

# Environment & Climate Regulation

*Contributing editors*

Carlos de Miguel Perales and Per Hemmer



2016

GETTING THE  
DEAL THROUGH

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DEAL THROUGH 

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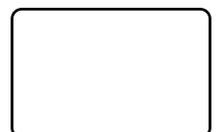


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# United Kingdom

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## Main climate regulations, policies and authorities

### 1 International agreements

#### Do any international agreements or regulations on climate matters apply in your country?

The legislative framework applicable to climate matters in the United Kingdom is multi-layered, ranging from the international to the regional. International and multinational agreements applicable to the UK flow from the UK's ratification of a number of conventions and protocols and from the UK's membership in the European Union.

At the international level, the United Nations Framework on Climate Change (UNFCCC) and the Kyoto Protocol have been ratified by the UK, on 8 December 1993 and 31 May 2002 respectively. The UNFCCC, which was adopted on 9 May 1992 and came into force on 21 March 1994, provides a non-binding commitment on countries to reduce greenhouse gas (GHG) emissions to 1990 levels by 2020 and also provides a framework for negotiating specific international treaties that may set binding limits on GHGs.

The Kyoto Protocol, born out of the UNFCCC, was negotiated by the parties to that Convention in 1995 (although it did not enter into force until 2005) and imposes legally binding obligations on the parties to achieve GHG reduction targets, while respecting the principle of 'common but differentiated responsibilities', placing a heavier burden on developed nations. The Protocol's first commitment period ran from 2008 to 2012 with the UK's limitation and reduction commitment being 8 per cent below GHG emissions in 1990. This commitment was adjusted in 2002, to 12.5 per cent below 1990 levels by the European Burden Sharing Agreement (Decision 2002/358/EC, which provides for the joint fulfilment by EU member states of their commitments under the Kyoto Protocol).

Following international climate negotiations during 2011 (in Durban, South Africa) and 2012 (in Doha, Qatar), 37 parties to the Protocol (including EU member states, Australia and New Zealand) agreed to a second commitment period between 2013 and 2020, with parties committing to reduce GHG emissions by at least 18 per cent below 1990 levels. All 195 participant parties agreed to negotiate a new climate change treaty by 2015, to come into force by 2020.

At a multinational level, as an EU member state, the UK is subject to EU climate change legislation, which includes the EU Emissions Directive (Directive 2003/87/EC, amended by Directives 2004/101/EC (permitting use of credits under the Kyoto Protocol, 2008/101/EC (dealing with the aviation sector) and 2009/29/EC (extending the period of the scheme)), the Renewable Energy Directive (Directive 2009/28/EC) and the Energy Efficiency Directive (Directive 2012/27/EU). These directives create a package that requires member states to:

- cap emissions and permit companies to trade allowances under the EU Emissions Trading Scheme (EU ETS);
- set renewable energy targets; and
- reduce energy consumption.

All member states are required to transpose the directives into domestic law.

The EU ETS came into operation in 2005 and is in its third trading period (2013–2020, as extended by Directive 2009/29/EC). The mandatory emissions trading scheme is applicable to specific installations in EU industry sectors that consume large quantities of energy (ie, power stations, refineries, iron, steel, cement and lime production, paper, food and

drink, glass and ceramics and engineering and manufacturing). A cap is set on the total amount of GHG that can be emitted by participating installations, with allowances allocated or auctioned and that can subsequently be traded. Installations are required to monitor and report on emissions, ensuring that they retire sufficient allowances to cover their emissions.

The most recent phase of the EU ETS is transposed into UK law through the Greenhouse Gas Emissions Trading Scheme Regulations 2012 (SI 2012/3038) (as amended), which came into force on 1 January 2013. These Regulations obligate the relevant UK installations to hold GHG permits and surrender such allowances as equate to their emissions, via the European Union Registry (which was established by the Commission under Commission Regulation 1193/2011).

The Renewable Energy Directive mandates levels of renewable energy use in the EU, requiring that 20 per cent of the energy consumed within the EU is renewable. This target is pooled among member states, with the UK's mandatory national target for 2020 set at 15 per cent. In addition, the Directive lays down rules relating to access to the electricity grid for energy from renewable sources and establishes sustainability criteria for biofuels and bioliquids.

The Renewable Energy Directive is transposed into UK law through a number of instruments, primarily:

- the Promotion of the Use of Energy from the Renewable Sources Regulations 2011 (SI 2011/242), which require that the Secretary of State ensures at least 15 per cent of the UK's energy comes from renewable sources by 2020;
- the Electricity (Guarantees of Origin of Electricity Produced from Renewable Energy Sources) Regulations 2003 (SI 2003/2562), as amended and, in particular, by the Electricity (Guarantees of Origin of Electricity Produced from Renewable Energy Sources) (Amendment) Regulations 2010 (SI 2010/2715), which extended the qualifying renewable energy sources to conform to the Directive and aligned units of measurement used; and
- the Road Transport Fuel Obligations Order 2007 (SI 2007/2032), as amended and, in particular, by the Road Transport Fuel Obligations (Amendment) Order (SI 2011/2937), which implements the transport elements of the Directive.

The Energy Efficiency Directive establishes a framework for the promotion of energy efficiency across member states to achieve the target of 20 per cent reduction in energy consumption between 2014 and 2020. The Directive aims to target energy consumption throughout all stages of the energy chain (from the transformation of energy and its distribution to its final consumption). Member states must set indicative national energy efficiency targets and achieve such targets by 2020.

The Energy Efficiency Directive is transposed into UK law through a number of different regulations, including:

- the Energy Savings Opportunity Scheme Regulations 2014 (SI 2014/1642) introducing the Energy Savings Opportunity Scheme, which requires larger companies to carry out mandatory energy saving assessments;
- the Energy Efficiency (Eligible Buildings) Regulations 2013 (SI 2013/3220), which requires an energy saving of 163.6 gigawatt hours across buildings owned or occupied by central government by 2020;
- Procurement Policy Note 07/14, supplemented by Procurement Policy Note 01/15, which requires public sector bodies to purchase energy efficient products, services and buildings; and

- the Energy Efficiency (Building Renovation and Reporting) Regulations 2014 (SI 2014/952), which sets out a strategy for stimulating investment in the renovation of residential and commercial buildings and provides the framework for the UK to report on progress towards meeting its national energy efficiency targets and the submission of the National Energy Efficiency Action Plan to the Commission every three years.

Looking forward, the EU proposes to introduce a framework in 2015 for reducing GHG emissions in the period from 2020 until 2030 to continue a trajectory towards a low carbon economy. In January 2014, the Commission proposed an EU-wide binding target for renewable energy of at least 27 per cent by 2030.

## 2 International regulations and national regulatory policies

### How are the regulatory policies of your country affected by international regulations on climate matters?

The UK's policies on climate change and subsequent regulations are greatly shaped by the international and EU framework. As set out in question 1, EU directives relating to reductions in GHG emissions (through trading schemes, emissions targets and renewable energy targets) must be transposed into member state and, therefore, UK law.

International Conventions and Protocols are reflected in UK national legislation, with binding GHG emissions targets set out in the Climate Change Act 2008. The UK has already set out its position for the UNFCCC negotiations in Paris 2015, stressing the importance of securing a global climate change agreement that commits all countries to making GHG emission reductions. National policies reflect both the broader international aims of reducing emissions and national concerns of security of supply, greater efficiency and innovation leading to economic growth, health and sustainability concerns and the provision of affordable energy to UK citizens.

## 3 Main national regulatory policies

### Outline recent government policy on climate matters.

The Department of Energy and Climate Change (DECC) is primarily responsible for administering climate change policy in the UK. Since the Carbon Plan, published in 2011, several discrete papers and policy statements have been published on various issues (such as the Heat Strategy (April 2012), the Bioenergy Strategy (April 2012), the Energy Efficiency Strategy (November 2012), the Gas Generation Strategy (December 2012), the Offshore Wind Industrial Strategy (August 2013), the Community Energy Strategy (January 2014) and the UK Solar Photovoltaic Strategy (October 2013 and April 2014)).

However, given the government's focus on the implementation of the Electricity Market Reform (see question 19) there have not been any revised holistic and government-wide plans for addressing climate change in the UK. Since the Conservative victory in the May 2015 general election there has already been significant retrenchment in support for climate change policy, including the early ending of some renewable energy support mechanisms, causing the European Commission to warn that the UK might miss its 2020 renewable energy targets.

## 4 Main national legislation

### Identify the main national laws and regulations on climate matters.

There is a complex framework of UK legislation and regulation governing energy and climate change matters. As set out in questions 1 and 2, EU legislation and international agreements play a large part in shaping UK legislation and regulation. At a domestic level, UK legislation focuses on both GHG emission reduction and energy efficiency (see below) and, renewable and low carbon energy (see question 19).

The Climate Change Act 2008 provides the overall framework for emissions reductions and energy efficiency, imposing the legally binding duty on the government to reduce the UK's GHG emissions by 80 per cent against the 1990 baseline by 2050 and facilitate the transition to a low carbon economy. The 80 per cent reduction is intended to be achieved by way of carbon budgets, which will set limits on the net UK carbon account, which is divided into five-year periods, beginning with 2008-2012. The first three carbon budgets were set in 2009 under the Carbon Budgets Order 2009 (SI 2009/1259). The budgets run from 2008-2012, 2013-2017 and 2018-2022. The fourth carbon budget for 2023-2027 was introduced by the Carbon Budgets Order 2011 (SI 2011/1603) and came into force on 30 June 2011.

The Climate Change Act also gives the government the power to introduce new national emissions trading schemes to help it meet its emission reduction targets. By way of delegated legislation, the Carbon Reduction Commitment (CRC) Energy Efficiency Scheme was introduced in April 2010. Under the latest Order, the CRC Energy Efficiency Scheme Order 2013 (SI 2013/1119) (as amended), the CRC Energy Efficiency Scheme applies to large private and public organisations that are not energy-intensive (such as large offices, retailers and local authorities), energy-intensive consumers being covered already by the EU ETS.

Much like the EU ETS, the CRC Energy Efficiency Scheme requires participants to report on their energy emissions and to purchase and surrender allowances equivalent to such emissions (see further question 9). The obligation to report on GHG emissions has been extended through powers under the Climate Change Act to a wider range of companies (ie, those with lower energy consumption) through the Companies Act 2006 (Strategic Report and Directors' Report) Regulations 2013 (SI 2013/1970), which requires directors of companies (other than small companies) to provide details of GHG emissions in directors' reports.

Another key cornerstone of UK climate change regulation is the Climate Change Levy (CCL), introduced under the Finance Act 2000, (which came into force on 1 April 2001 under the Climate Change Levy (General) Regulations 2001 (SI 2001/838)). The levy taxes energy use (taxable supplies or taxable commodities) in industry, commerce and the public sector. CCL rates increase in line with the retail price index. Certain reliefs are granted to energy intensive industries by way of climate change agreements. Such agreements permit eligible industries to claim up to a 90 per cent discount from the CCL provided they meet targets for improving their energy efficiency or reducing their carbon emissions. The CCA scheme has been extended from 1 April 2013 until 2023 (under the Climate Change Agreements (Eligible Facilities) Regulations 2012 (SI 2012/2999)).

Since 1 April 2013, as part of the Electricity Market Reform (see question 19), a new carbon price support (CPS) rate of CCL has been applied to tax fossil fuels used for electricity generation, therefore putting a price on CO<sub>2</sub> emissions, increasing the price of fossil fuelled generation and, consequently, supporting low carbon generation. The carbon price floor will be a maximum of £18 until 2019.

Shortly after the Conservative win in the May 2015 general election, however, HM Revenue & Customs published a policy paper entitled 'Climate Change Levy: removal of exemption for electricity from renewable sources' (8 July 2015). Under this paper, the government announced that it was withdrawing levy exemption certificates (LECs) with immediate effect. Prior to the announcement, eligible renewable energy generators were entitled to be exempted from the imposition of CCL, confirmed by the issue of LECs, which they could sell. From 1 July 2015, new LECs can no longer be created, effectively reducing the value of renewable electricity generator output by around 5-6 per cent.

The Energy Act 2011 also introduced additional elements of the climate change regulatory framework. The 'Green Deal' came into force in October 2012 (under the Green Deal Framework (Disclosure, Acknowledgment, Redress, etc) Regulations 2012 (SI 2012/2079)), with customers able to sign up to a Green Deal finance plan from 28 January 2013. The scheme creates a new 'pay as you save' financing mechanism, which allows customers of domestic and non-domestic properties to install a range of energy efficiency measures at no upfront cost (the liability to repay the Green Deal financing, attaching to and being repaid through the property's electricity bill). However, since the Conservative win in the May 2015 general election, the government announced in July 2015 that it was withdrawing further support from the Green Deal Finance Company (to date, the only loan provider under the Green Deal mechanism), throwing the future of the Green Deal into doubt.

The Energy Act 2011 also introduced a framework for the introduction of minimum energy efficiency requirements for the private rented sector, imposes obligations on energy companies through the 'Energy Companies Obligation' to install energy efficiency measures in lower income and vulnerable households and domestic properties that do not meet the financing requirements under the Green Deal, and provides the framework for the role out of 'smart meters'. Implementing elements of the Energy Act, the Energy Efficiency (Private Rented Property) (England and Wales) Regulations 2015 (SI 2015/962) come into force in 2016 and will:

- enable tenants of domestic private rented property to request their landlord's consent to them making energy efficiency improvements to the property and impose a duty on the landlord not to unreasonably refuse consent; and

- prescribe a minimum level of energy efficiency and that where the energy performance of a property falls below that level (subject to exemptions) a landlord may not grant a new tenancy or renew an existing tenancy of a private rented property after 1 April 2018, continue to let a domestic private rented property after 1 April 2020 or continue to let a non-domestic private rented property after 1 April 2023.

**5 National regulatory authorities**

**Identify the national regulatory authorities responsible for climate regulation and its implementation and administration.**

**Outline their areas of competence.**

The Department of Energy and Climate Change (DECC) is the government department primarily responsible for climate change and energy supply in the UK. It was created in 2008 alongside the introduction of the Climate Change Act, bringing together much of the Climate Change Group that was previously housed in the Department for Environment, Food and Rural Affairs and what was the Department for Business Enterprise and Regulatory Reform.

Alongside the DECC, the Committee on Climate Change (CCC) was established directly under the Climate Change Act to provide independent advice to the government on how best to achieve its carbon targets and on how to set such targets. The Department for Environment, Food and Rural Affairs (Defra) is responsible for domestic climate change adaptation policies.

Other regulatory bodies include the Environment Agency, which has responsibility for administering the UK-based party participation in projects under the UNFCCC Kyoto Protocol (ie, clean development mechanisms and joint implementation projects).

Regional bodies govern the CRC Energy Efficiency Scheme, EU ETS and other schemes, which are implemented on a devolved basis. These include the Environment Agency for England, Natural Resources Wales for Wales, the Scottish Environment Protection Agency for Scotland, the Chief Inspector and the Northern Ireland Environment Agency for Ireland and, in respect of offshore installations, the DECC.

**General national climate matters**

**6 National emissions and limits**

**What are the main sources of emissions of greenhouse gases (GHG) (or other regulated emissions) in your country and the quantities of emissions from those sources? Describe any limitation or reduction obligations. Do they apply to private parties in your country?**

The DECC publishes national emissions figures on an annual basis under the Kyoto Protocol obligations (and obligations set domestically under the Climate Change Act). Final figures for 2012 and 2013 emissions were published in March 2015. The figures confirm that the UK has achieved its first national carbon budget under the Climate Change Act and its target GHG emissions reductions under the Kyoto Protocol up to 2012.

**Sources of GHG emissions, UK and Crown dependencies, 1990–2013 (final)**

	MtCO <sub>2</sub> e						
	1990	1995	2000	2005	2010	2012	2013
Energy supply	278.8	238.8	221.5	231.4	206.7	203.5	189.7
Transport	121.7	122.2	126.8	130.7	120.3	118.0	116.8
Business	115.4	113.7	117.2	109.5	94.4	88.4	90.9
Residential	80.6	81.9	89.0	86.0	87.8	77.3	77.6
Agriculture	66.0	65.1	61.4	57.3	54.6	54.0	53.7
Waste management	69.3	71.5	66.8	53.0	31.5	26.3	22.6
Industrial process	60.0	50.9	27.2	20.4	12.5	10.5	12.8
Public	13.5	13.3	12.1	11.2	9.8	9.3	9.5
LULUCF	4.0	3.3	0.8	-2.9	-4.3	-5.0	-5.3
Total	809.4	760.6	722.8	696.6	613.3	582.2	568.3

Figures included represent emissions within the UK and its Crown dependencies (Jersey, Guernsey and the Isle of Man). Source: Department of Climate Change & Energy, '2013 UK Greenhouse Gas Emissions, Final Figures' (3 February 2015).

The obligations to reduce emissions flow from a number of international, multinational and domestic measures as set out in question 1. In summary, the Kyoto Protocol requires a reduction in emissions of 12.5 per cent below 1990 levels by 2012 and 18 per cent by 2020, the EU targets require a reduction of 20 per cent below 1990 levels by 2020 (and a proposal for a 27 per cent reduction by 2030) and domestic targets set under the Climate Change Act, requiring a reduction of 34 per cent by 2020 and aim ultimately for a reduction of 80 per cent by 2050.

The schemes that have been set in place to achieve these targets include (see question 1) are, principally, the EU ETS, the CRC Energy Efficiency Scheme, the Carbon Floor Price, various energy efficiency measures (such as ECO and the Green Deal) and the incentivisation of low carbon and renewable energy (see question 19). Generally, each of these policies apply both to public and private sector, albeit with certain differences in their application.

**7 National GHG emission projects**

**Describe any major GHG emission reduction projects implemented or to be implemented in your country.**

**Describe any similar projects in other countries involving the participation of government authorities or private parties from your country.**

The UK participates in the EU ETS and has implemented the European Industrial Emissions Directive (Directive 2010/75/EU) (as amended) (IED) and its predecessors. As such, most major point-source emissions of carbon dioxide and other GHGs are regulated. Credible GHG emissions reduction units or equivalent instruments generally only credit action that is additional to reductions required by regulation. In the EU, the requirement to deploy 'best available techniques' for emissions control at installations under the IED should mean that there is little or no scope to create additional reduction credits.

On a national scale, the DECC is in the process of developing frameworks and demonstration projects for carbon capture and storage, which will sequester carbon in a way that can be recognised under the EU ETS (see question 25).

On an international scale, the Kyoto Protocol provides 'flexibility mechanisms' that parties can use to meet their emission limitation commitments. These are: intentional emissions trading (EU ETS at a European level, which restricts emissions, rather than 'producing' emissions reductions) and joint implementation (JI) and clean development mechanism (CDM) (mechanisms that allow a country with an emissions reduction or limitation commitment to produce or earn emission reduction credits: emissions reduction units (ERUs) and certified emissions reductions (CERS) respectively).

Since June 2011, the Environment Agency in the UK has served as the designated focal point for JI and issues letters of approval for voluntary participation in the scheme. The UK government does not approve JI projects hosted in the UK but can issue letters of approval to companies wishing to participate in JI projects overseas. In respect of CDM, the Environment Agency is the UK's designated national authority and issues letters of approval for voluntary participation in the scheme.

**Domestic climate sector**

**8 Domestic climate sector**

**Describe the main commercial aspects of the climate sector in your country, including any related government policies.**

The common misconception is to focus on emissions trading, but to describe the sector correctly is to describe a very much broader range of activity. The UK has a mature and complex mix of climate change policy measures affecting virtually all sectors of the economy.

Broadly, this can be described as:

- emissions trading policy – primarily (but by no means exclusively) UK participation in the EU ETS affecting around 1,000 of the largest CO<sub>2</sub> emitters and the CRC Energy Efficiency Scheme affecting the larger (non-energy intensive) energy consumers (as further described in questions 1 and 9);

- emissions taxation policy – primarily (but, again, by no means exclusively), the CCL and associated components, such as CCL relief for achieving emissions reduction targets under the new climate change agreements (CCAs), and the CPS mechanism (where, in policy justification, if not necessarily genuine government intent, taxation on input fuels to electricity generation is being used to provide a ‘top up’ to the price of carbon allowances under the EU ETS). The CCL is levied on most business users of electricity and gas, while the CPS is levied on input fuels burned by conventional electricity generators;
- carbon disclosure and reporting obligations – primarily corporate reporting of carbon emissions under the Climate Change Act 2008 and Companies Act 2006, the new Energy Efficiency Directive and disclosure of building energy performance through Energy Performance Certificates and Display Energy Certificates; and
- low carbon and renewable energy investment incentives – primarily, the renewable energy feed-in tariff (FIT), the renewables obligation (RO) and contracts for difference (CfD) (as described further in question 19).

While these distinctions are drawn, they are far from clear-cut. For example, the CRC Energy Efficiency Scheme is an emissions trading scheme but acts like a complex tax, while the CCL is a tax instrument but, under new CCAs, provides for trading. Similarly, the proponents of corporate carbon reporting fought a long battle, but the scope of the mandatory reporting adopted under the Companies Act is relatively limited. The CRC Energy Efficiency Scheme has much wider capture on a carbon reporting and the Energy Efficiency Directive broadens this further still.

## General GHG emissions regulation

### 9 Regulation of emissions

**Do any obligations for GHG emission limitation, reduction or removal apply to your country and private parties in your country? If so, describe the main obligations.**

The UK, as an EU member state, is subject to the Montreal Protocol (limiting emissions of a number of ozone-depleting gases, which are also some of the worst GHGs, the United Nation’s Framework Convention on Climate Change and its Kyoto Protocol (setting binding limits on GHG emissions and creating the framework for emissions trading) and much of the rest of EU and the UK’s climate change policy as set out further in question 1.

The UK government also set itself ambitious emissions reduction targets, including to reduce emissions from 1990 levels by 80 per cent by 2050 with the introduction of the Climate Change Act in 2008.

Greenhouse gases other than CO<sub>2</sub> are regulated primarily under the combined Environment Permit, which implements a number of EU emissions control directives but, of most relevance, the Industrial Emissions Directive (2010/75/EU). This consolidated several earlier directives. Environment Permits were introduced under the Environmental Permitting (England and Wales) Regulations 2010 (SI 2010/675) (subsequently amended). These regulations came into force on 6 April 2010 and apply to England and Wales only, removing earlier separation between permits. Operators of regulated facilities must use ‘best available techniques’ to prevent or, where this is not possible, to limit relevant emissions to air, water, land and the environment.

However, there are only three principal laws in the UK that require CO<sub>2</sub> limitation, reduction or removal. Many more laws tackle climate change through providing incentives for emissions reduction or production of energy through cleaner means.

The first is the EU Emissions Trading Scheme. It is of the nature of the design of this ‘cap and trade’ scheme that the cap applies to limit the number of emissions allowances available within the EU ETS as a whole. Subject to that total scheme cap, individual participants are free to emit as much as they please as long as they surrender a sufficient number of allowances to offset their verified emissions. They are free to buy and sell allowances, with the price of allowances versus the opportunity cost of using them or the alternative cost of abatement, being among the factors that they will take into account when deciding whether to emit or not. But for the fact that so many emission sources are outside the EU ETS, and so many other policies overlap and distort the market, the scheme is an extremely efficient vehicle for finding the lowest cost abatement.

By contrast, the other main trading scheme applicable in the UK, the CRC Energy Efficiency Scheme, does not require emissions reductions.

By virtue of the scheme’s design, a cap on scheme emissions could not be introduced as intended. The capture of participants and emissions is too flexible. Rather than being based purely on physical assets, it is instead based on contractual responsibilities that may sometimes require complex analysis and can change mid-compliance year. Consequently, the CRC Energy Efficiency Scheme merely imposes an additional cost on the consumption of electricity and gas, like a carbon tax but, instead, through the obligation to buy and surrender allowances to offset emissions. The two key successes of the scheme are considered to be revenue raising for the government and raising awareness of energy issues in sectors of the economy that were previously ignoring them.

The second measure is the RO (see further question 19). This legislation requires licensed suppliers of electricity to source a certain percentage of the electricity they sell from renewable sources (or to pay a ‘buy out’ penalty). This displacement of electricity generated in thermal (generally fossil fuelled) power stations by electricity generated from renewable resources serves as a legal obligation imposed on licensed electricity suppliers to reduce the carbon intensity of the grid mix of electricity generation sources. However, the RO will be closed to new projects from 31 March 2017 and, following the Conservative party victory in the May 2015 general election, has been closed early by the government for solar projects over 5MW since April 2015, solar projects under 5MW from April 2016 and onshore wind from April 2016. The continuing feed-in tariff and contract for difference (see question 19) do not contain any equivalent compulsion on electricity suppliers, but at the time of writing (September 2015), is also subject to a government consultation threatening early closure.

The third measure is the Renewable Transport Fuels Obligation Order 2007 (RTFO). This legislation was conceived to operate in a similar fashion to the RO. By imposing an obligation on suppliers of motor fuel to source a certain percentage of the volume of motor fuel supplied to customer from renewable sources, the RTFO is a legal obligation to reduce the carbon intensity of motor fuels. The RTFO is described further in question 24.

### 10 GHG emission permits or approvals

**Are there any requirements for obtaining GHG emission permits or approvals? If so, describe the main requirements.**

For GHGs other than CO<sub>2</sub>, which are regulated under the Industrial Emissions Directive, an emissions permit must be obtained under the Environmental Permitting (England and Wales) Regulations 2010 (SI 2010/675) (as amended). A full environmental permit requires the operator to demonstrate sufficient technical competence and financial standing among other things.

For installations caught by the EU ETS, regulating CO<sub>2</sub>, the requirements to obtain a GHG permit are far less onerous than those applying for an environment permit. The key permit obligations are to monitor and report emissions and to buy and surrender a sufficient number of allowances to offset emissions.

The CRC Energy Efficiency Scheme does not require emitters to apply for or hold any emissions permit.

### 11 Oversight of GHG emissions

**How are GHG emissions monitored, reported and verified?**

Emissions reporting is required under a number of instruments, in particular:

- the EU ETS, on a mandatory basis, requires continuous monitoring of emissions, annual reporting and all potentially subject to audit and independent verification;
- the CRC Energy Efficiency Scheme, on a mandatory basis applies ‘light touch’ monitoring and reporting, leaving most of it to the individual, but with periodic audit of company records by the regulator;
- the Energy Savings Opportunity Scheme (see further question 17), requiring energy auditing, identification of energy-saving opportunities and compliance reporting;
- the Companies Act, which requires mandatory emissions reporting for UK-listed companies; and
- climate change agreements (entered into on a voluntary basis), under which participants are required to report emissions annually in order to obtain relief from the CCL.

**GHG emission allowances (or similar emission instruments)****12 Regime**

**Is there an GHG emission allowance regime (or similar regime) in your country? How does it operate?**

There are two main schemes: the EU ETS (see questions 1 and 9) and the CRC Energy Efficiency Scheme (see questions 4, 9 and 14). There is also now an element of trading re-introduced into CCAs (see question 8).

**13 Registration**

**Are there any GHG emission allowance registries in your country? How are they administered?**

There are registries for the two main emissions trading schemes: the EU ETS and the CRC Energy Efficiency Scheme.

**The EU ETS Registry**

This is administered by the European Commission. A central European registry now covers all 31 member states and replaces the earlier individual country and a number of joint country registries. Similarly, the European Union Transaction Log has replaced the earlier Community Independent Transaction Log. The EU Registry records:

- each member state's national implementation measures (the list of installations covered by the EU ETS in each member state);
- account holders' accounts (open to regulated emitters and others);
- allowance transfers;
- annual verified emissions from regulated installations;
- annual reconciliation between allowances and verified emissions; and
- surrender of allowances.

Access is online after identity verification and entry into the registry terms and conditions of use: <https://ets-registry.webgate.ec.europa.eu/euregistry/GB/index.xhtml>.

**The CRC Energy Efficiency Scheme Registry**

This is administered by the environmental regulator for England and Wales, the Environment Agency on behalf of itself and the other UK environment regulators (the Scottish Environmental Protection Agency, Natural Resources Wales and the Northern Ireland Environment Agency). The registry is used for issuance, trading and surrender of CRC Energy Efficiency Scheme allowances.

Access is online after identity verification and entry into the registry terms and conditions of use: <https://crc.environment-agency.gov.uk/crcregistry/web/login?execution=e1s1>.

**14 Obtaining, possessing and using GHG emission allowances**

**What are the requirements for obtaining GHG emission allowances? How are allowances held, cancelled, surrendered and transferred? Can rights in favour of third parties (eg, a pledge) be created on allowances?**

The rules differ between the two main emissions trading schemes.

**The EU ETS**

The EU is moving towards full auctioning of allowances. From the start of the current phase (Phase III), the non-power sector received roughly half of its predicted consumption. The power sector receives no free allocation. Meanwhile, energy-intensive industries subject to significant 'carbon leakage' (relevant manufacturing leaving the EU to find a less onerous location to set up business) receive a proportionate free allocation.

**The CRC Energy Efficiency Scheme**

There are no free issues of emissions allowances. Allowances can be bought:

- at the end of each compliance year, in the government's 'buy-to-comply' sale;
- at the beginning of each compliance year, in the government's sale (at a lower price than at the end of year); and
- at any point during each compliance year from another participant.

Allowances can only be bought in either of the government's sales by CRC Energy Efficiency Scheme participants but non-participants may also hold an account in the registry.

**Trading of GHG emission allowances (or similar emission instruments)****15 Emission allowances trading**

**What GHG emission trading systems or schemes are applied in your country?**

Two main schemes apply in the UK: the EU ETS and the CRC Energy Efficiency Scheme – see above. There is also an element of emissions trading re-introduced into CCAs (see question 8).

**16 Trading agreements**

**Are any standard agreements on GHG emissions trading used in your country? If so, describe their main features and provisions.**

Standard forms exist for use internationally. These include contract forms from:

- the International Emissions Trading Association (IETA) Master Trading Agreement for Emissions Allowances (version 3). This is freely accessible from the IETA website: [www.ieta.org/assets/TradingDocs/uk-1597905-v1-ieta\\_etma\\_v3\\_o\\_-\\_master\\_agreement\\_and\\_sched.pdf](http://www.ieta.org/assets/TradingDocs/uk-1597905-v1-ieta_etma_v3_o_-_master_agreement_and_sched.pdf);
- the International Swaps and Derivatives Association (ISDA) EU Emissions Trading Schedule (Part 6) to their Master Trading Agreement (version 4 (including options) and version 2.5 (not including options) are adapted for Phase 2 delivery). These are accessible from the ISDA's website: [www.isda.org/c\\_and\\_a/comm\\_der.html#emeuro](http://www.isda.org/c_and_a/comm_der.html#emeuro); and
- the European Federation of Energy Traders (EFET) CO<sub>2</sub> Annexes to their Electricity (version 4) and their gas (version 3) trading contracts. These are freely accessible from the EFET website: [www.efet.org/Standardisation/Legal-EFET-Standard-Contracts-and-Documentation/Appendices-And-annexes/CO2-Allowances](http://www.efet.org/Standardisation/Legal-EFET-Standard-Contracts-and-Documentation/Appendices-And-annexes/CO2-Allowances).

**Sectoral regulation****17 Energy production, use and efficiency**

**Give details of (non-renewable) energy production and consumption in your country. Describe any regulations on GHG emissions. Describe any obligations on the state and private persons for minimising energy use and improving efficiency. Describe the main features of any scheme for registration of energy savings and for trade of related accounting units or credits.**

The UK's total domestic primary energy production in 2014 is set out in Chart 1.2 in the DECC's Digest of UK Energy Statistics 2015, available at: [www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/447628/DUKES\\_2015\\_Chapter\\_1.pdf](http://www.gov.uk/government/uploads/system/uploads/attachment_data/file/447628/DUKES_2015_Chapter_1.pdf).

The DECC's '2013 UK Greenhouse Gas Emissions, Final Figures', Figure 4, sets out the fuel used for UK electricity generation, UK and Crown Dependencies from 1990 to 2013 (see [www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/407432/20150203\\_2013\\_Final\\_Emissions\\_statistics.pdf](http://www.gov.uk/government/uploads/system/uploads/attachment_data/file/407432/20150203_2013_Final_Emissions_statistics.pdf)).

A summary of the principal regulations on emissions is set out in question 18.

Approximately 40 per cent of the UK's energy is consumed in buildings. A number of measures at EU and national level have been introduced to reduce energy use and carbon emissions from buildings.

All EU member states must follow the Energy Performance of Buildings Directive (EPBD) (first published 2002), which required all EU member states to enhance their building regulations and to introduce energy certification schemes for buildings and inspections of air conditioning systems, as well as provide advice on boiler efficiency. The requirements of the EPBD were introduced into the UK on a phased basis in 2007. The EPBD was substantially recast in 2010, with new rules introduced in the UK in 2013. The EPBD essentially requires all new buildings

to be 'nearly zero carbon buildings' by 2021. The EPBD has been mainly implemented in the UK through amendments to the Building Regulations 2000 (2000/2531).

The 20-20-20 EU climate and energy package introduced in 2009 contains measures to reduce GHG emissions in the EU by 20 per cent (see question 2), increase energy consumption produced from renewable resources by 20 per cent and achieve a 20 per cent improvement in the EU's energy efficiency.

The Energy Efficiency Directive (EED) came into force on 14 November 2012. The EED implements the Energy Efficiency Plan. It requires member states to introduce a framework of measures for promoting energy efficiency in order to achieve the EU's 20 per cent headline target on energy efficiency. The EED was transposed into national legislation on 5 June 2014. Implementing article 8 of the EED, the Energy Savings Opportunity Scheme Regulations 2014 (SI 2014/1643) (ESOS) require larger companies and non-public sector organisations in the UK to carry out mandatory energy-saving assessments. It requires participants to calculate their total energy consumption, carry out energy audits, identify where energy savings can be made and provide certain information about compliance to the scheme administrator. ESOS came into force July 2014 and requires the first compliance confirmations to be provided by 5 December 2015.

In the UK, the Energy Act 2011 introduced the 'Green Deal', a scheme that began on 28 January 2013, whereby householders, private landlords and businesses are encouraged to make energy-saving improvements by providing financing upfront, which would then be paid for by energy bill savings. Other measures introduced in the UK to enable the UK to meet its targets include:

- a requirement on local planning authorities to ensure new developments are energy efficient;
- a requirement (from 2016) that all new homes be zero carbon; and
- introduction of the Code for Sustainable Homes.

The UK has also signed up to the EU Renewable Directive, which includes a target of 15 per cent of energy from renewables by 2020. This will require significant decarbonisation of the national electricity grid. See question 1 for more detail.

The government has identified heat networks (district heating) as having an important role to play in the transition to a low carbon economy. Heat makes up nearly 50 per cent of the final energy consumption in the UK and contributes around 30 per cent of the UK's GHG emissions. The government is supporting the deployment of heat networks through a number of actions. See question 19 for more detail.

## 18 Other sectors

### Describe, in general terms, any regulation on GHG emissions in connection with other sectors.

The Environmental Permitting Regulations 2010 establish the framework for regulating a wide range of industrial activities, including energy-related activities of refining, combustion and gasification and other activities such as those in the metals, minerals, chemicals, waste processing, paper and pulp, printing, textiles and dyeing, timber and agricultural sectors. Annex 1 to the EU ETS Directive provides a list of activities that require emission allowances for compliance purposes, including activities in relation to oil, gas, metal and mineral production, other industrial processes producing GHGs and wood pulp and paper production. The aviation sector was included in the EU ETS from 1 January 2012, though its inclusion was later suspended.

The regulated 'installations' must apply for a permit. Larger industrial installations are subject to integrated controls upon all likely significant emissions and are regulated by the Environment Agency. Smaller installations are subject to controls on emissions and air and are regulated by the relevant local authority. Permits will include conditions aimed at minimising pollution based on the concept of 'best available techniques'. These conditions will be consistent with government guidance and standards relevant to the industry sector concerned and will reflect local circumstances.

During 2013, Defra published over 40 revised guidance notes for local authority regulated industries, including the Secretary of State's view on what constitutes 'best available techniques' for each of the main sectors regulated to control their air emissions.

## Renewable energy and carbon capture

### 19 Renewable energy consumption, policy and general regulation

**Give details of the production and consumption of renewable energy in your country. What is the policy on renewable energy? Describe any obligations on the state and private parties for renewable energy production or use. Describe the main provisions of any scheme for registration of renewable energy production and use and for trade of related accounting units or credits.**

Electricity generated from renewable sources in the UK increased by 21 per cent between 2014 and 2013, to reach 64.7TWh and accounted for 19.1 per cent of total UK electricity generation, up 4.2 per cent from 2013. In capacity terms, onshore wind was the leading technology at the end of 2014, accounting for 35 per cent of capacity, followed by solar photovoltaics (22 per cent), offshore wind (18 per cent), and hydro (7 per cent). Bioenergy represented 18.4 per cent of capacity, with the main components being plant biomass (9.1 per cent) and landfill gas (4.3 per cent) (see *DECC Digest of UK Energy Statistics 2015*, published on 31 July 2014).

As set out in question 1, the Renewable Energy Directive 2009/28/EC provides the EU framework for UK renewable energy policy, requiring that at least 15 per cent of the UK's energy comes from renewable sources by 2020. This Directive has been transposed into UK law through the Promotion of the Use of Energy from the Use of Energy from Renewable Sources Regulations 2011 (SI 2011/242).

The present UK-based regime that governs the promotion of commercial scale renewable energy is the RO, which was established under the Renewables Obligation Order 2009 (SI 2009/785) (as amended in 2010, 2011, 2012 and 2013 and as first established in Scotland under the Renewables Obligation Order 2006 (SI 2006/1004) and in Northern Ireland under the Renewables Obligation Order (Northern Ireland) 2006 (SI 2006/56)).

The RO has two elements: a 'pull-through' mechanism, which requires that licensed electricity suppliers source a percentage of electricity from renewable sources, evidenced by the submission of renewable obligation certificates (ROCs) to Ofgem and a support mechanism under which Ofgem issues ROCs to accredited electricity generators, relating to the quantity of eligible renewable electricity they generate. ROCs are banded according to different technology types (largely based on maturity of technologies). Support offered under the scheme is as follows:

Band	2009 banding support (ROC/MWh)	13/14 support (ROC/MWh)	14/15 support (ROC/MWh)	15/16 support (ROC/MWh)	16/17 support (ROC/MWh)
Anaerobic digestion	2	2	2	1.9	1.8
Advanced gasification/pyrolysis	2	2	2	1.9	1.8
Standard gasification/pyrolysis	1	2	2	1.9	1.8
Biomass conversion (station or unit)	New band	1	1	1	1
Dedicated biomass <sup>1</sup>	1.5	1.5			1.4
Dedicated biomass with CHP <sup>2</sup>	2	2	2	1.9	1.8
Energy from waste with CHP	1	1	1	1	1
Onshore wind	1	0.9	0.9	0.9	-
Offshore wind	2	2	2	1.9	1.8
Solar PV - building mounted (below 5MW)	2	1.7	1.6	1.5	-
Solar PV - building mounted (above 5MW)	2	1.7	1.6	-	-

Band	2009 banding support (ROC/ MWh)	13/14 support (ROC/ MWh)	14/15 support (ROC/ MWh)	15/16 support (ROC/ MWh)	16/17 support (ROC/ MWh)
Solar PV – ground mounted (below 5MW)	2	1.6	1.4	1.3	-
Solar PV – ground mounted (above 5MW)	2	1.6	1.4	-	-
Tidal stream <sup>3</sup>	24	5	5	5	5
Waves <sup>5</sup>	26	5	5	5	5
<p>1 Dedicated biomass subject to a 400MW cap in England and Wales and 15MW cap in Scotland.</p> <p>2 Includes 0.5 ROC CHP uplift.</p> <p>3 Tidal stream: five ROCs subject to 30MW cap at each generating station. Two ROCs for any additional capacity added above 30MW cap.</p> <p>4 Tidal stream: three ROCs in Scotland only.</p> <p>5 Wave: five ROCs subject to 30MW cap at each generating station. Two ROCs for any additional capacity added above 30MW cap.</p> <p>6 Wave: five ROCs in Scotland only.</p>					

Suppliers have the option of obtaining ROCs with the purchase of renewable energy, purchasing ROCs from other suppliers (as they are freely tradeable), or paying the penalty 'buy-out price' if they fail to source sufficient numbers of ROCs. The buy-out price for ROCs is £43.30 for the year 2014-2015.

The RO scheme is gradually being phased out in favour of CfDs under the Electricity Market Reform, with the scheme being closed to new generation on 31 March 2017, albeit that those generators already registered under the scheme will receive the full support for 20 years. In order to avoid market volatility in the final years of the scheme, the DECC will fix the price for the remaining 10 years for the RO at its long-term value and buy the ROCs directly from the generators. However, the RO will be closed to new projects from 31 March 2017 and, following the Conservative party victory in the May 2015 general election, has been closed early by the government for solar projects over 5MW since April 2015, solar projects under 5MW from April 2016 and onshore wind from April 2016.

CfDs have been introduced under the Energy Act 2013 (and associated delegated legislation) to replace the support for commercial scale renewable energy from 2017. There is a phased introduction of the scheme, with generators able to choose between ROCs and CfDs in the period between the end of 2014 and 2017. In April 2014, the DECC published the CfD terms and conditions, which set out the full set of contractual terms that will apply to projects benefiting under the scheme, accompanied by the CfD agreement, which will set out project-specific information (generator details, technology type, strike price, etc). Together, the CfD terms and conditions and the CfD agreement comprise the terms that will be offered by the Low Carbon Contracts Company (the government-backed CfD counterparty) to a generator, following the successful allocation of a CfD. The CfD operates by way of fixing a price for low carbon and renewable electricity production, known as the 'strike price'. Below the strike price, the generator receives a top-up payment from LCCC above the strike price and the generator must pay back the difference. To prevent a hiatus in investment before the CfD is completely implemented, the government has introduced 'investment contracts', which have, during 2014, been awarded to five offshore wind farms, two coal to biomass conversions and a dedicated biomass plant with CHP.

The UK regimes supporting smaller-scale projects have been introduced under powers granted by the Energy Act 2008 and are the FIT established by the Feed-in Tariffs (Specified Maximum Capacity and Functions) Order 2010 (SI 2010/678) (as amended in 2011 and 2012) and by modifications to standard licence conditions of electricity supply licences, together with the Renewable Heat Incentive Scheme (RHI) established under the Renewable Heat Incentive (Amendment to the Energy Act 2008) Regulations 2011 (SI 2011/2195) and the Renewable Heat Incentive Scheme Regulations 2011 (SI 2011/2860).

The FIT supports accredited small-scale renewable electricity generators (generally under 5MW) by way of a generation tariff and an export tariff, paid by electricity suppliers to generators for a period of 20 years. The

RHI supports domestic (from 2014) and non-domestic (from 2011) eligible renewable heat technology, like the FIT, by way of a generation tariff, paid for a period of 20 years. However, at the time of writing, the FIT is subject to a government consultation threatening early closure.

## 20 Wind energy

### Describe, in general terms, any regulation of wind energy.

More than 7.7 per cent of the UK's electricity is now generated from wind farms. Onshore wind power is the cheapest form of renewable power in the UK. However political support for more onshore wind is divided and there is a strong possibility that the Conservative party will introduce a cap on the further development of onshore wind in its election manifesto next year. In contrast, there is a greater focus and acceptance of offshore wind power, with more than 20GW of capacity either in the planning process, consented to in construction or operating, and an expected additional 5GW of applications to come forward in the next 12 months. The UK remains one of the most attractive countries for investment in offshore wind.

The planning process for onshore wind development will depend on the size of the proposed development. Wind farms over 50MW in capacity will need to go through the development consent process set out in the Planning Act 2008 and will be determined by the Secretary of State.

Onshore wind farms under 50MW will require planning permission to be granted by the relevant local planning authority under procedures set out under the Town and Country Planning Act 1990. There are also some permitted development rights for small turbines that would not require planning consent. Significant onshore renewable energy proposals are likely to require environmental impact assessments.

The Localism Act 2011 has given communities a stronger voice in raising objections to proposed schemes, but this is not tantamount to a veto right. A compulsory pre-application engagement process was introduced in December 2013 for 'more significant' developments involving more than two turbines or any turbine exceeding 15 metres in height. The government has also proposed that developers offer increased benefits to communities where wind farms are accepted.

Operators of offshore wind farms need to obtain a lease from the Crown Estate, as landlord of the seabed up to the 12 nautical mile limit. The Crown Estate issues a five-year agreement for lease to the developer to secure all the necessary consents, grid connection and finance to start construction. Successful developers will be awarded a 50-year lease for operation of the development. The Crown Estate has so far carried out three rounds of leasing for offshore wind farms.

## 21 Solar energy

### Describe, in general terms, any regulation of solar energy.

Investors and developers have continued to show a strong appetite for the solar sector. Recent statistics show that the UK's installed capacity for solar PV has exceeded 5GW, making the UK the sixth largest market for solar PV. There are a number of factors that have accounted for this rise, including land availability, grid connectivity, planning application success rates and the continued economic attractiveness of the UK's financial mechanisms for supporting the deployment of solar PV under the FIT and ROC schemes) (see question 3, which sets out the renewable energy policy context for the UK and question 19 for detail on the FITs and ROC regime and subsidy levels for the years 2014-15, 2015-16 and 2016-17).

A streamlined planning regime for small-scale solar PV installations was introduced through the General Permitted Development Order (GPDO) in 2008 in England and a similar order in Scotland in 2009. The GPDO enables householders to install microgeneration technology without the need to apply for planning permission in most cases, although installers, manufacturers and suppliers of solar PV at micro-level (under 50kW) will need to comply with certain quality assurance standards set by the Microgeneration Certification Scheme. To benefit from FITs at the standard rate the property will need to have a minimum energy performance rating.

Large-scale solar projects up to 50MW need to obtain planning permission from the local planning authority. An environmental impact assessment is likely to be needed if the development is in an environmentally 'sensitive area' (as defined by the Town and Country Planning (Environmental Impact Assessments) Regulations 2011 (SI 2011/1824)). Developers may choose to enter into a planning performance agreement with the local planning authority to assist with the pre-application stage.

Planning permission is generally granted for a temporary period of 25 years, following which the site will be decommissioned and restored to its previous land use and condition. A generating licence may also be required under the Electricity Act 1989. However, in practice, many solar projects will fall within the exemptions to this Act.

## 22 Hydropower, geothermal, wave and tidal energy

**Describe, in general terms, any regulation of hydropower, geothermal, wave or tidal energy.**

Hydropower is a fully commercialised source of renewable power that has been in existence for nearly 150 years. The installed generating capacity of hydropower in the UK is approximately 1,680MWe. The vast majority of renewable energy capacity and generation from hydropower is in Scotland. There is little scope for further development of large-scale hydro in the UK, but small scale hydro has further growth potential.

All hydropower installations require planning permission from the relevant local planning authority pursuant to the Town and Country Planning Act 1990 as well as relevant permits from the Environment Agency (or its equivalent in Scotland and Northern Ireland). A planning application should normally be accompanied by a Flood Risk Assessment. The following permits and consents are likely to be required from the Environment Agency:

- a water abstraction licence in accordance with the Water Act 2003;
- a water impoundment licence;
- flood defence and land drainage by-law consent; and
- fish pass and fish screen approval.

The Environment Agency may also require a section 158 agreement under the Water Resources Act 1963 (a works agreement for water resources). Additionally, licences may be required from Natural England for any works affecting statutorily protected species.

For schemes larger than 50MW an Electricity Development Consent under section 36 of the Electricity Act 1989 will need to be obtained from the DECC.

The UK is the global leader in marine energy. Wave and tidal energy combined has the potential to provide around 20 per cent of current UK electricity demand. Commercial deployment of wave and tidal stream energy technology in the UK is understood to be just around the corner following the successful operation of demonstration devices.

There are no deep geothermal power plants in the UK and to date no wells have been drilled to sufficient depth to measure or prove the resource level for geothermal energy production. A study report by Atkins commissioned by the DECC (October 2013) suggests that 1–1.5GWe might be a reasonable potential by 2050.

While the government has provided some limited funding to date, a dedicated programme of funding for test drilling and exploration is likely to be needed to reduce risk and uncertainty to a level that may encourage the necessary private sector investment. The report concludes that the economic viability of any schemes is heavily reliant on heat sales, and the establishment of economically viable district heating networks becomes a limiting factor.

## 23 Waste-to-energy

**Describe, in general terms, any regulation of production of energy based on waste.**

Waste-to-energy plants play a role in helping to deliver long-term, affordable, low carbon and secure energy. At present, there are over 50 operational EfW plants in the UK. Driven by EU targets on landfill diversion for residual household waste by 2020 (pursuant to the Landfill Directive (Council Directive 99/31/EC)), Defra introduced a programme of funding support for waste treatment projects aimed at processing household waste. Allied to this programme, the introduction of certain fiscal and tax incentives and the incentive framework under the RO and FIT schemes have supported a substantial rise in energy from waste plants. However, the sector was hit hard in 2013 when Defra withdrew its support for a number of private finance initiative and public-private partnership projects almost out of the blue and the pipeline of government-supported projects was effectively cancelled. According to a market report by the Green Investment Bank (July 2014) there remain good opportunities for the development, on a merchant basis, of further energy recovery infrastructure with an emphasis on processing commercial and industrial waste.

Energy-from-waste plants usually require a generating licence under the Electricity Act 1989, planning permission from the local planning authority (for proposals with a power generation capacity less than 50MW), grid connection consent, building control consent, a permit from the Environment Agency under the Environmental Permitting (England and Wales) Regulations 2010 (SI 2010/675) and, possibly, protected species licences. In most cases, an environmental impact assessment will be mandatory. Strict emission limits in accordance with European legislation (Waste Incineration Directive) must be met.

## 24 Biofuels

**Describe, in general terms, any regulation of biofuels.**

According to a report prepared for the Department of Transport by ECOFYS (November 2013) the UK has a total biofuel production capacity of over 1,500 million litres per year, of which approximately 60 per cent is bioethanol and 40 per cent biodiesel (with a small volume of biomethane). Actual production has been significantly below capacity due to a number of market-related issues, including removal in April 2012 of the 20p tax exemption on fuel duty. There is also limited additional capacity being planned beyond 2016.

The Renewable Energy Directive 2009 requires the UK to achieve 10 per cent of its transport energy consumption from renewable sources by 2020. Linked to this, the UK also has obligations to reduce life-cycle GHG emissions from transport fuel by 2020 under the Fuel Quality Directive 2009/28/EC. In April 2012, the government published the UK Bioenergy Strategy, which states the government's aim to have biofuels account for 11 per cent of energy in the UK by 2020, and 12 per cent by 2050 as part of its long-term policies to decarbonise road transport. Electric vehicles are expected to make a significant contribution to renewable transport energy although there are barriers to implementing the necessary infrastructure.

The government has introduced a number of incentives to promote the production and use of biofuel. Following implementation of the Renewable Energy Directive in the UK in December 2011 through an amendment to the RTFO, biofuels produced from approved waste and residue feedstocks are awarded two renewable transport fuel certificates (RTFCs) per litre/kg. These RTFCs can be traded between producers and suppliers or sold via brokers and traders.

Biofuel producers over 2,500 litres a year must report their supply volumes to HMRC and pay duty on those supplies. They must also report carbon and sustainability data to the Department for Transport in order to claim their RTFCs. They are required under the RTFO to supply a percentage of renewable road transport fuel. Refiners, importers and any others who supply more than 450,000 litres of road transport fuel per year to the UK market are obligated under the RTFO to redeem a number of RTFCs in proportion to the number of non-renewable biofuel they supply. They can 'buy out' their obligation or buy RTFCs from others in the scheme if they do not meet the required percentage in any period. The percentage of renewable fuel that must be supplied under the RTFO for the years 2013–14 onwards is 4.75 per cent.

## 25 Carbon capture and storage

**Describe, in general terms, any policy on and regulation of carbon capture and storage.**

The UK government has stated that its aim is to create a 'cost-competitive CCS industry' by the 2020s. An initial competition to design, construct and operate the UK's first commercial scale CCS plant was launched in 2007. However, this was cancelled in 2011 by the DECC on the grounds of protecting value for money and because the project could not be funded within the £1 billion budget agreed at the 2010 Spending Review. The National Audit Office criticised this initial competition as having been high-risk with insufficient planning, having a lack of recognition of the commercial risks and a lack of clarity over government finance for the project.

The government, therefore, launched a subsequent £1 billion commercialisation competition in April 2012, with a somewhat reduced ambition. The two projects that have been supported under this scheme are the White Rose Project and the Peterhead Project, which, in December 2013 and February 2014 respectively, were awarded multimillion-pound contracts to undertake Front End Engineering and Design (FEED) studies. FEED is a programme of detailed engineering, planning and financial work to finalise and de-risk aspects of the proposal ahead of taking final investment decisions and proceeding to construction.

### Update and trends

Since the Conservative victory in the May 2015 general elections, the government has made a number of announcements indicating a significant retrenchment on climate change policy. This includes accelerating closure of the RO to solar projects over 5MW since April 2015, solar projects under 5MW from April 2016 and onshore wind from April 2016, and withdrawal of levy exemption certificates. It also includes a review of the FIT, threatening closure to new projects from 2016. This is happening alongside additional rights being granted controversially to frackers and to North Sea oil and gas operators and a capacity mechanism introduced into the electricity market which, so far, is favouring carbon intensive generators. It also remains to be seen whether the CfD works to support any meaningful growth in renewables and whether the government will come forward with consolidated legislation in respect of energy efficiency.

In addition, the UK government has funded a four-year (2011–2015) £125 million cross-government CCS research, development and innovation programme (£62 million to support fundamental research and understanding, £28 million to support the development and demonstration of CCS components and next-generation technologies (such as turbines or new solvents to capture the carbon dioxide) and £35 million for pilot-scale projects to bridge the gap between research and commercial scale deployment).

On 7 August 2014, the DECC published 'Next Steps in CCS: Policy Scoping Document', which summarises the relevant policies and actions and seeks evidence on a possible Phase 2 of CCS deployment.

Alongside funding to support research and projects, the government has put in place the regulatory regime for governing CCS. The framework for the licensing regime was first established under the Energy Act 2008 in advance of the EU Directive on CCS (on the basis that the UK wanted to pre-empt EU regulation to put itself in a leading position). EU Directive 2009/31/EC on the geological storage of carbon dioxide (the CCS Directive) was subsequently implemented in the UK by the Storage of Carbon Dioxide (Licensing etc) Regulations 2010 (SI 2010/2221). These 2010 Regulations implemented the requirements of the CCS Directive relating to licensing and storage and amending and creating greater detail for the UK licensing regime for storage and exploration stages of CCS. The Storage of Carbon Dioxide (Termination of Licences) Regulations 2011 govern the transfer of responsibility following termination of CCS licences.

In addition, the Energy Act 2010 put in place the financial incentive mechanism to support construction of CCS demonstration projects (as above) and requires the government to report on the development and use of CCS. In February 2012, the Storage of Carbon Dioxide (Inspection) Regulations 2012 (SI 2012/461) came into force, which amend the 2010 Licensing Regulations and transpose article 15 of the CCS Directive on inspections of storage complexes. Finally, on 18 October 2011 the Energy Act 2011 came into force, inserting into the Energy Act 2008 new sections

on installations and submarine pipelines converted for CCS demonstration projects.

A wide series of amendments to existing legislation was also necessary to implement the Directive and harmonise the regulation of CCS activities with pre-existing legislation. These mainly concern environmental liability, pollution prevention and control, and environmental impact assessment.

### Climate matters in transactions

#### 26 Climate matters in M&A transactions

##### What are the main climate matters and regulations to consider in M&A transactions and other transactions?

Climate change considerations in M&A will be industry and transaction-specific but will challenge every aspect of investment decision-making. Institutional investors, with a longer-term investment focus, are particularly sensitive to global (European and UK specific) regulatory and policy development. The physical and economic implications of climate change are highly uncertain and low-carbon policy risk has become even more important following various policy changes or contradictions between incentive mechanisms. Adaptation becomes a key risk and opportunity in some sectors and for some businesses.

Due diligence is a fundamental part of any investment process. An investor will want to be satisfied a target is complying with its climate change obligations, among other things. At the basic level, ensuring the target has all the necessary consents and authorisations (eg, permits). At a level up, being aware of the target's obligations under schemes such as the EU ETS, the CRC Energy Efficiency Scheme, the RO, the FITs scheme and the RHI scheme, all of which are discussed in previous questions. And overlaying that assessment, being conscious of how stable and transparent are the regulatory, tax and tariff structures.

Specific climate change regulations may influence the valuation of the target or its leverage structure and may lead to a party requesting specific warranties and indemnities, clawbacks against the purchase price and negotiating protective exit structures.

Many companies will have an environmental strategy or a sustainability policy as part of its CSR strategy. They are likely to also have a risk management strategy to measure and report their environmental impacts, including things like water use, air pollution, waste and biodiversity and GHG emissions. In October 2013 the government introduced mandatory corporate reporting for all quoted companies to report on their GHG emissions. Private companies have been placed under a similar obligation since October 2013 under the Companies Act 2006. The government also provides specific guidance for freight transport operators and for companies wishing to report emissions from their work-related travel. It is imperative that companies keep up to date with climate change policy and legislative developments to enable them to capitalise on growth areas, minimise costs, and adapt early to become leaders or maintain their competitiveness.



# Lux Nova Partners

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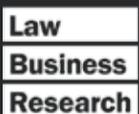
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