworks at full scale development phase, but expected the need for amendments to be limited and effective implementation of the existing frameworks an important factor in reducing risk.

2.3.37 However, there were a few stakeholders who took a different view. The RSPB, for example, was concerned that the current regulatory framework was not stringent enough to mitigate the potential ecological impacts from unconventional gas extraction, in particular the use of hydraulic fracturing for shale gas. Nevertheless they were of the opinion that the EU should only establish the baseline approach to environmental regulation and common rules should not be a barrier to individual Member States adopting higher standards if their particular national circumstances required it.

2.3.38 Going forward, WWF urged policymakers at EU and national-level to consider potential gaps in current policies, which were formulated prior to the introduction of unconventional fossil fuel extraction technologies: '[…] to ensure that the regulatory framework at EU and national level is adequate to monitor the different environmental impacts of shale gas extraction'.

2.3.39 The BCC noted: 'BCC consider the environmentally responsible development of unconventional gas resources (for example, shale gas and coalbed methane) both on and offshore is vital for secure and competitive energy supplies'.

Section 2.4 – Sustainability

This section includes responses on the impact of EU competences on energy efficiency, renewable energy, carbon capture and storage.

2.4.1 There are close links between energy and climate policy at the EU level; action taken under the EU's competence in the fields of environment and climate change and obligations to reduce greenhouse gas emissions have had significant impacts on energy policy in the EU and UK.

The '20-20-20' Targets

2.4.2 In 2007, Member States agreed the EU '20-20-20' targets: 20% of EU primary energy use to come from renewable sources with individual binding targets for Member States; a 20% non-binding energy efficiency target set at the EU level; and a 20% reduction in greenhouse gas emissions levels over 1990 levels to be delivered through the EU ETS and non EU ETS burden sharing arrangements.

Looking Beyond 2020

2.4.3 As noted in Chapter One, in March 2013 the Commission published a green paper for consultation on a '2030 climate and energy package'. The aim was to look at pathways beyond the 2020 time horizon which would provide an appropriate framework for longer term investment stability and, at the same time, meet EU energy and climate change objectives. This was followed on 22 January 2014 by a Commission White Paper.

2.4.4 The proposals in the White Paper included a greenhouse gas reduction target binding on Member States and achieved through the EU ETS and burden-sharing, and an EU-level renewables target, but leaving it to Member States to decide how best to achieve it. The White Paper also emphasized the importance of energy efficiency as a key mechanism in supporting cost-effective Greenhouse Gas Emissions (GHG) reductions and enhancing the EU's energy security. However it concluded that consideration of its role in a 2030 package should await the conclusion of the Commission's assessment of the implementation of the Energy Efficiency Directive and progress towards the EU's 2020 energy-saving target.

2.4.5 Responding to the Green Paper, the UK Government set out its view on the merits of an ambitious emissions target that left Member States to decide how that should best be achieved. Whilst the response made clear that the UK was fully supportive of renewable energy and the role it plays as part of a diverse energy mix, a 2030 renewable energy target would constrain the full breadth of technology options from being pursued. Moreover, it argued, a renewables target would not allow Member States to choose the most cost effective way to meet their emission reduction commitments and the EU should not prejudge the balance between energy efficiency and other low-carbon measures. Such a target could interact in a complex and unhelpful manner with other measures, notably the EU ETS, increasing energy costs unnecessarily at a time when household and business budgets were squeezed.

2.4.6 The UK Government has further argued that technology specific targets are extremely hard to set correctly at an EU level, given the diverse nature of the EU. For example, the appropriate timing for deploying renewables will depend on the type of renewable technology a Member State is likely to employ and how other Member States' cost effective decarbonisation pathways might shape this. Stakeholders' views on the future framework are considered in Chapter Three.

The Effectiveness of EU Action and the Role of Existing Targets

2.4.7 There were a variety of views amongst stakeholders as to the effectiveness and appropriateness of EU action on promoting sustainability and setting targets.

2.4.8 Written evidence from a number of businesses and stakeholder groupings who generally regarded EU action on sustainability as helpful included that from RES, SEA, RWE, WWF, the Scottish Government, Climate Parliament, NFU, RSPB and renewable trade associations. A number of those respondents referred to what they regarded as wider economic benefits of action such as job creation, economic growth and enhanced competition and the incentive EU policy had given to renewable heat.

2.4.9 Some stakeholders argued that implementing EU legislation on renewable energy and energy efficiency had helped drive both greater deployment of renewable energy and more improvements in energy efficiency in the UK than would have been the case without EU legislation. For example, the Institute for Environmental Policy wrote: 'Binding EU targets for renewable energy sources have stimulated very significant new investment and jobs in the UK renewables sector and a far greater growth in renewables than otherwise would have occurred […] EU policies on energy efficiency supported and helped to motivate the UK in making progress in this area, contributing to lower energy consumption, hence lower greenhouse gas emissions and improved energy security'.

2.4.10 The REA, the largest renewable association in the UK, regarded action at the EU level to date to have been: 'pivotal in shaping UK renewables policy and has helped to drive a significant increase in renewable energy use. In 2005 renewable energy accounted for only 1.3% of UK energy consumption. By 2012 that figure had trebled, due in large part to a directive in 2001 setting non-binding targets for renewable electricity and a directive in 2003 promoting biofuels in the transport sector. The result is that the UK renewables industry is now worth £12.5bn a year and supports 110,000 green jobs'.

2.4.11 The REA was of the opinion that the Renewable Energy Directive 'got it right' in setting targets with a clear framework, leaving it up to Member States to decide how to achieve it. They suggested that the fact that the target was binding had provided industry with confidence that it would be: 'less prone to short-term, political manipulation'.

2.4.12 Climate Parliament also commented on the benefits of a target set at EU level: 'The challenge of switching to renewable energy, where the supply is subject to local and seasonable variability, is more manageable if faced at EU level, compared with the UK trying to "go it alone"'.

2.4.13 However, CIBSE felt that more could be done: 'Given the importance of meeting energy security and carbon emissions reduction goals and stimulating growth by building and accelerating markets for energy efficiency goods and services, the EU's response has, in CIBSE's view, been the minimum meaningful and significant action required in relation to the scale of the challenge. And if the EU is to maintain secure, affordable and dependable energy systems in the future, CIBSE would argue that more needs to be done at both EU and national levels'.

Targets – Tensions

2.4.14 Stakeholders had differing views as to the effectiveness of the three targets for greenhouse gas reduction, renewable energy and energy efficiency – whether they could be seen as acting in a complementary way, each reinforcing the other and adding resilience or contained inherent tensions.

2.4.15 For instance, the REA and RES regarded the multiple targets as having been a success, though there were aspects of the individual pieces of legislation that could be improved.

2.4.16 In the workshop on 20 November 2013 some stakeholders were of the view that the EU multiple target approach added resilience. They felt that if one strand of policy failed, for example, the EU ETS, other strands (renewables obligations and to some extent energy efficiency measures) would ensure that some progress along the road to decarbonisation of the energy sector would be made. They regarded a single goal approach as somewhat risky because if that flagship policy failed, no progress in reducing emissions would be made until the legislation was changed. This would be a lengthy process and counter-productive.

2.4.17 However there were a number of stakeholders who took a less positive view on the impacts of the multiple '20-20-20' targets. This included a few individuals who viewed most EU action as having a negative effect on retail prices as well as stakeholders attending the two sustainable workshops in London.

2.4.18 Amongst those stakeholders, some viewed targets as compromising affordability and security of supply objectives with the costs of meeting the targets ending up on consumers' bills. They considered that technology specific targets – for renewables for example – have meant that the UK has not been able to pursue the most cost-effective mix of measures and means of delivering emissions reductions at the national level.

2.4.19 Stakeholders also pointed to inherent and conflicting tensions between multiple targets that distorted the market and created perverse incentives to pursue certain technologies over others, even if they were less economically efficient. EDF Energy wrote: 'There is good reason to believe that the interacting nature of the 20-20-20 targets (including the unintended consequence of effectively undermining the carbon price) was not fully considered at the inception of the package. In addition, the requirement to meet the renewables energy target did not come with any regard to cost'.

2.4.20 Some stakeholders felt that multiple targets had had the unintended consequence of reducing incentives to invest in development of other low-carbon technologies notably CCS and considered that a technology neutral approach would both be more cost-effective and also not undermine the EU ETS. This issue of unintended consequences of EU legislation was raised a number of times also in workshops and the view that targets distorted the market was also expressed by respondents submitting evidence to the Environment and Climate change Report.[15] Fresh Start, for example, referred to the dangers of prioritising renewable energy sources over other potentially more cost-effective methods of carbon reduction.

Fuel Quality and Biofuels Use

2.4.21 The Renewables Directive 2009/28/EC introduced a target for the share of energy from renewable sources in the transport sector to amount to at least 10 % of final energy consumption in the sector by 2020. In addition, under Directive 2009/30/EC, the UK has to reduce the GHG intensity of fuels by 6% by 2020 with much of the progress towards these targets expected to come from biofuels. Biofuels have to meet mandatory sustainability criteria.

[15] HMG, *The Balance of Competences Between the UK and the EU: Environment and Climate Change Report* (2014).

2.4.22 Although some stakeholders[16] saw benefits in EU energy policy shaping biofuels policy in this way, a number of those stakeholders expressed disappointment about subsequent changes in EU policy around the sustainability of bio-fuels. REA wrote that they regretted: 'untimely changes to EU policy, foremost amongst these is the Commission's proposal of October 2012 to restrict the use of first generation biofuels'.

2.4.23 More specifically the renewables industry feared that the Commission's current proposals to address indirect land use change[17] could destroy the industry. In particular they believed that it was: 'vital that EU policy is consistent over a reasonable term if investment is to come forward'. The NFU also had concerns about the European Commission's proposals on limiting the use of first-generation biofuels and believed the proposals: 'threaten to slow investment that would lead to the development of next-generation advanced biofuels'.

2.4.24 Other stakeholders, whilst recognising the good intentions and many of the positive outcomes of the EU's renewable energy policy, identified what they regarded as negative indirect impacts and consequences of EU policy creating a demand for biofuels. The RSPB noted: 'environmental impacts from biofuels production can include biodiversity loss, land-use related greenhouse gas emissions, and impacts on water, soil and air quality. Social impacts can include land rights conflicts, land-grabbing, and degradation of the livelihoods of local communities and indigenous peoples. Competition for land is also leading to high food price volatility, undermining food security globally'.

Energy Efficiency

The Energy Efficiency Directive

The Directive was adopted in 2012 and has to be transposed into domestic legislation by all Member States by June 2014. This Directive establishes a common framework of measures for the promotion of energy efficiency within the EU and covers all elements of the energy chain. Requirements include:

- The obligation on each Member State to set an indicative national energy efficiency target by 30 April 2013.
- The obligation on Member States to achieve a certain amount of final energy savings over the obligation period (01 January 2014 – 31 December 2020) by using energy efficiency obligations schemes or other targeted policy measures to drive energy efficiency improvements in households, industries and transport sectors.
- The obligation for large enterprises to carry out an energy audit at least every four years, with a first energy audit at the latest by 5 December 2015.
- The public sector to lead by example by setting annual targets for building renovation (or equivalent energy savings) on the central government estate and by including energy efficiency considerations in public procurement so as to purchase energy efficient buildings, products and services.
- The obligation to undertake national assessments of co-generation and district heating potential and measures for its uptake to be developed by 31 December 2015.

[16] Including AB Sugar; REA; NFU; *Brussels Workshop*.

[17] The issue of indirect land use change (ILUC) is currently being considered at EU-level: a proposal for a Directive amending Directive 98/70/EC relating to the quality of petrol and diesel fuels, 1998; and amending Council Directive 93/12/EC relating to the sulphur content of certain liquid fuels, 1993; and amending Directive 2009/28/EC on the promotion of the use of energy from renewable sources, 2012.

2.4.25 The EU's initial action on energy efficiency focused on setting minimum performance standards for energy-using products within the context of the Single Market and avoiding barriers to trade. However, with the growing focus on the need to reduce greenhouse gas emissions came recognition of the important role that improvements in efficiency could play in reducing emissions by reducing energy demand, whilst also at the same time enhancing security of supply and the competitiveness of EU industry.

2.4.26 There was broad agreement expressed by stakeholders, including in workshops, that EU action on energy efficiency had delivered benefits for the UK and improvements in energy efficiency in the UK might not have occurred without EU action. It had also created a market for innovation. RES wrote: 'The EU measures and policies have immensely helped the development and deployment of sustainability measures: energy efficiency, renewable and low carbon energy. The UK would not be in the position it is today without the adoption of the 2020 targets'.

2.4.27 Some stakeholders were of the opinion that standards for energy-using products were consistent with the Single Market and had contributed to more of a level-playing field. In addition, EU action on energy labelling had helped drive behavioral change by aiding consumers in making informed purchase decisions.

2.4.28 Nonetheless, some stakeholders felt that EU energy efficiency legislation had been too prescriptive and, in the workshop on energy efficiency, it was suggested that sometimes the EU had become too focused on harmonisation of measures and policy tools which were not always appropriate as national circumstances, including climate and consumer attitudes, differed considerably between Member States.

2.4.29 Stakeholders also felt that some of the legislation had been interpreted differently by Member States and/or some Member States had been slow to implement, – this in turn had led to competitive disadvantage for the UK.

2.4.30 As regards energy labelling of traded goods, Energy UK felt it was: 'best tackled at European level and […] that there is a role for the Commission in disseminating best practice and promoting technology innovation'. However they were less convinced of the need to set European energy efficiency targets or harmonise national policies. They said: 'EU Member States differ considerably in terms of climate, geography, industrial development, housing stock, generation mix, and so on, and use a variety of policy instruments to promote energy efficiency (taxes, supplier obligations and so on). The Commission has tended in our view to take an over-prescriptive approach to regulation, including the recent attempt in the Energy Efficiency Directive to impose CHP for all new fossil plant, though this was not included in the final text'.

2.4.31 Energy UK went on to say: 'Energy UK members believe that it would be preferable to set a target for greenhouse gas reduction and to allow Member States flexibility in the extent to which they achieve this through energy efficiency or through other measures'.

2.4.32 A few stakeholders noted that the UK had shown leadership in the area of energy efficiency, but views were split as to whether this had been an advantage or disadvantage when the EU had still been developing its policy in this area. On the one hand some welcomed such leadership as a means of influencing EU-level developments, whilst others were less convinced, in circumstances where the UK had taken early action and then subsequently may find it has to amend UK legislation to fit EU requirements.

2.4.33 An example cited by a few stakeholders had been the issue of implementation of the Energy Performance of Buildings Directive and the potential conflict with the UK's own more ambitious targets to reach 'zero carbon homes' (ZCH) by 2016 as opposed to EU aims of achieving 'nearly zero-energy buildings' by 2021.[18] CIBSE wrote: 'the UK Government's policy to require all new homes built from 2016 onwards to be zero carbon in relation to regulated energy use in buildings is a case in point. The EU Energy Performance of Buildings Directive has a similar requirement which is referred to as requiring "nearly zero-energy buildings" by 2021. It is not yet clear whether the definitions of "zero carbon" and "nearly zero" will be complementary, or conflicting'.

2.4.34 This was also referred to in evidence submitted to the Semester 2 Environment and Climate Change Report.[19]

2.4.35 A number of stakeholders shared Energy UK's view that it was appropriate for standards and labels for energy-using products to be pursued at the EU-level. This regarded this as avoiding barriers to trade within the Single Market and ensured a consistent approach across the EU. Building energy solutions commented: 'I would like to see more common standards for benchmarking energy performance of buildings and building energy certification being implemented right across Europe on a single common basis. This would promote energy efficiency comparisons across estates that are Europe-wide and highlight countries that have poorly performing buildings […] The job creation in refurbishing existing buildings for energy efficiency is huge'.

2.4.36 BT also regarded some standardisation as being helpful: 'Standardised labelling of electricity products would further support transparent reporting' while RWE suggested that EU action should be more limited: 'While there is a need for competence on energy efficiency at the European level, this should be limited to setting minimum energy performance standards i.e. product standards and product labelling, to ensure a consistent approach across the EU'.

2.4.37 CIBSE shared this broader approach: 'the EU level framework should be flexible, non-prescriptive and ambitious. It should be designed to encourage best practice and incentivise compliance. It should set the long term direction of travel and strategic objectives or milestones, leaving Member States to prepare and implement plans to achieve those objectives/milestones. The European Commission would make periodic checks on progress, taking such action as necessary to ensure those EU level objectives are met'.

According to DECC publication: *Estimated Impacts of Energy and Climate Change Policies on Energy Prices and Bills* total final annual domestic sector consumption of gas and electricity (temperature adjusted) in the UK has been on a declining trend since 2005, in part due to the impact of energy efficiency policies.

However, as indicated in Section 2.2 of this report, as regards price effects, it is impossible to separate out what may or may not be attributed to EU action in these areas from what may have happened if there had been no such action. Many factors are at play here including the effect of the recession and cumulative effects of related policies.

[18] Calor Gas; CIBSE; Sustainable Energy Association; *submissions of evidence*; and *Record of 29 November 2013 London Workshop.*

[19] HMG, *The Balance of Competences Between the UK and the EU: Environment and Climate Change Report* (2014).

Combined Heat and Power

2.4.38 The CHPA, considered that EU energy efficiency legislation (the Cogeneration Directive, now replaced by the Energy Efficiency Directive), had ensured that the UK was able to support combined heat and power within the European Union's State aid constraints and had encouraged and driven support for this technology; it also noted that its detailed requirements can, in some instances, be overly restrictive and prevent the successful deployment of the technology, contrary to legislative intention.

2.4.39 Forth Energy shared this nuanced view and cited the EU Energy Efficiency Directive as providing an example of well-intended EU legislation which sought to support efficient CHP plants, but had the potential to undermine UK efforts to promote the use of biomass in CHP facilities.[20]

CCS

2.4.40 A few stakeholders were particularly concerned at what they saw as the prioritisation of renewables over carbon capture and storage, which was still at an immature stage but had huge potential, particularly for the UK.[21] They felt there should be equal treatment for both renewables and carbon capture and storage.

2.4.41 EDF commented: 'the focus on renewables has also undermined the carbon price signal in the EU, has held back investment in other low carbon technologies such as nuclear and fossil fuel plant with carbon capture and storage'.

2.4.42 One of the issues preventing progress on CCS and mentioned by stakeholders in workshop sessions, including in the Glasgow workshop, was the heavy emphasis on financial liabilities in the CCS Directive, which they saw as acting as a disincentive for investment. They recognised that public awareness and lack of understanding of the technology was also an issue that needed to be addressed, possibly also at EU level. Stakeholders felt that EU action had so far failed to take account of the important contribution that CCS can make to the decarbonisation agenda.

2.4.43 The House of Lords European Union Committee in their report: 'No Country is an Energy Island: Securing Investment for the EU's Future', had also addressed this point. The report said: 'the slow progress of CCS thus far and its importance to EU energy policy suggest that a stronger incentive needs to be developed at EU and Member State level. This requires a stable source of national and EU funding and a credible carbon price or regulatory approach'.

2.4.44 Energy UK reflected the views of many stakeholders during the course of the review when they said there was a role for the Commission and European policy-makers collectively to work: 'to keep energy options open rather than closing them down' and to maintain a diversified mix of fuels and technologies to ensure security of supply and minimise costs.

[20] Directive 2012/27/EU on energy efficiency, 2012.

[21] Including EDF energy; and Giles Chichester MEP and Vicky Ford MEP, writing on behalf of Conservative MEPs, *submissions of evidence*.

Section 2.5 – EU- External Energy Relations

This section focuses on external relations in the energy field and the way in which EU competences have been exercised.

2.5.1 The wider issue of the EU's role in external relations and the exercise of the EU's external competence have been considered in the Foreign Policy Report. However this section looks at the various ways in which EU competences have been exercised in practice in international fora in the field of energy. A particular concern has been to ensure that Member States are not constrained from speaking freely on their own behalf by the exercise of EU competence.

International Energy Agency (IEA)

2.5.2 In the IEA meetings, for example, those Member States that are also member countries of the IEA (not all Member States are members of the IEA) have informal co-ordinating meetings with the Commission before main meetings to agree a general line, but this in no way prevents Member States from retaining their right to speak freely and voicing their own national perspective. The EU has a place at the table but no formal voting rights.

International Climate Change negotiations

2.5.3 In international climate change negotiations under the United Nations Framework Convention on Climate Change (UNFCCC), though not the subject of this report, a political decision was taken to negotiate en bloc, with agreement on EU positions reached by consensus among Member States and the European Commission. Members of the Commission and representatives from some Member States work together in a 'Team EU' arrangement.

International Renewable Energy Agency (IRENA)

2.5.4 The situation for the UN body IRENA is slightly different again in that EU positions are agreed in EU energy working group discussions and co-ordination meetings are held with the Commission and Member States before each meeting, but room is left for Member States to express their own views at meetings.

Energy Community Treaty

2.5.5 In 2006, the EU, on behalf of Member States, and the States of South-East Europe (Albania, Bosnia-Herzegovina, Macedonia, Montenegro, Serbia, Kosovo and now also Ukraine and Moldova), concluded the Energy Community Treaty. At the time Croatia, Romania and Bulgaria were also contracting parties, but are now EU Member States.

2.5.6 The main aim of the Energy Community Treaty is to extend EU energy and environmental rules into the energy markets of South-East Europe, create a stable investment climate and help to provide security of supply both in the region and the EU. South-East Europe is also strategically important to the EU for its potential to offer increased diversity of gas supply routes for gas to the EU from different sources over the longer term. Ukraine acceded to the 'Energy Community' in 2009, which requires it to implement EU energy legislation, including the second and third energy packages by January 2015. However, in 2013, the EU agreed on an extension for this deadline for Moldova for 2020 and effectively left open the door for the Ukraine to do the same.

2.5.7 The EU is a party in its own right to the Energy Community Treaty with EU Member States agreeing their position with the Commission in advance of Energy Community meetings. When an applicant country applies for membership of the Treaty, EU Member States also agree the mandate for the EU to negotiate the terms of that accession.

2.5.8 Though the Energy Community Treaty contains mutual assistance provisions in the event of disruption of energy supply, measures proposed by the Energy Community can be blocked by the EU.

Energy Charter Treaty

2.5.9 The Energy Charter organisation was formed in 1990s to promote international investment in the energy sector in Eastern Europe following the break-up of the Soviet Union. The Energy Charter Treaty protects investors investing in emerging foreign energy markets and offers enforcement of rights to compensation in cases such as breach of contract or sovereign expropriation. It also adds value in covering both energy trade and transit and including states not in the World Trade Organisation (WTO).

2.5.10 All EU Member States have ratified the Energy Charter Treaty and the EU is a party in its own right. Whilst largely Eurocentric, membership also includes Japan and a swathe of Central Asia. Notable is the absence of Russia, who withdrew from the Treaty in 2009.

2.5.11 EU positions are agreed in EU energy working group discussions and co-ordination meetings are held with the Commission and Member States before each meeting, but room is left for Member States to express their own views at meetings (provided these do not directly contradict the agreed EU position).

Trade Agreements

2.5.12 Although energy is a matter of shared EU and Member State competence, the EU has exclusive competence in trade policy and (non-portfolio) investment. The European Commission represents the EU on the basis of a mandate agreed by the Council, energy aspects of multi-sector trade and investment agreements involving third countries, notably in WTO negotiations. These include accession negotiations with would-be members and EU Free Trade Agreements (FTAs).

2.5.13 Member States are parties in their own right to EU FTAs and other agreements with third countries as well as through being part of the EU. Since EU agreements with third countries tend to cover a wide range of areas besides trade (for example, cooperation on security, science, development, transport), and since there are some aspects of trade (for example, trade in transport services and aspects of intellectual property) that remain within shared competence, it is a political choice whether the EU or Member States choose to act.

2.5.14 The attraction of FTAs of course is that, with only a few parties involved (often only two), they can be agreed more quickly than WTO agreements. This is not only because the process of negotiating multilateral trade agreements among the 160+ WTO members across a wide range of issues and sectors is inevitably lengthy, but because parties to FTAs can make commitments that go beyond their WTO obligations.

2.5.15 The other advantage in including energy in FTAs is because WTO coverage of some aspects of energy activity is either unclear, notably on transit via fixed infrastructure of pipelines and grids, or is limited on its coverage for investment.

2.5.16 In practice, energy provisions in EU FTAs usually reflect the relevant Energy Charter Treaty transit provisions and can go further. The UK and other EU Member States are parties to the Energy Charter Treaty both individually and as part of the EU and is an arrangement which works well. The EU's position is agreed by Council.

Transatlantic Trade & Investment Partnership (TTIP)

2.5.17 The EU has a number of FTAs with third countries in place and under negotiation. The largest of those under negotiation is the TTIP negotiations with the United States comprising a wide range of sectors – including energy – plus 'horizontal' issues (those affecting many sectors such as regulatory processes, customs procedures, licensing). From a UK Government point of view, TTIP priorities include using the negotiations to facilitate EU access to US gas and to reduce barriers to environmental, green, energy efficient goods and services. The scope of TTIP, as its title suggests, is confined to trade and investment and this includes freeing Liquefied Natural Gas for export as an EU negotiating objective for TTIP which, from an EU perspective, will also have an energy security dimension.

UK Position

2.5.18 In the main, the UK Government tends to be more alert to the possibilities of extensions in EU competence in external energy relations and proactive in questioning competences than other Member States (though other Member States may support depending on where their political interests and allegiances lie). For example, most of the smaller central and eastern Member States tend to favour giving more power to the EU to give them greater leverage in negotiations with third countries. In that context, the Decision instrument on transparency of Member States' intergovernmental agreements with third countries agreed in 2010 expressly recognises that the Commission may participate in negotiations at the request, or with the consent of, the Member State in question and requires that the text of bilateral agreements are shared with the Commission where they are likely to impact on the functioning of the internal market.

Maximising EU Weight

2.5.19 Discussions in workshops and stakeholder comments on the impact of additional activity in the area of EU–external energy relations did not particularly differentiate between the different types of representation and the extent to which this might lead to, and the possible consequences of, an extension of competence. There was some sense from the discussions that stakeholders regarded the issue of competence as more for Member States and the UK Government to concern itself with rather than an issue for business.

2.5.20 A number of stakeholders, viewing the issue from a commercial perspective, simply saw merit in a single international voice to carry more weight.

2.5.21 Shell argued that: 'The ability to leverage within larger government to government international agreements is far more beneficial from inside of the EU. Globally there has been an increase in the number of government to government deals. These multi-sectoral deals offer packages on energy, infrastructure, finance etc. In many resource holding countries (for example, in Central Asia) the host government is keen to deal with a single entity, for example, for energy exports'. They also felt that this could benefit specific areas of technology development, for example CCS.

2.5.22 RES argued that by: 'the EU taking a strong lead at international climate negotiations by setting strong renewable energy, greenhouse gas emissions and energy efficiency targets [this] would send the right signals to other nations and increase the likelihood of a science-based agreement'.

2.5.23 E.on said: 'the priority for the EU should be to complete the internal energy market. We accept however that there may some merit in negotiating trading arrangements. EU negotiation at the UNFCCC is a good example of the benefits of the EU negotiating as a bloc, achieving more than individual Members States would alone'.

2.5.24 Energy UK had a more nuanced view that whilst there are benefits in the EU taking a coordinated approach to discussions with the major energy-producing countries: 'nevertheless, it must be recognised that Member States will sometimes have competing interests and that a collective view will not always be reached. We would envisage the European Commission taking a high-level facilitation role rather than becoming directly involved in commercial negotiation'.

2.5.25 More generally, RSPB, Rail and Environmental Consultancy, Association for the Conservation of Energy, Energy Elephant, British Irish Chamber of Commerce, Brussels and Europe Liberal Democrats and the Food and Drink Federation felt that Member States would have more negotiating 'clout' if the EU was able to speak on their behalf.

2.5.26 Other views included a 'rule of thumb' that where measures at an international level impacted on individual Member States, Member States should be able to speak in their own right, whilst CPI stated that international negotiations were: 'primarily a matter for Member States, though there may be benefit in collective representation on major transnational energy projects, on a case by case basis, where Member States agree this to be beneficial'.

2.5.27 Finally, Building Energy Solutions saw a strong EU role in: 'promoting and encouraging a low carbon economy but not in negotiating international agreements'. Trader Vick similarly saw no role for the EU. Cardiff University said: 'it is understandably a long and complicated exercise to negotiate a way forward with so many Member States. Negotiating to a position where a united EU view can be presented at global negotiations may actually delay global decisions rather than facilitate them'.

Section 2.6 – Nuclear and Euratom

This section includes consideration of EU competences on nuclear (as it is affected by EU legislation other than under the separate Euratom treaty legislation), Euratom, nuclear R&D and nuclear investment.

2.6.1 The Euratom Treaty aims to encourage the development of a European nuclear industry through cooperation between Member States and a sharing of resources and covers nuclear R&D, nuclear investment and the safety and security of nuclear materials.

2.6.2 In comparison to responses in the other areas of the Energy Review, there was not a large response to the Call for Evidence as regards the EU's competence for nuclear energy under the Euratom Treaty, even though the engagement net went very wide and efforts were also made to include stakeholders with interest in 'non-nuclear' areas involving ionising radiation such as medicine. Nevertheless some useful responses and discussion emerged as reflected below.

2.6.3 In general stakeholders in the nuclear workshop were very clear as regards the potential role that nuclear could play in the UK's challenging transition from a relatively high carbon-intensive economy to a low-carbon mix to reach its emissions and renewable energy targets. However they felt that insufficient attention was given to this aspect by the Commission and was particularly surprising given that Euratom had, as its primary objective, the promotion of nuclear. Instead the Commission focused on safety and security issues.

2.6.4 The UK Government's position is clear; it is committed to retaining nuclear in its energy mix and has been considering a number of options to facilitate a range of low carbon investment, including nuclear generation as part of its Energy Market Reform (EMR) suite of proposals including the State aid issues in respect of Hinckley Point C.

2.6.5 Currently, the UK has around 93 GW of installed electricity generation capacity of which 40% comprises gas generation capacity and 23% coal. Nuclear power has generation capacity of around 9.2 GW. However about 9.5 GW of electricity generation capacity is scheduled to close over the next 10 years, including 8 GW of nuclear capacity. As of March 2014, 1.5 GW of capacity is due to retire by 2015 under the Large Combustion Plant Directive and, by the end of 2023, all but one of the existing nuclear power stations (Sizewell B) are also due to close.

2.6.6 This means that the UK margin of excess electricity generating capacity could, in a base case scenario, decrease from its pre-liberalisation levels of 20% to below 10% in 2022. Indeed some forecasts are considerably more pessimistic – the de-rated capacity margin (average excess of available supply over winter peak demand) is forecast by the Office of Gas and Electricity Markets (Ofgem) to decrease to around 4% in 2015.

2.6.7 Stakeholders held diverse views on the impact of EU and Euratom actions on nuclear activities and nuclear policy in the EU and the degree to which this supported or hindered the development of nuclear power in the UK. Whilst overall there was broad consensus on the positive value of Euratom, a small minority thought that nuclear should not be part of the energy mix and/or more safeguards were needed in respect of nuclear power. There was considerable discussion at the nuclear workshop about where the Commission stood as regards promoting nuclear as a low carbon energy source. Stakeholders found it surprising that nuclear rarely features in Commission energy policy communications, yet Euratom (to which the EU is a signatory party as well as all Member States who join the EU), has the primary aim of supporting the peaceful use of nuclear.

2.6.8 This sentiment was also echoed by some stakeholders in their written submissions; they felt more should be done at EU level to promote nuclear as a low carbon energy source. They felt the balance of emphasis was too heavily weighted on safety and security aspects of nuclear, rather than on its benefits. Giles Chichester and Vicky Ford, writing on behalf of Conservative MEPs, were of the view that: 'renewables projects receive much more leeway from State aid rules than other low carbon energy technology projects such as nuclear or CCS. Were it not for the renewables target, it is likely that new nuclear projects would already be underway'.

2.6.9 Energy UK also regarded nuclear energy as an important element in a diversified fuel mix, which can help to reduce Europe's import dependency as well as reducing carbon emissions. They also echoed other stakeholders in that they saw a role for the Commission to ensure that nuclear energy is able to compete on a level playing field with other decarbonisation options.

2.6.10 There was also the view expressed that without Euratom legislation and its aim to promote the development of nuclear as an energy source, there would likely have been more effort devoted by Member States who are not in favour of nuclear to discourage its use in other Member States.

2.6.11 Tradervick Limited felt that Euratom and the IAEA do important work in ensuring that international standards and best practices are agreed and spread across the world and that: 'nuclear fusion and tidal power options should be the focus of longer term goals'.

2.6.12 More broadly Energy Geoscience could see: 'a lot of transferable knowledge and methodology from the Euratom Treaty that can be equally used to support shale gas exploitation and Carbon Storage'.

Nuclear Safety

2.6.13 The Scottish Government wrote: 'overall the EU acquis in relation to civil nuclear safety works well for Scotland establishing a robust framework for ensuring high safety standards across the Scottish, and wider UK, civil nuclear plants. The Euratom Treaty is primarily aimed at promoting nuclear energy and establishing uniform safety standards for protection of workers and the general public. The current EU framework enforces minimum standards but allows individual Member States to regulate the nuclear industry in their states ensuring flexibility to accommodate specific UK and Scottish dimensions in nuclear safety matters and also allowing the UK nuclear industry to set standards which are in excess of the EU minimums if desired'.

2.6.14 Brussels and Europe Liberal Democrats quoted the stress tests that were carried out post Fukushima as a positive move involving the EU. They regarded the rapid response of the EU (the European Commission, coordinating with the Member States) as helping to: 'ensure the confidence of the public in the nuclear industry. Many other countries and territories emulated this action and also conducted comprehensive nuclear risk and safety assessments, based on the EU stress-test model'.

2.6.15 Energy UK was of the opinion that the Euratom Treaty provided an: 'appropriate framework for the development of nuclear energy in Europe while leaving the decision on whether to deploy the technology to each Member State. They also were of the view that: 'national nuclear safety regulators should continue to have the primary responsibility for overseeing the safety and security of nuclear installations'. Energy UK welcomed the closer cooperation between national regulators that has been developed in recent years and felt that: 'any action at EU level should not encroach on the competence or credibility of national safety regulators and should complement the requirements of the relevant international conventions and IAEA Guidelines'.

2.6.16 Some stakeholders found it unhelpful that the EU continued to try to extend its competence in this sector through the route of safety and security legislation – they regarded this as an area that has already been sufficiently legislated for.[22] Stakeholders also took issue with the EU introducing new legislation when existing legislation has been barely implemented, for example the proposed amendments to the Nuclear Safety Directive.[23]

2.6.17 TUC wrote of the benefits of legislation relating to radioactive substances made under the Euratom Treaty which sets basic safety standards to protect the health of workers and the general public against the dangers arising from ionising radiation. In their evidence they said: 'the 2009 European Union Nuclear Safety Directive created a high level nuclear safety framework as part of EU law that is enforceable before the ECJ. It represented the first step towards the harmonisation of nuclear safety approaches across the EU. The Radioactive Waste and Spent Fuel Management Directive (2011) requires Member States to submit national programmes for waste management to the Commission by 2015 for approval'.

Nuclear Research

2.6.18 As regards nuclear research and development, the National Nuclear Laboratory (NNL) was of the view that collaboration with other EU R&D institutions and industry has been facilitated by the involvement in EU programmes. This had allowed the UK to market its talent, expertise and cutting edge facilities. In particular they wrote: 'EU research funding under the Euratom Framework Programme (FP7) has allowed NNL to participate in cutting edge nuclear fission research using the UK's active nuclear R&D facilities'.

Commission Impact Assessments (IAs)

2.6.19 Participants in the nuclear stakeholder workshop were highly critical of the quality of Commission consultations. They felt most recent consultations on nuclear safety and nuclear liability had been very poor due mainly to the very low visibility of consultations. As a result the Commission received a very small number of responses for their proposals. This was a problem if the Commission then takes forward actions on nuclear safety based on a very small sample (300 was quoted in one case). Stakeholders also felt that the questions that were asked by the Commission were inappropriate – they tended to be leading questions.

Potential Overlap Between Euratom and International Bodies

2.6.20 Stakeholders recognised that there was a degree of overlap between the work of Euratom and work undertaken at international level, in particular under the auspices of the International Atomic Energy Authority (IAEA). Both advantages and disadvantages were identified with this. For example, there were often time lags between standards being adopted at international level and then at Euratom level which could cause confusion, but on the other hand this did allow for industry to have the time to manage the changes. With regard to representation at the international level, stakeholders thought that it was very important that individual Member States should continue to have a voice rather than being represented on all matters through Euratom. This was especially so given Member States' right to determine their own energy mix.

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[22] Including: EDF Energy; *submission of evidence* and *Record of 11 December 2013 London Workshop*.

[23] *Record of 21 January 2014 London Workshop*.

Chapter 3: Future Opportunities and Challenges

Introduction

3.1 This chapter considers the major future challenges in the field of energy policy and how EU competence might be best deployed, or not deployed, to address them in the UK's national interest. Key challenges identified by respondents included:

- The impacts of growing global energy demand and geo-political developments on the future security of the EU and UK's energy supply;
- The need for affordable energy to underpin EU and UK competiveness and economic growth, the implications of rising and divergent energy prices and the implications of the completion of the internal market; and
- How to ensure the EU's 2030 framework for energy and climate change policy focuses on delivering cost-effective de-carbonisation of energy.

The Global Energy Outlook

3.2 The global energy market is currently going through significant changes. Growth in energy demand is switching decisively to the emerging economies, particularly China, India and the Middle East. Based on its New Policies Scenario in 2013, the IEA estimate a 35% increase in global energy demand from 2010 to 2035, with a decline in OECD demand more than offset by strong demand growth in the developing world (with China, India and Middle East accounting for 60% of this growth). Low carbon energy sources will not expand sufficiently swiftly to displace fossil fuel growth, and oil demand is predicted to be 14% higher in 2035 and gas demand 50% higher.

3.3 The coming years will also see major importers becoming exporters, with the United States projected to meet all of its energy needs from domestic resources by 2035, while countries that have been major energy exporters, for example in the Middle East, will increasingly become drivers of global demand growth. Energy sources are also changing with the exploitation of unconventional oil and gas and increasing deployment of renewable energy. With energy production the source of two-thirds of global greenhouse-gas emissions, the energy sector will be pivotal in determining whether or not climate change goals are achieved.

3.4 All these developments will pose future challenges for energy security and the development of energy policy in the EU. High oil prices, differences in gas and electricity prices between regions and rising fuels bills in many countries, will all increase the focus on the relationship between energy and the broader economy.

The Role of the Internal Energy Market and Greater Market Integration

3.5 The completion of the internal market will have an important role to play in enhancing energy security by improving inter-connection within the EU and promoting greater market integration. Significant investments in energy infrastructure will be needed to improve inter-connection and energy security and meet climate change targets, investment that will need to comply with EU State aid rules.

3.6 Implementation of the Third Package of energy liberalisation, including adoption of the network codes, will go a long way towards integrating wholesale EU energy markets. The UK Government considers that it is important to allow time for these measures to bed down before considering whether further action is needed at EU level. This view was also reflected in stakeholder evidence, particularly from those industries who were directly involved in delivering gas and electricity supplies to the end consumer. It was generally accepted that increased coordination will be required between Member States, regulators, and Transmission System Operators (TSOs) to fully integrate wholesale energy markets.

3.7 As a consequence of this greater integration there is likely to be pressure for more harmonisation of market rules, not only cross-border, but also to some extent nationally, such as renewable support schemes and capacity mechanisms. RWE and others noted that the nature of renewable support was the competence of individual Member States, albeit subject to State aid approval, and has led to potential developers cherry picking support mechanisms as countries strive to meet their individual national targets. RWE wrote: 'the result is a sub-optimal allocation of resources and additional cost to consumers. This can be avoided if, over time, the EU encourages closer cooperation and convergence between renewable support schemes. This will result in more economic renewable development and more efficient use of resources. If this approach is supported by measures that encourage trading of renewables, it will play to the UK's resource advantages while at the same time providing the most economic solution for the EU'.

3.8 The position of Germany and its decision to close nuclear power stations was also the subject of a number of discussions in the workshops and mentioned in written evidence. The German decision led to significant impacts in the market in neighbouring countries – and continues to do so with the ambitious German renewables programme and consequent variability of demand.

3.9 Many stakeholders saw a need to ensure consistency between individual Member States' support schemes in the future and greater cost-effectiveness in delivering support for renewables. This could require European oversight of national schemes and greater harmonisation of support mechanisms across Europe.

3.10 This and other pressure for harmonisation of market rules could lead to pressure for extending the powers of the EU-level bodies, such as the ACER and the European Networks of Transmission System Operators (ENTSOs), bodies formally established under the Third Package. Nonetheless considerable progress towards integrating energy markets can be achieved through Member States adopting consistent approaches and national regulators and system operators cooperating closely rather than by enacting more legislation.

Energy Prices and Competitiveness

3.11 As we have seen in Chapter Two, stakeholders highlighted what they saw as the increasing disparity between energy prices not only between the EU and its global competitors, particularly the US, but also between individual Member States and the impact this had on the competitiveness of UK business. Stakeholders from the energy intensive industries in the UK felt they were being particularly disadvantaged compared with their peers by lower prices in Germany.

3.12 While the EU retains the lead in exports of energy intensive goods (and the EU manufacturing sector as a whole enjoys relatively low real unit energy costs), some energy intensive sectors are very sensitive to changes in energy prices. In this context, it is worth noting that the IEA's World Energy Outlook 2013 report forecasts that the EU's share in global export markets for energy intensive goods is set to decline by up to 10% up to 2035, so maintaining competitiveness will be key for those and other industries.

3.13 Currently, the Commission is considering whether specific action is needed at EU level on prices (both retail and wholesale) to remove some of the distortionary effects on competition in some Member States. The extent to which this could impact the UK is unclear. However, the actions already identified in the Communication should also help reduce the burden of energy costs for energy intensive industries aided, in the longer-term, by effective use of EU funding streams for research and development to support further improvements in energy efficiency in the sector and the extension of EU energy performance standards for appliances and equipment used in the industry sector.

3.14 As stakeholders have noted action is still required at EU and Member-State level to complete the internal energy market; for example, completing the network codes and achieving full implementation of the Third Package reforms; and to increase levels of interconnection. A well-functioning Internal Energy Market should place downward pressure on gas and electricity prices, including by improving competition, increasing the efficiency of power and gas flows and use of generation capacity, and providing stable price signals to drive cost-efficient investment in energy infrastructure.

3.15 The Government agrees with the Commission's assessment that the EU will continue to face an international competitiveness challenge, particularly in energy intensive sectors. The Government is committed to ensuring that manufacturing is able to remain competitive during the shift to a low carbon economy and to minimise the risk of carbon leakage. A system of measures is currently in place to protect European industry against carbon leakage and competition from third countries with less ambitious climate change policy. These measures include free allocation of more than 500m emission allowances to UK industrial sectors covered by the EU ETS, and compensation for the indirect costs due to the EU ETS.

3.16 The Government's view is that the competitiveness of energy intensive industries should be an integral part of the 2030 climate and energy package by ensuring that the package continues to minimise the risk of carbon leakage. This is one of the reasons the Government supports a single GHG target and opposes binding national 2030 targets for renewable energy, and a binding 2030 target for energy efficiency. Such targets would constrain the breadth of low carbon technology options from being pursued, diminish the role of market selection and reduce Member States' flexibility to follow the most cost effective pathway to meet their greenhouse gas reduction targets.

State Aid – Energy Cases

3.17 As part of the European Commission's State aid modernisation work to revise and update the EU State aid regime, the EU has recently issued its new *Environmental and Energy State Aid Guidelines (EEAG)*, which, for the first time, will specifically cover energy issues.

3.18 The new EEAG will be in force until 2020 and will provide the basis for the Commission's assessment of Member States' State aid notifications in the areas covered by the guidelines. Where a sector/measure is not specifically covered by the EEAG the Commission will continue to carry out its State aid assessment by direct reference to the TFEU It is likely that nuclear, for example, will continue to be assessed under the TFEU.

3.19 The UK Government has welcomed the Commission's State aid modernisation process. A faster, smarter and more up to date framework is needed to help the EU meet its energy, climate change and investment challenges – and for Member States to deliver on them. Cost efficient ways must be found that preserve the competitiveness and neutrality of alternative low carbon options across the EU, whilst still keeping energy prices affordable.

Security of Gas Supply – Exploiting Indigenous Gas Resources

3.20 One way of enhancing the EU's energy security is ensuring the most effective use is made of the EU's own indigenous sources of energy. In North America, for example, the development of unconventional gas in the United States has had a transforming (positive) impact on gas availability (and low prices) in North America. However, there is considerable uncertainty as to the extent to which the exploitation of such resources outside North America will be sufficient to offset rising gas demand.

3.21 There are potentially significant unconventional gas reserves in the EU. In Chapter Two, United States EIA estimates were given of the possible range of recoverable shale gas in the EU of between 2.3 tcm and 17 tcm. This illustrates the scale of the problem in estimating reserves, even where geology, geography and socio–political conditions allow.

3.22 A further uncertainty is whether further legislation in some areas may be necessary, for example for shale gas exploitation. Though there are potentially significant EU unconventional resources, the extent to which these might be economically exploitable – and acceptable environmentally within some Member States – is still far from clear. As is seen from the evidence discussed in Chapter Two there are very mixed views on this subject.

3.23 The Commission has already made clear its opinion that existing guidance on shale gas exploitation could be improved to provide greater clarity to public authorities, market operators and citizens, and has proposed a recommendation which outlines minimum principles to ensure that climate and environmental safeguards are in place. The Recommendation neither implies that Member States are under any obligation to pursue the exploration or exploitation of shale gas activities if they choose not to, nor that Member States are prevented from maintaining or introducing more detailed measures matching the specific national, regional or local conditions. It is possible that, in the future, when there is heightened activity on shale in the EU, the Commission may consider proposing more prescriptive legislation to ensure that all participants adhere to the same rules. The UK Government does not consider such additional prescriptive legislation is needed.

Security of Energy Supplies

3.24 Prospects of 'southern corridor' gas coming from the Caspian area to the EU are already a reality; agreements have already been signed for 10 bcm per annum of gas from Azerbaijan to be delivered around 2018. However this will not be in sufficient quantities in the near term to make radical changes to existing import patterns. Similarly, the global LNG market is likely to play an increased role in EU gas security but changes in the short to medium-term are likely to be limited by the availability of gas supplies. There may be significant potential for further exports from North America over the coming years. However, even this would not guarantee that supplies would come to the EU – that would depend on the price in alterative markets for the gas.

3.25 Although occurring after the Call for Evidence for this report was closed, the events in Ukraine have also highlighted the continuing need to develop policies to maintain high levels of EU energy security for Member States and the wider community countries and to remove reliance on a single supplier and/or prime supplier source for their energy needs. This is particularly relevant at the time of writing in respect of gas supplies. However, a number of Member States, particularly those in the central eastern and Baltic area, are also vulnerable for their heavy dependence on a single or prime supplier source for oil and the Baltic States' isolated 'energy island' status means some have very limited or no electricity interconnection with the rest of the EU either. Discussion over how this situation might most effectively and significantly be improved – in the short and longer term (and at both EU and Member State level), is likely to remain a dominant theme for the EU and, in particular, be a priority for the incoming Commission.

Greater Inter-Connection

3.26 As we have seen in Chapter Two, the TEN-E regulation has already established a mechanism for identifying strategically important cross-border infrastructure with its two year rolling PCI programme and streamlining permitting procedures. TEN-E should not only help secure those key cross-border connections that the market has so far failed to bring forward and help remove associated internal bottlenecks to improve access to sustainable resources, but will be a valuable aid in ending 'energy island status' of a number of Member States. The TEN-E regulation also supports new smart grid technologies that have cross-border impact and, into the future, carbon capture and storage transmission networks.

3.27 With greater interconnection, the large scale development of renewable energy sources in one Member State can have complex effects on another. Interconnection will facilitate greater trading at times of surplus and may reduce the need for capacity building in each Member State. However, this can cause instability in networks and, by reducing prices, can make back-up from gas or other sources uneconomical. Equally, when the wind does not blow or the sun shine the lack of power can lead to unacceptable demands on other parts of the system and in other Member States. This will need to be managed cross-regionally and possibly at EU level as Member States increase the level of renewables in their energy mix to meet their individual renewables targets. How to do this effectively will be an issue for the new Commission in the near future. The network codes under the Third Package are being developed with this in mind, so new EU legislation in this area seems unlikely.

Security of Supply – Nuclear

3.28 The ability to exploit nuclear energy is an important means of diversifying the EU's energy supply and reducing dependency on imported fuels such as gas. However, there is sensitivity too on the future role of nuclear in some Member States in particular. The general view of stakeholders, as with shale gas, was that the choice of fuel mix was for individual Member States, as enshrined in the Lisbon Treaty, and not for others to try to influence that choice. Member States should remain free to develop their own resources provided they did so in an environmentally responsible way.

3.29 NNL felt that there was potential for a structured and funded UK nuclear research programme to work alongside an EU programme; this would allow the UK to take a more leading role internationally and benefit from EU funding.

3.30 Brussels-based Liberal Democrats saw one of the medium term challenges as ensuring a low carbon, sustainable, base-load energy supply. This, they argued, provides a strong case for increasing the UK's nuclear power generation. They regarded the EU's current dependence on imported oil and gas as insecure. In the longer term, they foresaw the Euratom fusion project (ITER) as offering the possibility of secure, sustainable, clean, low carbon, base-load electricity.

3.31 Giles Chichester MEP and Vicky Ford MEP, writing on behalf of Conservative MEPs, noted that the majority of nuclear legislation fell under Euratom as a legal base so that Member States working together with the Commission retain decision making control over Union-level policy in this area. They were firmly of the view that any future treaty changes should retain the established Euratom framework in order to preserve national competence in this area.

3.32 On nuclear, radiological protection and Euratom, it is likely that the Commission and the Council will continue to focus in the near future on safety, emergency preparedness and incident mitigation. Member States are currently considering the Commission's proposal to amend the Nuclear Safety Directive. Following a consultation exercise, the Commission is now working on proposals relating to the liability of nuclear operators to pay compensation in the event of a nuclear incident and insurance for such liabilities.

R&D in Supporting Emerging Technologies

3.33 R&D in new technologies can be expected to continue to play an important role in the future, shaping energy mixes over the medium and longer term. RES in its evidence regarded the targets to date as having led to: 'investments in R&D, innovation and large scale deployment in the sector, which have all contributed to reductions in the cost of renewable energy technologies'.

3.34 The Welsh Government referred to the raised profile of marine energy where it had used EU monies: 'to support R&D of tidal stream technologies and we will continue to utilise this unique funding stream to support the establishment of marine energy in Wales'.

3.35 Fiona Hall MEP, Liberal Democrats' spokesperson on energy in the European Parliament, also pointed to EU monies for research under the framework for 2014-2020, Horizon 2020, which: 'earmarks 85% of its energy research funds for sustainable energy technologies such as renewables, energy efficiency and smart grids. This funding will usefully complement national efforts to invest in the new technologies needed for the transition to a low carbon economy'.

Energy and Climate Change

3.36 Respondents considered that the inter-relationship of EU energy policy with the need to reduce greenhouse gas emissions to address climate change represented a key future challenge. Meeting climate change targets would require massive de-carbonisation of energy supply and decisions taken at the EU-level would be fundamental in influencing whether this was deliverable, and crucially, whether it could be delivered in a cost-effective manner in the UK and beyond. The immediate priority was to agree an effective framework for climate and policy energy for the period to 2030 consistent with longer-term objectives.

2030 Climate and Energy Package

3.37 The UK Government considers that a 2030 framework should be agreed in the near future in order to give investors in energy infrastructure greater certainty and to improve the prospects of a global climate deal. Given the importance of maintaining the EU's international competitiveness and thus keeping costs down, Member States need the flexibility to manage their own energy mixes to achieve the ambitious emissions reductions. The 2014 March European Council conclusions agreed that the European Council should agree to the 2030 Climate and Energy package by October 2014 at the latest.

3.38 There was a range of views from stakeholders about the most appropriate EU action and need for targets for 2030, reflecting, in the main, the nature of their business or personal interests. Some shared the overall approach of the UK Government and argued for a single GHG target (whilst recognising the positive step change in renewables that has been achieved thus far with the current EU 20-20-20 package); others favoured setting multiple targets at EU and/or Member State level to ensure that the EU remained on track to decarbonise its energy sector.

3.39 In its evidence RWE commented that whilst the Renewables Directive has provided long term signals which have stimulated investment in renewable generation and encouraged the development of supply chains, nevertheless: 'it will be important that there is greater coherence between policy mechanisms in future. A fully functioning EU ETS which is consistent with the European Commission's 2050 Low Carbon Roadmap should remain as the central policy mechanism'.

3.40 Shell's contribution summarised the views of a significant number of stakeholders: 'European targets should be set at a high level allowing MSs and the market to define how targets should be met. A technology neutral approach is a more effective market based tool for allowing a cost effective approach by individual MSs to select the most appropriate pathways for them to achieve targets. With a focus towards the 2030 climate and energy package, a single high-level target would promote a technologically-neutral approach'.

3.41 Centrica similarly believed that a technology-neutral approach was: 'a better way to ensure that decarbonisation of our economy happens in a least-cost manner'. E.on also shared this view: 'at the heart of the reforms should be a move to a single, affordable greenhouse gas emissions target for 2030, consistent with the EU's 2050 low carbon roadmap; with this in mind we support the UK's proposal for a 40% 2030 target. This should form the basis for negotiating a comprehensive international agreement to ensure the EU economies remain competitive globally. This would be good for the economies of the UK, EU and the World, and is essential for keeping the world on the right path to decarbonising over the coming decades'. EDF also agreed with one overall EU emissions target.

3.42 The Climate Parliament saw wider opportunities for coherent climate and energy policies: 'the decarbonisation of the economy will lead to the creation of new employment opportunities to address the employment gap. The reduction of employment in the fossil fuel supply chain is more than compensated by increased employment in the renewables and energy efficiency sectors, with the net result estimated to amount to more than 160,000 additional jobs.[1] In addition, electricity market integration will have a general macroeconomic benefit of 0.57% GDP after 5 years.[2] Energy efficiency measures and renewables create jobs and develop EU industries and small businesses'.

Carbon Capture and Storage (CCS) and Electricity Market Reform (EMR)

3.43 CCS will be an important technology for de-carbonisation of the energy supply. The UK has been a clear leader on CCS in Europe and has flagship projects at Peterhead (gas) and White Rose in Yorkshire (coal). The planned UK Energy Market Reforms (EMR) are also designed support commercial deployment of CCS, along with other low carbon generation technologies.

3.44 In its policy framework paper for climate and energy in the period from 2020 to 2030, the Commission recognised the key role that CCS might play and wrote: 'Greenhouse gas emissions from the EU's energy and carbon-intensive industries must come down significantly to be compatible with the EU's long term GHG objective. As theoretical limits of efficiency are being reached and process-related emissions are unavoidable in some sectors, CCS may be the only option available to reduce direct emission from industrial processes at the large scale needed in the longer term. Increased R&D efforts and commercial demonstration of CCS are, therefore, essential over the next decade so that it can be deployed in the 2030 timeframe. A supportive EU framework will be necessary through continued and strengthened use of auctioning revenues'.

3.45 The UK is well placed to take advantage of this if an appropriate framework is developed. The Commission further wrote: 'Member States with fossil reserves and/or high shares of fossil fuels in their energy mix should support CCS through the pre-commercialisation stage in order to bring down costs and enable commercial deployment by the middle of the next decade. This must include the development of an adequate CO2 storage and transport infrastructure that could benefit from EU funding, such as the Connecting Europe Facility and any potential successor'.

3.46 In the latter context, as mentioned in Section 2.3, there is a possibility of CCS projects being included as PCIs under the criteria of the TEN-E regulation and therefore having access to possible funding instruments (loans or grants) under the Connecting Europe Facility (CEF).

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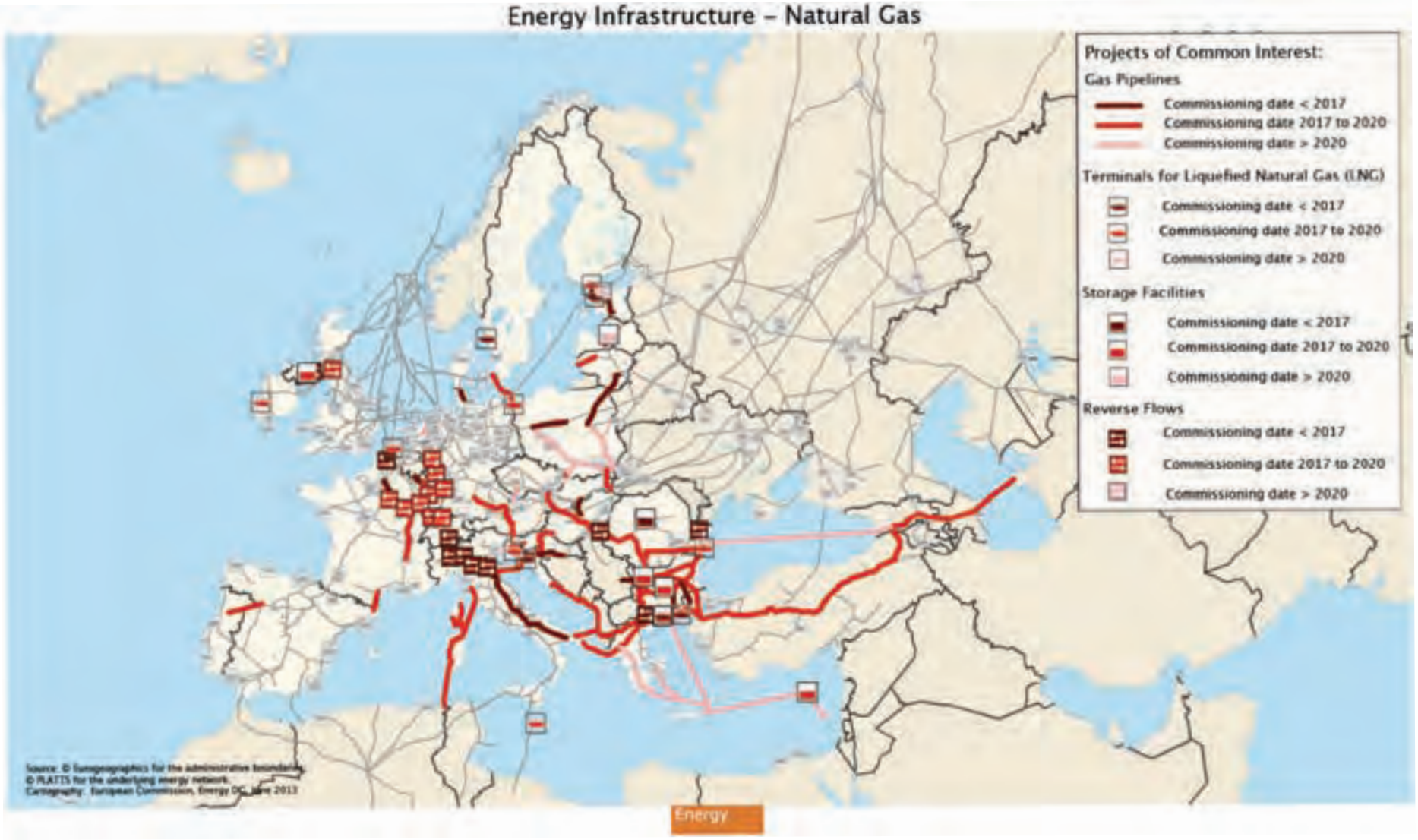
1 European Climate Foundation, *Roadmap 2050: a Practical Guide to a Prosperous, Low Carbon Europe* (2010).

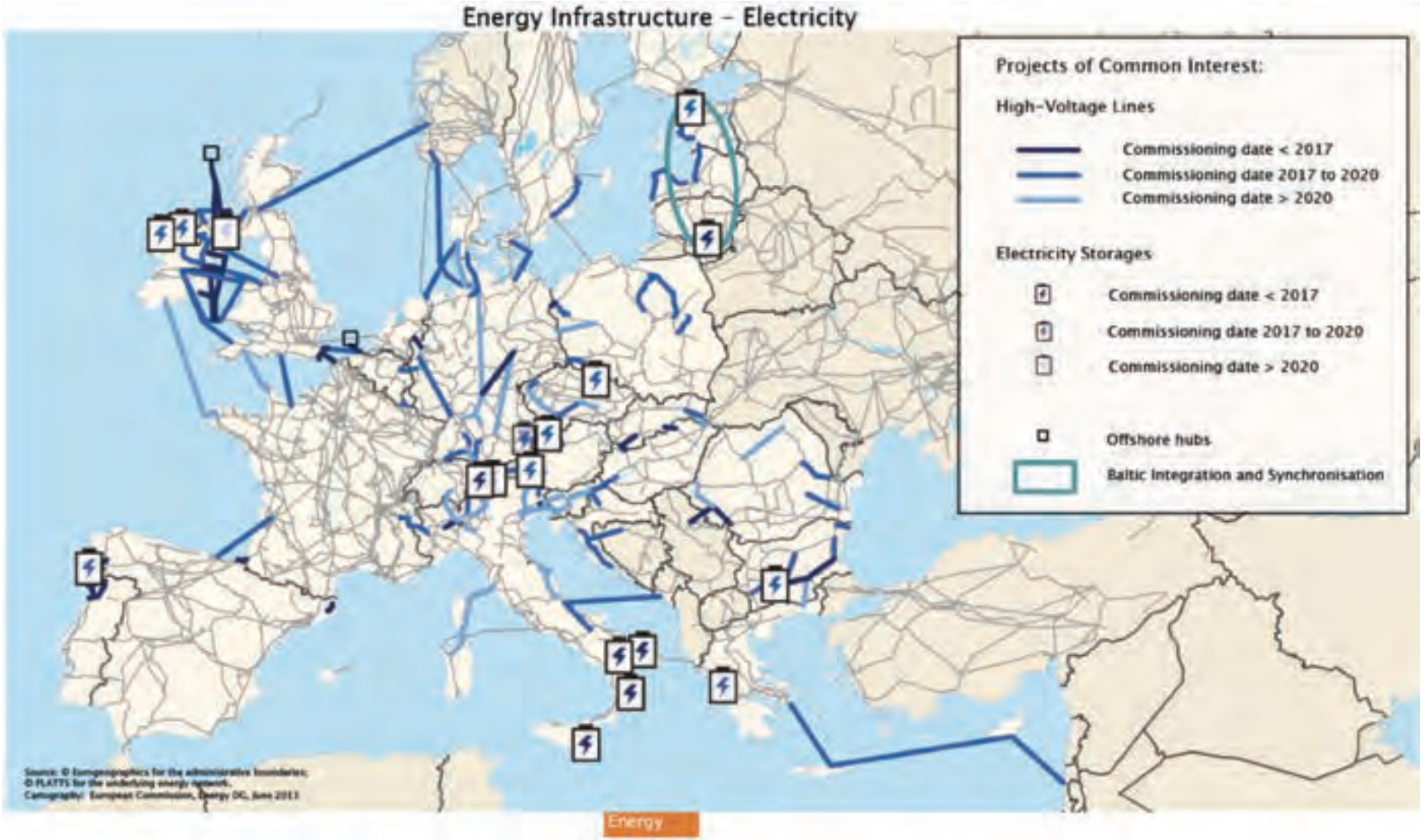
2 European Commission, *Commission Staff Working Document – Accompanying the Legislative Package on the Internal Market for Electricity and Gas – Impact Assessment* (2007).

Conclusion

3.47 The past few years have seen major milestones in the development of the EU's energy policy – most notably agreement of the Third Package of energy market reforms, which will facilitate the single energy market; and the 2020 climate and energy package. Whilst much of the work of the new Commission will be to ensure the implementation and enforcement of these existing measures, there will be further challenges particularly in extending the climate and energy framework to 2030, and a wide agenda of further improving energy security and resilience across the EU. The balance between actions at EU and Member State level will be an issue in all these areas and, by extension, questions of competence will also arise.

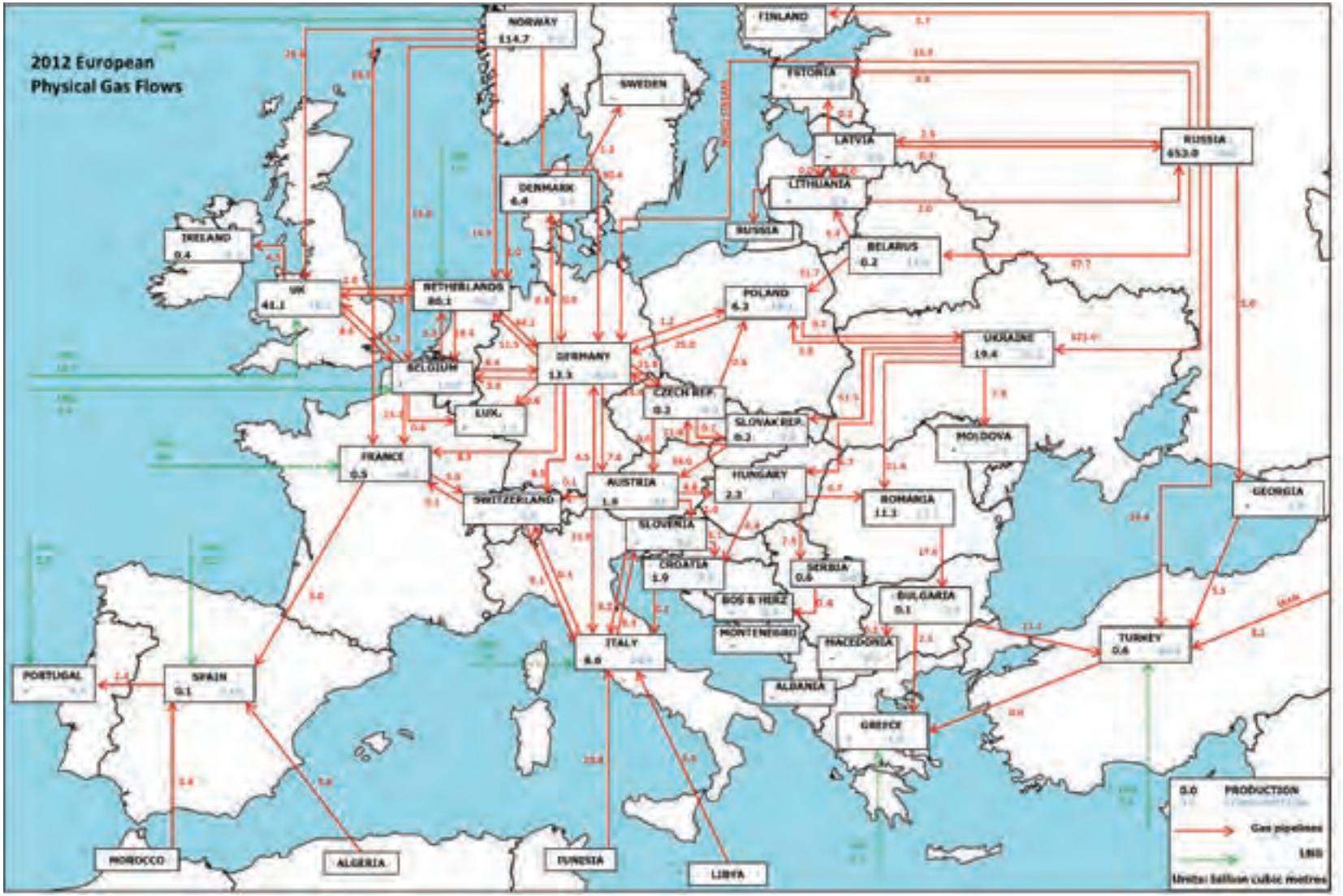
Annex 1: Gas and Electricity 'PCI' Maps





Source: European Commission energy website.

Annex 2: European Physical Gas Flows Map



Source: Energy Trends (2014) published by DECC.

Annex 3: List of stakeholders providing written online evidence

AB SUGAR
Alex Kenny
All-Party Parliamentary Group on Modern Languages
Andrew Smith
Association for the Conservation of Energy
BOC Ltd
Brian RL Catt
Bristol Power Co-operative
British Irish Chamber of Commerce
Brussels & Europe Liberal Democrats
BT
Building Energy Solutions
Calor Gas Ltd
Carbon Capture and Storage Association (CCSA)
Cardiff University – Vicky Stevenson
Centre for European Reform
Centrica
Chell Instruments Ltd
CIBSE
Climate Parliament
Combined Heat and Power Association (CHPA)
Confederation of Paper Industries (CPI)
Confederation of UK Coal Producers (CoalPro)
David Ward
Don Bailey
DONG Energy
Dr Chris Robbins
E.On
EDF Energy
Energy Geoscience
Energy UK
EnergyELEPHANT.com
Fiona Hall MEP, Liberal Democrats' spokesperson on energy in the European Parliament
Food and Drink Federation

Forth Energy
Friends of the Supergrid
Giles Chichester and Vicky Ford, on behalf of Conservative MEPs
Green Alliance
Greenpeace
Institute for European Environment Policy
J. McShane
Jim Dignan
Jonathan Gaventa on behalf of E3G
Local Renewable Energy Groups
Mineral Products Association
Mrs Carole Sims
National Farmers' Union of England and Wales (NFU)
National Grid
National Nuclear Laboratory
Northern Ireland - Department Environment Trade and Investment
Ofgem
Oil and Gas UK
Oxford Brookes University
Prospect
Rail and Environmental consultancy
Renewable Energy Association
Renewable Energy Systems
Roger Hawkins
RSPB
RWE
Sandra Browne
Scottish Government
Shan Barclay
Shell
Solutran
Steve Browning
Sustainable Energy Association
Tessa Burrington
The British Ceramic Confederation (BCC)
TraderVick Limited
Travis Perkins PLC
TUC
UK Green Business Council
UKPIA
UKPLG
Ulster Farmers Union
University of Manchester
Walnut Bureau
Welsh Government
WolfeWare
WWF

Any references to MEPs reflect their status at the time of the Call for Evidence period.

Annex 4: List of stakeholders who attended bilateral and workshop discussions

Paul Gardiner	AB Sugar
Richard Stark	AB Sugar
Grant Holland	BOC Gases
Will Carter	BP
Ally Rae	BP North Sea
Andrew Mennear	BP plc
Linus Turner	Brunswick Group LLP
Holly Sims	Calor Gas Ltd
Theo Mitchell	Carbon Capture & Storage Association
Jeff Chapman	Carbon Capture & Storage Association
Stephen Tindale	Center for European Reform
Chris Beddoes	CONCAWE/EUROPIA
Phil Garner	Confederation of UK Coal Producers
Sue Young	ConocoPhillips
Heidi Ranscombe	Consumer Futures
Serafin Pazos-Vidal	Convention of Scottish Local Authorities (COSLA)
Steve Freeman	CPI – confederation of paper industries
Gary Hawkes	Dairy and Rural Enterprise
David Vincent	David Vincent & Associates Ltd
Birgitte Bay	DONG Energy Representative Office
Federico Cellurale	Downstream Fuel
Jonathan Gaventa	E3G
Chris Littlecott	E3G – Third Generation Environmentalism
Dr Martin Porter	Edelman Europe and CIS Public Affairs
Anurag Mall	EDF Energy
Nigel Knee	EDF Energy

Kevin Blanchard	EEF
Fergus McReynolds	EEF, the manufacturers' organisation
Vinay Talwar	Energy and Climate Change Committee
Jeremy Nicholson	Energy Intensive Users Group
Dr Barrie Shepherd	Energy Technology Partnership
Gwyn Dolben	Energy UK
Sofia Gkiousou	Energy UK
Gary Connolly	ESB Wind Development
Romain Pardo	Europe's Political Economy Programme
Natasha Madeira	European North Sea Energy Alliance (ENSEA) Energy Technology Partnership
Fiona Hall MEP	European Parliament
Elizabeth Trump	European Parliament
Gareth Goldsmith	European Parliament
Mark Johnston	European Policy Centre
Clara Lemaire	FleishmanHillard
Mr Andrew Ford,	FleishmanHillard
Iva Vacheva	FORATOM
Ric Lea	Gazprom Marketing & Trading Ltd
Nigel Holmes	GDF SUEZ E&P UK Ltd
Dr Raphael Sauter	Institute for European Environmental Policy (IEEP)
Rachel Bonfante	International Association of Oil & Gas Producers – OGP Europe
Keith Pearce	Magnox Limited
Claire Nelson	Mainstream Renewable Power
Dr Matt Huddleston	Met Office
James Jackson	Micropower Council
Dr Diana Casey	Mineral Products Association
John Prime	National Grid
Emmanuel Brutin	National Grid
Alan Chowney	Northern Ireland – Department Environment Trade and Investment
Annick Cable	Ofgem
Daniel Tattersall	Ofgem
David Petrie	Oil & Gas UK
Marshall Hall	Oil & Gas UK
Beverley Hall	Prospect
Michael Macdonald	Prospect

Garry Graham	Prospect Head Office
Mike Landy	Renewable Energy Association
Alex Coulton	RenewableUK
David Clubb	RenewableUK
Peter Lochbihler	Rolls-Royce International Limited
Emmanuelle Meunier	Royal Institute of British Architects
Emilia Plotka	Royal Institute of British Architects
Suzie Lukacova	RSPB
Alexa Morrison	RSPB
Penny Tomlinson	RWE npower
Kate Garth	RWE npower
Terry Ballard	RWEnpower
Karen Martín Pérez	Scotland Europa
Eric McRory	Scottish Environment Protection Agency
Zarina Naseem	Scottish Government
Mariëlla Smids	Scottish Government
Dr Linda Pooley	Scottish Government
Nigel Holmes	Scottish Hydrogen and Fuel Cell Association
Susan Shannon	Shell
Charlotte Gibson	Shell
Thomas Reilly	Shell
Joanna Alexander	Smartestenergy
David Stevens	SONI
Emma Hackland	SSE
Connor Powell	SSE
Marian Troy	SSE
Oriel Price	Swansea Bay Tidal Lagoon
Tim Figures	UKREP
Angela Kelly	Utility regulator
Sarah Brady	Utility regulator
Vicki Stevenson	Welsh Energy Sector Training (WEST) | Low Carbon Research Institute (LCRI)
Caitlin Davies	Welsh Government
Andrew Nicholas	Welsh Government
Hans Korteweg	Westinghouse Electric Company

Annex 5: Stakeholder Engagement Events

14 November 2013	London: Internal market, security of supply and EU – external energy relations
18 November 2013	London: General
20 November 2013	London: Renewable energy; carbon capture and storage
25 November 2013	London: General
29 November 2013	London: Energy Efficiency
3 December 2013	Brussels: General
6 December 2013	Glasgow: General
11 December 2013	London: Nuclear and Euratom
7 January 2014	Aberdeen: General
8 January 2014	Cardiff: General
9 January 2014	London: Emerging Themes
13 January 2014	Belfast: General
21 January 2014	London: Horizontal Interest Groups (HIGs)

Annex 6: Acronyms

Acronym	Name
ACE	(UK) Association for the Conservation of Energy
ACER	Agency for the Cooperation of Energy Regulators
BCC	British Ceramics Confederation
BIS	Department Business Innovation and Skills
bcm	Billion cubic metres
CCC	Climate Change Commission
CCGT	Combined Cycle Gas Turbine
CCS	Carbon Capture and Storage
CEER	Council European Energy Regulators
CER	Centre for European Reform
CHP	Combined Heat and Power
CIBSE	Chartered Institution of Building Services Engineers
CoalPro	Confederation of UK Coal Producers
CPI	Confederation of Paper Industries
CRC	Carbon Reduction Commitment Energy Efficiency Scheme
DECC	Department for Energy and Climate Change
DEFRA	Department for Environment, Food and Rural Affairs
DETI	Department Environment Trade and Investment in Northern Ireland
DG	Director General
EC	European Community
ECC	European Economic Community
ECJ	European Court of Justice
ECSC	European Coal and Steel Community
ED	Energy Directive
EDF	EDF Energy (Energy supply company)
EED	Energy Efficiency Directive

EEF	The Manufacturers' Organisation
EFSA	European Food Safety Authority
EIA	Energy Information Administration of the United States
EIIs	Energy Intensive Industries
EMR	Energy Market Reform
ENTSO-E	European Network of Transmission Operators for Electricity
ENTSO-G	European Network of Transmission Operators for Gas
ESA	Environmental Services Association
ETS	Emissions Trading System
EU	European Union
EU ETS	EU Emissions Trading System
EURATOM	European Atomic Energy Community
FDF	Food and Drink Federation
FiT	Feed in Tariff
FOE	Friends of the Earth
FQD	Fuel Quality Directive
FTE	Full-Time Equivalent
GB	Great Britain (excluding Northern Ireland)
GDP	Gross Domestic Product
GHG	Greenhouse Gas
GLA	Greater London Authority
GVA	Gross Value Added
IA	Impact Assessment
IAEA	International Atomic Energy Authority
ICE	Intercontinental Exchange
IEA	International Energy Agency
IEEP	Institute for European Environmental Policy
IME3	EU Third Energy Package
IRENA	International Renewable Energy Agency
ISLES	Irish-Scottish Links on Energy Study
LCPD	Large Combustion Plant Directive
LNG	Liquid Natural Gas
MEP	Member of the European Parliament
NBP	National Balancing Point
NFU	National Framers Union
NGOs	Non-Governmental Organisations
NILGA	The Northern Ireland Local Government Association
NNL	National Nuclear Laboratory
NRA	National Regulatory Authority

NSCOGI	North Seas Countries' Offshore Grid Initiative
OECD	Organisation for Economic Co-operation and Development
OSPAR	Oslo and Paris Convention
PCI	Projects of Common Interest
QMV	Qualified Majority Voting
R&D	Research and Development
REACH	Registration, Evaluation, Authorisation & restriction of CHemicals
REA	Renewable Energy Association
RED	Renewable Energy Directive
REMIT	Regulation on Wholesale Energy Market Integrity and Transparency
RES	Renewable Energy Systems
RSPB	Royal Society for the Protection of Birds
RWE	RWE Group (Energy supply company)
rWFD	revised Waste Framework Directive
SEEG	Senior European Experts Group
SET	Strategic Energy Technology
SSSI	Site of Special Scientific Interest
tcm	Trillion cubic metres
TEN	Trans Europe Energy
TEP	Third Energy Package
UK	United Kingdom
UK ETS	UK Emissions Trading System
UKELA	United Kingdom Environmental Law Association
UKPIA	Trade association representing petroleum refining and marketing industries in the UK
UKPLG	Trade association representing PLG companies in the UK
UN	United Nation
UNFCCC	United Nations Framework Convention on Climate Change
US	United States of America
USA	United States of America
UWWT	Urban Waste Water Treatment
UWWTD	Urban Waste Water Treatment Directive
WFD	Water Framework Directive
WT	The Wildlife Trusts
WTO	World Trade Organisation
WWF	World Wildlife Fund

Annex 7: Sources and Literature Used in the Report

The list contained in this annex is not exhaustive but lists some of the sources considered in preparing the report

UK Parliament Reports

House of Lords European Union Committee,
14th Report 14th Report of Session 2012–13
"No Country is an Energy Island: Securing Investment for the EU's Future"
Published 2 May 2013

House of Lords European Union Committee,
4th Report of Session 2009-10
Impact Assessments in the EU: room for improvement?
Report with evidence, published 9 March 2010

House of Lords European Union Committee,
5th Report of Session 2007–08
The Single Market: Wallflower or Dancing Partner?
Inquiry into the European Commission's Review of the Single Market
Chapter 5: Energy

European Commission

DG Energy ec.europa.eu/energy/index_en.htm

DG Environment: ec.europa.eu/environment/index_en.htm

Eurostat: epp.eurostat.ec.europa.eu/portal/page/portal/eurostat/home/

List of energy related documents cited by the Commission as of January 2014.

Legislative documents

1.1 GENERAL

Council Regulation (EU, Euratom) No 617/2010 of 24 June 2010 concerning the notification to the Commission of investment projects in energy infrastructure within the European Union and repealing Regulation (EC) No 736/96

Directive 94/22/EC of the European Parliament and of the Council of 30 May 1994 on the conditions for granting and using authorizations for the prospection, exploration and production of hydrocarbons

Regulation (EC) No 663/2009 of the European Parliament and of the Council of 13 July 2009 establishing a programme to aid economic recovery by granting Community financial assistance to projects in the field of energy

1.2 OIL

Council Regulation (EC) No 2964/95 of 20 December 1995 introducing registration for crude oil imports and deliveries in the Community

Council Directive 2009/119 of 14 September 2009 imposing an obligation on Member States to maintain minimum stocks of crude oil and/or petroleum products

Directive 2013/30/EU of the European Parliament and of the Council of 12 June 2013 on safety of offshore oil and gas operations and amending Directive 2004/35/EC (Text with EEA relevance)

1.3 GAS

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1.4 ELECTRICITY

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1.5 RENEWABLE ENERGY

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1.6 ENERGY EFFICIENCY

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1.7 NUCLEAR ENERGY

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Commission Regulation (Euratom) No 66/2006 of 16 January 2006 exempting the transfer of small quantities of ores, source materials and special fissile materials from the rules of the chapter on supplies

Council Directive 2009/71/Euratom of 25 June 2009 establishing a Community framework for the nuclear safety of nuclear installations

Council Directive 96/29/Euratom of 13 May 1996[1] laying down basic safety standards for the health protection of the general public and workers against the dangers of ionizing radiation (and corrigendum to it), repealing and replacing Council Directive 80/836/Euratom of 15 July 1980 and Council Directive 84/467/Euratom of 3 September 1984

Council Directive 90/641/Euratom of 4 December 1990 on the operational protection of outside workers exposed to the risk of ionizing radiation during their activities in controlled areas

Council Directive 97/43/Euratom of 30 June 1997 on health protection of individuals against the dangers of ionizing radiation in relation to medical exposure, and repealing Directive 84/466/Euratom

Council Directive 89/618/Euratom of 27 November 1989 on informing the general public about health protection measures to be applied and steps to be taken in the event of a radiological emergency
Commission Regulation (Euratom) No 770/90 of 29 March 1990 laying down maximum permitted levels of radioactive contamination of feeding stuffs following a nuclear accident or any other case of radiological emergency

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Commission Regulation (Euratom) No 944/89 of 12 April 1989 laying down maximum permitted levels of radioactive contamination in minor foodstuffs following a nuclear accident or any other case of radiological emergency

[1] Note: Council Directive 2013/59/Euratom of 5 December 2013 published in the OJ in January 2014 lays down basic safety standards for protection against the dangers arising from exposure to ionising radiation and repeals Directives 89/618/Euratom, 90/641/Euratom, 96/29/Euratom, 97/43/Euratom, and 2003/122/Euratom.

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2.3 RENEWABLE ENERGIES

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