

Third Progress Report on the Promotion and Use of Energy from Renewable Sources for the United Kingdom

**Article 22 of the Renewable Energy Directive
2009/28/EC**

January 2016

Introduction

Renewable energy has the potential to play a key role in efforts to meet the United Kingdom's legally binding goal of an 80% emissions reduction by 2050.

Deployment to date has been strong. Having started from a low base of 1.3% in 2005, we have seen renewables meet 7.0% of energy demand in 2014. As outlined in this report, the UK has comfortably met the interim target set by the Renewable Energy Directive for 2013-14, reporting an average final energy consumption of 6.3% over that two year period, against a target level of 5.4%.

In electricity in particular we have seen a rapid expansion of renewable generation, with renewable electricity accounting for almost a fifth of total generation in 2014 with investment in renewables reaching £8bn last year alone. Based on existing plans the UK is set to meet our ambitious objective of 30% of electricity from renewables in 2020. For example in 2013 we said we would deliver 11 – 13 GW of onshore wind by 2020. By the end of 2014 we had 8.4GW of onshore wind in the UK, with further projects already planned to reach a capacity of 12.3GW in 2020. Solar generation has also increased rapidly. Forecasts made in 2012 expected around 1.5GW to be installed by 2015; the current estimated installed capacity is around 8GW.

This progress has driven some significant reductions in the cost of renewables deployment. For example, the cost of solar has fallen 60% since 2010. It has also confirmed the UK as the World's leading offshore wind market. Looking to the future, the Government announced in November its intention to hold three auctions in the coming Parliament under the Contracts for Difference renewables support scheme, subject to industry cost reductions, with the aim of bringing forward additional offshore wind capacity.

But increasing generation from renewables is only part of the picture. We fundamentally need to cut carbon emissions right across the economy. In spite of the growth in renewables over the past decade, a higher proportion of UK electricity came from coal in 2014 than in 1999.

In an ideal world, market forces such as the carbon price would phase out the use of coal for electricity generation in the coming years, but it is not there yet. So the UK Government has announced the phasing out of all unabated coal fired power stations by 2025, and restricting its use from 2023.

In heating and cooling the UK continues to exceed the deployment trajectory set out in our National Renewable Energy Action Plan, reaching 4.5% in 2014, against a target level of 2.0% for that two year period. We have driven uptake of renewable heat via the world first Renewable Heat Incentive (RHI), a c£400m annual fund to support households and businesses convert to renewable heating. The existing RHI has funding until 2015/16.

In order to maintain progress on renewable heat for the rest of the decade, we recognise that we need to do more beyond 2016. And that's why in November this year the Government announced additional support available under the RHI, with the budget for that scheme rising to £1.15bn in 2020/21. We will also make a number of reforms to the programme in the coming months to ensure it delivers maximum value for money.

In the transport sector, the Renewable Transport Fuel Obligation (RTFO) is currently set at 4.75% by volume of renewable transport fuel for each obligation year from 2013/14 onwards. Following the outcome of EU discussions on Indirect Land Use Change (ILUC), we will shortly be consulting on plans to increase the use of biofuels in a strategic and sustainable way and in line with our 2020 targets.

The RTFO was amended extensively in 2011 to implement the Renewable Energy Directive (RED). This gave greater certainty over the sustainability of biofuels by introducing mandatory sustainability criteria, as well as incentivising non crop biofuels by introducing 'double counting' for those derived from wastes and residues.

Progress over 2013 and 2014

The tables below set out progress in renewables deployment over 2013 and 2014 across heating & cooling, transport and electricity sectors. This is then broken down in more detail, including by technology type.

Tables 1 and 1a show that all sectors have seen a steady increase in renewables deployment over 2013-2014, with renewable electricity generation increasing by almost a quarter, renewable heat generation increasing by 5% and renewable transport fuels increasing by 12% (*figures based on table 1a*)

Table 1: Contribution from renewable sources to heating & cooling, electricity and transport fuel.¹

	2013	2014
Heating & Cooling from renewable sources ² (%)	3.8	4.5
Electricity from renewable sources ³ (%)	13.8	17.8
Transport fuel from renewable sources ⁴ (%)	2.8*	3.2*
Overall share of energy from renewable sources ⁵ (%)	5.6	7.0
<i>Of which from cooperation mechanism⁶ (%)</i>	-	-
<i>Surplus for cooperation mechanism⁷ (%)</i>	-	-

*Overall supply was low due to double counting certificates.

Table 1a: Renewable energy contributed from each sector (heating & cooling, electricity and transport fuel) to final energy consumption. (ktoe)⁸

	2013	2014
(A) Gross final consumption of renewable sources for heating and cooling	2,271	2,376
(B) Gross final consumption of electricity from renewable sources	4,317	5,376
(C) Gross final consumption of energy from renewable sources in transport	1,048	1,179
(D) Gross total energy from renewable sources consumption ⁹	7,636	8,931
(E) Transfer of energy from renewable sources to other Member States	-	-
(F) Transfer of energy from renewable sources from other Member States and 3rd countries	-	-
(G) Energy from renewable sources consumption adjusted for target (D)-(E)+(F)	7,636	8,931

¹ Facilitates comparison with Table 3 and Table 4a of the NREAPs.

² Share of renewable energy in heating and cooling: gross final consumption of energy from renewable sources for heating and cooling (as defined in Articles 5(1)b) and 5(4) of Directive 2009/28/EC divided by gross final consumption of energy for heating and cooling. The same methodology as in Table 3 of NREAPs applies.

³ Share of renewable energy in electricity: gross final consumption of electricity from renewable sources for electricity (as defined in Articles 5(1)a) and 5(3) of Directive 2009/28/EC divided by total gross final consumption of electricity. The same methodology as in Table 3 of NREAPs applies.

⁴ Share of renewable energy in transport: final energy from renewable sources consumed in transport (cf. Article 5(1)c) and 5(5) of Directive 2009/28/EC divided by the consumption in transport of 1) petrol; 2) diesel; 3) biofuels used in road and rail transport and 4) electricity in land transport (as reflected in row 3 of Table 1). The same methodology as in Table 3 of NREAPs applies.

⁵ Share of renewable energy in gross final energy consumption. The same methodology as in Table 3 of NREAPs applies.

⁶ In percentage point of overall RES share.

⁷ In percentage point of overall RES share.

⁸ Facilitates comparison with Table 4a of the NREAPs

⁹ According to Art.5(1) of Directive 2009/28/EC gas, electricity and hydrogen from renewable energy sources shall only be considered once. No double counting is allowed.

Tables 1b-1d provide a breakdown by sector and of the technology and fuel types used to contribute to the final energy consumption from renewable sources during 2013 and 2014.

Table 1.b: Contribution towards electricity (installed capacity and gross generation) from renewable sources broken down by technology type in the UK. ¹⁰

	2013		2014	
	MW	GWh	MW	GWh
Hydro ¹¹ :	4,452	7,605	4,467	8,071
non pumped	1,708	5,167	1,723	5,188
<1MW	115	245	127	281
1MW–10 MW	184	561	187	559
>10MW	1,409	4,358	1,409	4,348
pumped	2,744	2,904	2,744	2,883
mixed ¹²	-	-	-	-
Geothermal	-	-	-	-
Solar:	2,851	-	5,377	-
photovoltaic	2,851	1,989	5,377	4,050
concentrated solar power	-	-	-	-
Tide, wave, ocean	3	6	3	2
Wind:	11,215	25,804	12,988	31,579
onshore	7,519	15,474	8,486	18,468
offshore	3,696	10,330	4,501	13,111
Municipal Waste (renewable)	550	1,649	696	1,950
Biomass ¹³ :	3,416	16,510	3,754	20,753
solid biomass	2,085	9,866	2,354	13,852
biogas	1,331	6,644	1,400	6,901
bioliquids	-	-	-	-
TOTAL	22,487	54,029	27,284	66,403
of which in CHP	434	2,078	445	2,404

Table 1c: Contribution towards heating and cooling (final energy consumption) from renewable sources broken down by technology and renewable source type in the UK. (ktoe) ¹⁴

	2013	2014
Geothermal (excluding low temperature geothermal heat in heat pump applications)	0.8	0.8
Solar	50.1	52.1
Municipal Waste (renewable)	58.8	48.7
Biomass ¹⁵ :	2,051.4	2,142
solid biomass	1,961.6	2,032.3
biogas	89.8	109.7
bioliquids	-	-
Renewable energy from heat pumps:		
- of which aerothermal	88.3	107.8
- of which geothermal	39.4	51.2
- of which hydrothermal	48.9	56.6
TOTAL (includes derived heat)	2,271 (21 derived)	2,376 (24.5 derived)
Of which DH ¹⁶	-	-

¹⁰ Facilitates comparison with Table 10a of the NREAPs.

¹¹ Normalised in accordance with Directive 2009/28/EC and Eurostat methodology.

¹² In accordance with new Eurostat methodology.

¹³ Take into account only those complying with applicable sustainability criteria, cf. Article 5(1) of Directive 2009/28/EC last subparagraph.

¹⁴ Facilitates comparison with Table 11 of the NREAPs.

¹⁵ Take into account only those complying with applicable sustainability criteria, cf. Article 5(1) last subparagraph of Directive 2009/28/EC.

<i>Of which biomass in households¹⁷</i>	1,366.4	1,305.7
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Table 1d: Total contribution to the 2020 Renewables Target for Transport by renewable technology in the UK. (ktoe)^{18, 19}

	2013	2014
Bioethanol/ bio-ETBE	411	410
<i>Of which Biofuels²⁰ Article 21.2</i>	<i>4</i>	<i>35</i>
<i>Of which imported²¹</i>	<i>341</i>	<i>305</i>
Biodiesel	608	758
<i>Of which Biofuels²² Article 21.2</i>	<i>552</i>	<i>643</i>
<i>Of which imported²³</i>	<i>442</i>	<i>573</i>
Hydrogen from renewables	-	-
<i>Renewable electricity</i>	<i>80</i>	<i>86</i>
<i>Of which road transport</i>	<i>1</i>	<i>1</i>
<i>Of which non-road transport</i>	<i>79</i>	<i>85</i>
Others (as biogas, vegetable oils, etc.) – please specify	29	11
<i>Bio MTBE</i>	<i>11</i>	<i>-</i>
<i>Biomethane</i>	<i>2</i>	<i>2</i>
<i>Biomethanol</i>	<i>16</i>	<i>7</i>
<i>HVO</i>	<i>-</i>	<i>1</i>
<i>Pure Plant Oil</i>	<i>-</i>	<i>1</i>
<i>Of which Biofuels²⁴ Article 21.2</i>	<i>26</i>	<i>8</i>
TOTAL	1,048*	1,179*

*Excluding renewable electricity

¹⁶ District heating and / or cooling from total renewable heating and cooling consumption (RES- DH).

¹⁷ From the total renewable heating and cooling consumption.

¹⁸ For biofuels take into account only those compliant with the sustainability criteria, cf. Article 5(1) last subparagraph.

¹⁹ Facilitates comparison with Table 12 of the NREAPs.

²⁰ Biofuels that are included in Article 21(2) of Directive 2009/28/EC.

²¹ From the whole amount of bioethanol / bio-ETBE.

²² Biofuels that are included in Article 21(2) of Directive 2009/28/EC.

²³ From the whole amount of biodiesel.

²⁴ Biofuels that are included in Article 21(2) of Directive 2009/28/EC.

UK Government Policies to promote renewables deployment over 2013 and 2014.

The UK Government and Devolved Administrations have implemented a number of policies and programmes to support the growth in renewable energy deployment across the electricity, heat and transport sectors. Table 2 below sets these out in more detail, but the main policies have included providing subsidies to promote the take up and public acceptance of renewable electricity generation; providing payment for heat generated through renewable sources of energy; setting targets for sustainable renewable fuel in transport fuel.

2. The table below sets out the measures and policies adopted by the UK Government and the Devolved Administrations in Scotland, Wales and Northern Ireland in order to promote growth in renewable energy over the past two years.

Table 2: Overview of all policies and measures

Name and reference of the measure	Type of measure	Expected result	Targeted group and or activity	Existing or planned	Start and end dates of the measure
Financial Support Regimes					
Renewables Obligation	Regulatory	Increase generation of renewable electricity from a range of technologies by setting obligations on electricity generators to ensure they generate electricity from renewable sources.	Primarily large scale renewable electricity generation by licensed generators.	Existing	Started in 2002 Support is provided for up to 20 years from the time of accreditation. Scheme expected to close in 2017 with different closure dates for different technologies; this will ensure technologies which need support will receive it whilst those able to compete in the open market can do so.
Contracts for Difference mechanism (CfDs) under Electricity Market Reform	Financial Regulatory	Increase generation of a range of renewable and other low carbon Technologies and drive down costs for consumers through technology competition. Scheme provides efficient long-term revenue support for low carbon forms of generation.	Primarily targeted at medium and larger scale renewable electricity generation by licensed generators. Smaller/new entrants also encouraged to participate.	Existing	The scheme was launched in October 2014 and the first CFD allocation round was successfully completed in March 2015. Three further CfD rounds were announced in November 2015 and these are due to take place within this parliament. CFD contracts

					have a lifetime of 15 years from the point of contract award.
Final Investment Decision (FID) Enabling for Renewables	Financial Regulatory	Increase generation from of a range of renewable and other low carbon technologies. Offered investment certainty in advance of CfD regime being put in place.	Primarily large scale renewable electricity generation by licensed generators.	Existing	The FID enabling for renewables process was launched in March 2013. Eight contracts were awarded in April 2014. State aid approval was given for the five offshore wind projects in July 2014 and for the dedicated biomass with Combined Heat and Power plant in January 2015. We received State Aid approval on 1 Dec 2015 for one of the two biomass conversion projects and we await the State Aid outcome for the second.
Feed in Tariffs	Financial Regulatory	Incentivise generation of low carbon electricity from a range of smaller scale technologies by paying for electricity from renewable sources which is fed back into the grid.	Households, communities, organisations and businesses investing in projects up to 5MW	Existing	Introduced on 1 April 2010. New entrants will be eligible for 10-25 years, dependent upon the technology and time of application. Review of scheme, through a public consultation, completed in November 2015.
Plug-in Car Grant	Financial	Incentivise owners of plug-in vehicles to install at home or on-street charge points by providing 75% of the costs of installing new charging points. .	Targeted at: <ul style="list-style-type: none"> • people installing charge-points where they live • local authorities installing rapid charge points to facilitate longer journeys, or providing on-street charging on 	Existing	The programme was launched on 30 June 2013 and is expected to run until at least Feb 2016 or until it has delivered 50,000 grants in total, whichever comes first.

			<p>request for plug-in vehicle owners</p> <ul style="list-style-type: none"> train operators installing new charge points at railway stations 		
Renewable Heat Incentive Domestic	Financial	<p>Incentivise generation of renewable heat in households.</p> <p>Support and develop a long term sustainable supply chain for renewable heat.</p> <p>The programme provides payment for heat generated, by registered schemes, from renewable sources. For the domestic scheme, heat is calculated as an estimate of deemed heat.</p>	Households, social and private landlords.	Existing / planned	<p>Opened in Spring 2014.</p> <p>Recently announced additional funding to reach a budget level of £1.15billion by 2021 shared across domestic and non-domestic schemes. The scheme design for this new funding is yet to be decided.</p>
Renewable Heat Payment Premium	Financial	<p>Financial support to encourage the deployment of renewable heating systems in households by providing grants to purchase renewable heating systems to replace current conventional heating systems.</p>	Households, social and private landlords.	Existing	<p>Opened in August 2011 and closed in March 2014</p>
Renewable Heat Incentive Non-Domestic	Financial	<p>Incentivise non-domestic renewable heat.</p> <p>Support and develop a long term sustainable supply chain for renewable heat</p> <p>The programme provides payment for heat generated, by registered schemes, from renewable sources. For the non-domestic</p>	Non-domestic properties, industrial, commercial, public and district heating installers and manufacturers.	Existing / planned	<p>Opened in November 2011.</p> <p>Recently announced additional funding to reach a budget level of £1.15billion by 2021 shared across domestic and non-domestic schemes. The scheme design for this new funding is yet to be decided.</p>

		scheme heat is calculated through metered readings.			
Renewable Transport Fuel Obligation (RTFO)	Regulatory	Increase proportion of renewable fuel in road fuel and reduce emissions from GHG by regulating for the use of sustainable biofuel.	Fuel suppliers	Existing / Planned	The RTFO was launched in April 2008 and is currently ongoing. We are looking to consult on what shape the RTFO should take in the future.
Other funding and grants to encourage deployment and innovation					
Rural Community Energy Fund	Financial	Provision of grants and loans to support costs of feasibility studies into local renewable energy projects and to fund costs associated with applying for planning permission.	Community groups, farming community and general public.	Existing	£15m Government scheme launched in June 2013. Expected to run until 2017 or when the funding is fully allocated; whichever comes first.
Anaerobic Digestion Loan Fund	Financial	£10m loan fund to support the development of new AD capacity in England. The fund can provide asset backed loans for plant, machinery and/or groundworks. Minimum investment size of £50,000 / maximum of £1,000,000	Those seeking to install AD, with an additional focus on on-farm AD	Existing	Fund launched in July 2011 and continuing to operate. In October 2013 scope of fund extended to include an additional £3m for farm based AD projects.
UK Marine Energy Testing Infrastructure	Infrastructure and innovation	Provision of testing facilities for developers of wave and tidal energy.	Developers, manufacturers	Existing	There are three main UK wave and tidal testing centres – the European Marine Energy Centre (Orkney), Wave Hub (Cornwall), the National Renewable Energy Centre (NaREC, NE England). These were opened in 2003, 2012 and 2002 respectively and continue to operate.
Marine Energy Array Demonstrator	Financial and innovation	The scheme will support up to 2 pre-commercial projects to demonstrate the	Developers	Existing	£20m Government scheme opened in April 2012. A grant of £10m

		operation of wave and/or tidal devices in array formation over a period of time, subject to state aid			was offered to the MeyGen project which is due to deploy in 2016. This is an offshore marine project which is estimated to deploy up to 398MW.
Plugged-in Places (PIPs)	Financial	Provision of matched funding to support trialling of different business models and technologies to inform the roll-out of electric vehicle recharging infrastructure nationally.	To date over 5000 charge-points have been provided under the PIPs scheme. About 65% of these PIP charge-points are publicly accessible.	Existing	Trial is on-going and will be reviewed annually.
Office for Low Emission Vehicles (OLEV) R&D Funding	Financial	Providing £82m support for R&D that will support improvements to internal combustion engines; energy storage and energy management; lightweight vehicles and power train structures; development of power electronics and electric machines; and developing and applying Intelligent Transport Systems.	Partners include industry and universities.	Existing	Funding was initially Provided for 2010 to 2015; this has now been extended to 2020. An additional £10m has just been announced for a battery competition with detail to be confirmed shortly.
UKH ₂ Mobility	Financial	Evaluate hydrogen as an Ultra-Low Emission Vehicle (ULEV) fuel in the UK by sharing data on trends and consumer habits and attitudes to ULEVs. The UK government funded phase one of this project (£11 million); Jan 2012 to March 2013, the next three phases are funded from private	Government and Industry	Existing	Started in January 2012 and is expected to continue to 2030. A roadmap has been established projecting data to 2030 and UKH ₂ Mobility will continue to evaluate and advise on hydrogen fuel infrastructure.

		investment.			
Low carbon Trucks	Financial	Evaluate potential for low carbon HGVs by working with industry on prototype vehicles and funding further R&D The UK government has provided £11.3m of funding.	Government and Industry	Existing	Trial started in 2013 and is expected to continue until 2016.
Advanced biofuels demo	Financial	Promote advanced biofuels and address the risks and barriers associated with it. The scheme aims to bring together those in the R&D field (e.g. universities) with industry to share ideas and test fuels. The UK government has provided £25m of funding in December 2014 for three years to 2018.	Government and industry.	Existing	Started in August 2013 and it likely to continue into 2015.
HyTAP	Financial	Providing £82m support for R&D that will support improvements to internal combustion engines; energy storage and energy management; lightweight vehicles and power train structures; development of power electronics and electric machines; and developing and applying Intelligent Transport Systems.	Partners include industry and universities.	Existing	Funding was initially Provided for 2010 to 2015; this has now been extended to 2020. Project is ongoing; an additional £10m has been awarded to the winners of a a battery competition.
Green Investment Bank	Financial	Mobilising private sector investment into green infrastructure. The programme provides funding	Developers and investors	Existing	Government has made £3bn of funding available since 2012 which has backed nearly 60 green infrastructure projects in the UK

		to new green infrastructure projects which de-risks them to allow more funding to be raised.			
Wider regulatory measures that support renewable deployment					
Biomass sustainability.	Regulatory	Ensure all biomass in receipt of subsidy under Renewables Obligation (RO), Renewable Heat Incentive (RHI) and Contracts For Difference (CfD) is sustainable by introducing minimum sustainability requirement: a greenhouse gas saving (at least 60% saving compared to the EU grid average) and a land criteria	Generators of electricity and heat from biomass. Investors.	Existing and planned	Introduced to the RHI from October 5 th 2015 and has become mandatory under the RO from December 1 st 2015 for all RO projects. Same requirements to be written into CFD contracts from 2016.
EU CO ₂ car & van emissions	Regulatory	Lower vehicle emissions and promote energy efficiency.	Manufacturers	Existing / planned	New car CO ₂ regulations brought in in 2009 sets targets of 130g CO ₂ /km by 2015 and 95 by 2020.
Planning related measures					
Good practice guidance and registers on community engagement and benefits for renewables developments.	Soft	To encourage greater community support for renewables projects.	Renewables developers, planning authorities, local communities.	Existing	Good practice guidance was published in October 2014. A register for England was launched in 2015.
Unblocking barriers					
Anaerobic Digestion (AD) Strategy and Action Plan	Soft but action plan describes some financial and regulatory measures.	Increase deployment of energy from waste by AD. Sets out a range of actions, for HMG working with industry, to overcome regulatory, financial and other barriers.	AD, waste and food industries, farmers, investors.	Existing	Published June 2011. Implementation of actions is on-going and £10m has been set aside for investment in AD from 2011 to 2015.
Radar and aviation programme.	Infrastructure	Government working with Industry to invest	Wind Developers, Aviation Technology	Existing and Planned	75% of R&D projects now complete, the

		in R&D and implement solutions that would address aviation related objections to wind turbines in the planning system.	Providers, Air Navigation Service Providers.		other 25% expected to complete in the next x months. Implementation of findings from R&D will take place over next 2-3 years.
Ultra-Low Emission Vehicle (ULEV) Communications	Soft	Programme aims to inform, enthuse and engage vehicle purchasers with the benefits of ULEVs and to dispel widespread myths such as range anxiety, through a number of mediums such as case studies of ULEV owners, publication of ULEV data, publicising of charge points, articles in car magazines etc.	Industry, consumers and businesses	Existing	Started in 2013 and will continue over the next 5 years.

Measures being taken by the Devolved Administrations

Scotland

Community and Renewable Energy Scheme (CARES)	Financial and soft	To assist in delivery of target for 500 MW of renewable energy in Scotland to be locally/ community owned by 2020. Programme provides pre-planning loans and advice as well as assistance to negotiate for community benefits from commercial schemes.	Community groups and rural businesses	Existing	2011 to 2016 To date over 150 projects have been funded with average community payments of around £4,500 per MW per year.
Renewable Energy Investment Fund	Financial	Scottish Government operated £103m fund on a commercial basis to fill market gap in support for community groups (linked to CARES support above), for marine energy schemes and for district heating.	Targeted at community groups, marine energy and district heating developers.	Existing	2012 to 2016 Case studies can be found on the Scottish Enterprise website .

Offshore Wind Manufacturing Fund	Financial	<p>To support the development of offshore wind manufacturing at coastal locations in the Assisted Areas in England.</p> <p>The fund looks at providing some funding for projects which could help de-risk the project to attract further private funding and / or benefit from government schemes such as FiTs and CfDs.</p>	Port owners; turbine manufacturers; foundation manufacturers	Existing	Opened Oct 2010 with £60m to invest in offshore wind in Scotland, closed to new schemes 1 July 2014.
Marine Renewables Commercialisation Fund (MRCF)	Financial	£18m fund operated by the Scottish Government to support the development and subsequent commercialisation of the wave industry. Supports enabling technologies, crucial to both wave and tidal arrays.	Wave and tidal turbine developers.	Existing	2013 to 15. The fund has invested in a number of facilitating technologies, including advanced mooring and anchoring systems, aimed at reducing technology costs and risks across the sector.
Northern Ireland					
Northern Ireland Biomass Processing Challenge Fund (DARD)	Financial	<p>Installation on-farm of an increased number of biomass-fuelled renewable energy technologies.</p> <p>To provide farmers with a secure supply of clean energy for use in support of their agricultural activities.</p>	Primary producers from the land based sector in Northern Ireland	Existing	<p>Tranche Two of the BPCF opened for applications on 10th September 2012 and closed to applications on 30th November 2012. All successful applicants received Letters of Offer by the end of June 2013. Projects to be implemented by 2017</p> <p>Tranche Two of the BPCF provided almost £1m in funding for a range of on-farm renewable energy projects, supporting a total investment of almost £5million.</p>

Funding for Grid Infrastructure for Renewables	Regulatory	Current grid development plans valued at £44m, of which £27.8m have been approved by the NI Regulator, should allow penetration to reach 27% of generation from renewables (approx. 1000MW installed capacity)	Investors End Users Renewable Industry	New for 2013	2013 to 2017.
Northern Ireland Planned policy statement	Regulatory	Planning Policy Statements set out the planning policies which Department of Energy Planning, local councils and developers are expected to take into account in planning or preparing and determining planning applications. Specifically, Planning Policy Statement 18 (PPS18) creates a positive framework for renewable energy to help facilitate greater renewable energy installation.	DoE Planning, local councils, developers	Existing	In force from August 2009.
Nearly Zero Carbon Homes	Regulatory	By 31 st December (from 31 st December 2019 for public sector buildings) all new buildings to be nearly zero energy buildings.	New buildings	Planned	Staged approach – First stage started in October 2014. Next stage planned for March 2017. Implementation on certain public buildings from Jan 2019 and full implementation by 31 st Dec 2020, to follow standards in England.
Duty to promote renewable heat	Soft	Behavioral change	Public administration – requirement will be on the Department of Enterprise Trade and Investment	Planned for 2014.	2014 and on-going.
Wales					
Low Carbon	Financial	Led by Cardiff	Academic,	Existing	The LCRI was set

Research Institute (LCRI).		University, the LCRI considers the latest research in low carbon energy and attempts to turn this into practical energy development mechanisms; e.g. increasing the efficiency of solar panels, identifying ways to exploit wave and tidal energy, etc.	Research and Design and Industry.		up in 2007 with a grant of £5.1m from the Welsh Government. A further £15m of funding was provided in September 2009, from the Welsh European Funding Office (WEFO) matched with £19 million from Welsh universities and industry. This funding is expected to run until 2020 but will be regularly reviewed.
Marine Renewable Energy Strategic framework.	Soft	Practical Wave and Tidal Resource Assessment based on development constraints. Encourage deployment by de-risking potential sites through running scenarios and assessments which will be available to those interested in developing energy from wave & tidal resources.	Welsh Government Policy Officials, industry and investors.	Existing Outcomes were published in March 2011.	2011 to 2016; to be reviewed in 2016 to consider extending scheme.
Ynni'r Fro Programme	Financial	Advice, grants, capital support to community groups looking to set up their own social enterprises to generate energy	Communities, industry	Existing	From 2000 to 2015. The financial element is made up from small grants (up to £30k) from local Welsh authorities and advice on making use of FiTs and RHI schemes

2.a Progress made in reducing regulatory and non-regulatory barriers to the development of renewable energy. (Article 22(1)e) of Directive 2009/28/EC)).

Since the last progress report, the UK Government has taken a number of steps to reduce the regulatory and non regulatory barriers to the uptake of renewable energy. The most notable have been facilitating the move from the Renewables Obligation (RO) to Contracts for Difference (CfD) and providing an alternative route to market for generators.

Power Purchase Agreements

As part of the package of measures aimed at facilitating transition from the Renewables Obligation (RO) to the Contracts for Difference (CfD) support regime, Government initiated a process to prepare the market for the introduction of CfDs by working with stakeholders to develop sample Power Purchase Agreements (PPAs) and best practice guidelines for PPA providers.

This has helped to reduce administrative and financial barriers for independent renewable generators and mitigate any investment hiatus. This has been achieved through the creation of a framework and guidelines agreed by purchasers of power and sellers.

Off-taker of Last Resort

The Off taker of Last Resort (OLR) scheme was also introduced to help generators holding CfDs by providing an alternative route to market for their electricity by facilitating a Backstop Power Purchase Agreement (BPPA) between the generator and a supplier via a competitive auction process. OLR is intended as a last resort to help generators who cannot get a power purchase agreement through the usual commercial routes, so the electricity generated under a BPPA is sold at a specified discount below the market reference price.

The aim of this scheme is to ensure that new entrants to the energy market will always have a market for the electricity they produce. Even if the electricity is sold at below market value, lenders to new entrants can take this into account when considering returns on their investment. It is hoped that the market will continue to grow so the OLR market will be an actual “last resort”.

2.b Description of measures in place for the transmission and distribution of electricity from renewable sources and the framework / rules in place for the costs associated with grid connections and reinforcements. (Article 22(1)f) of Directive 2009/28/EC).

(i)Steps to develop transmission and distribution grid infrastructure, intelligent networks, storage facilities and the electricity system, including interconnections, in view of accommodating an increased share of energy produced from renewable sources

Investment in transmission and distribution grid infrastructure

Considerable investment is taking place in electricity network infrastructure over this decade and beyond to ensure the timely connection of renewable and other low carbon generation plant onshore and offshore.

The onshore transmission network in Great Britain (England, Scotland and Wales) is built and owned by three Transmission Owner companies. As regulated monopolies, these companies require approval from the independent regulator, Ofgem, to fund their activities, such as building new network and maintaining assets. This is primarily agreed through price controls where the network companies submit business plans to Ofgem for approval, presenting the outcomes they intend to deliver and the costs for doing so. The network is operated by one Transmission System Operator company.

For the latest transmission price control that runs from 2013-2021 in Great Britain, Ofgem has introduced a new price control framework, designed to help meet the investment and

innovation challenge by introducing more emphasis on incentives to drive the innovation and investment needed to deliver a sustainable energy network that offers value for money to existing and future consumers. Ofgem agreed funding of up to £21.5bn in this price control period for the Transmission Owners to expand, replace and maintain the Great Britain transmission network. This will help ensure that the network can accommodate new generation and demand in a cost effective, secure and timely manner.

Speeding up connections

In the meantime to speed up the connection of new generation projects the Government introduced enduring ‘connect and manage’ grid access reforms in 2010, which are proving successful: to date 201 large, mainly renewable generation projects with a total capacity of 37.05GW have seen their connection time reduced by an average of five years.²⁵

The current distribution price control period runs from April 2010 to March 2015 and has a number of incentives for Distribution Network Operators’ (DNOs) to improve their service to customers including the connections process.

Work is also underway on implementing the next electricity distribution price control period which will run from 2015 to 2023, and which will set out funding for the six Distribution Network Operators’ (DNOs), who own the 14 regional distribution networks. This will include a number of outputs against which performance will be judged. DECC has provided projections on the possible range of renewable energy deployment at distribution level to 2030, which has been used by the DNOs to inform their business plan proposals.

DNOs submitted their business plans for 2015-2023 to Ofgem in July 2013. The business plans set out the DNO proposed activities (and funding) for the price control period. Ofgem published its initial assessment of these plans in November 2013. They proposed to fast-track one DNO’s business plan but asked the other five DNOs to resubmit theirs, addressing greater value for consumers. Ofgem announced the final settlements in November 2014 and issued licence conditions implementing these determinations in February 2015.

In 2014 Ofgem published a guide on getting a connection to the electricity distribution network. The publication clarifies the connections process for all connection customers and also highlights innovative approaches that could be taken to connect distributed generators in constrained parts of the network.

Offshore transmission

For the transmission of generation from offshore sources (e.g. windfarms) to the onshore network, DECC and Ofgem have put in place a competitive regime in which licences to construct and/or operate transmission assets are granted by competitive tender to Offshore Transmission Owners (OFTOs) for a 20-year revenue stream. Our innovative OFTO regime is harnessing competition to create a strong market and deliver value for money. There have now been nine OFTO licences granted by Ofgem, totaling about £1.4bn of investment in offshore transmission through the regime, with a further three preferred bidders also appointed by Ofgem.

²⁵ This figure represents the number, and capacity, of projects connecting through the ‘connect and manage’ reforms between February 2011 and September 31st 2014.

Smart Grids

The Government has continued to work with Ofgem and industry through the Smart Grid Forum (SGF) to engage on the challenges and opportunities posed by GB's move to a low-carbon energy system, particularly for electricity network operators. DECC's rollout of smart meters will provide a platform to support the development of smarter networks.

As part of the electricity distribution price control that ran until 31 March 2015, Ofgem established the Low Carbon Networks (LCN) Fund, which allowed up to £500m for DNOs to carry out smart grid pilot projects. These projects looked at various smart solutions including Active Network Management and Distribution based storage to accommodate accelerated connection of renewables. The next distribution price control period will include a Network Innovation Stimulus. The Stimulus will include an annual Network Innovation Competition (NIC) for electricity network companies. It will also include a Network Innovation Allowance (NIA) which will provide funding to electricity network companies to fund smaller projects that have the potential to deliver financial benefits to the licensed network company and its customers; and/or to fund the preparation of submissions to the NIC.

Interconnection

Great Britain currently has 4GW of interconnection capacity with other countries. The Government recognises the potential of increased electricity interconnection capacity to promote positive impacts on energy costs and security of supply. The UK supported a number of interconnection projects to be selected as Projects of Common Interest under Regulation 347/2013 of the European Parliament, including links with Belgium, France and Norway. The Government developed its evidence base on the potential impacts of further interconnection and published a policy statement in 2013. Ofgem reviewed and consulted on the GB approach to interconnection investment in May 2014. As a result of the consultation, Ofgem decided to open a second application window for projects which may not be eligible to apply to the first window.

The first window for projects to come forward under this new approach ran from 6th August to 30 September 2014. Five projects were eligible under the scheme; one has been granted a cap and floor award and the remaining four are currently being assessed.

Ofgem's recently developed 'cap and floor' regime, initially put in place for the Nemo interconnector between GB and Belgium, provides a more certain revenue stream for interconnector developers and was extended to future electricity interconnection projects in August 2014.

In Northern Ireland there are a range of practices in place to facilitate the development of the transmission and distribution grid infrastructure, intelligent networks, storage facilities and the electricity system, including interconnections, in view of accommodating increased share of energy produced from renewable sources. These are currently under review as a result of the NIE Transmission and Distribution Price control process, which is currently being reviewed by the Competition Commission.

Steps to accelerate authorisation procedures for grid infrastructure and to coordinate approval of grid infrastructure with administrative and planning procedures

Authorisation procedures for grid infrastructure in England and Wales

The Planning Act 2008 has introduced in England and Wales a new, simpler planning system for applications to build nationally significant infrastructure projects (NSIPs), including electricity networks.

National Policy Statements (NPSs), were approved by Parliament in July 2011 and set out the Government's policy for nationally significant infrastructure and provide the primary basis for individual planning decisions.

Smaller electricity networks infrastructure projects which fall below the thresholds set out in the Planning Act will continue to be considered for consent under the existing Electricity Act 1989 regime. The Planning Act thresholds were amended in June 2013 with the aim of ensuring applications for projects are dealt with using the most appropriate processes.

The government has introduced an electronic application service for processing applications under the Electricity Act 1989 for electric lines below the Planning Act threshold in order to help streamline the process. This service is being utilised by the majority of DNOs as a means of processing such applications.

Authorisation procedures in Scotland

In **Scotland**, the Electricity Act 1989 is the main legislation for dealing with consent to install or keep installed overhead electric lines. The power to grant consent has been devolved to Scottish Ministers by the Scotland Act 1998.

Recent steps taken to accelerate the authorisation procedure and to coordinate approval for grid infrastructure have included:

- A review of scoping procedures to streamline and maximise their effectiveness by including statutory consultees/stakeholders from the outset.
- Promoting engagement with developers to ensure that where multiple consents are required for a single or related project the application process is joined up and considered in a streamlined way.
- On line guidance and information on good practice.
- Requiring early engagement with local communities and evidence of this engagement at each stage of the consent process.
- Conducting regular meetings with the licensees to provide updates on current and new projects.
- An Energy Upgrade Forum is held biannually that includes Senior Scottish Government Officials, Senior Managers from the transmission licensees and statutory consultees. This ensures that plans and resources can be prioritised appropriately to expedite applications

- A template “Scotland’s Approach to Planning” has been constructed in collaboration with the two licensees that details actions and responsibilities on individual projects.
- A review of the Necessary Wayleave process; whereby electricity transmission and distribution companies can install their electric lines and associated equipment on, over or under private land; in 2013 with guidance and templates coming into effect from 1 December 2013.
- The Overhead Line Exemption Regulations 1990 have been reviewed and The Overhead Line (Exemption) (Scotland) Regulations 2013 came into force on the 1 November. The main change is the defining of cases where the consent of Scottish Ministers is not required for the installation, or keeping installed, of an electric line above ground.
- Developments deemed to be of national strategic importance have been included in the National Planning Framework.

Authorisation procedures in Northern Ireland

In **Northern Ireland** the primary authorisations for new energy installations or infrastructure are obtained from two separate Northern Ireland government Departments. The Department of the Environment for Northern Ireland (DOENI) administers the planning (i.e. land use) and marine licensing regimes. They will consider if a project complies with Northern Ireland planning law and all EU environmental controls (e.g. Environmental Impact Assessments, Habitats Directive). Other consents may also be required e.g. a generation or transmission licence from the Northern Ireland Utility Regulator.

Under the Electricity (Northern Ireland) Order 1992, the Department for Enterprise Trade and Investment (DETI) is responsible for the grant of consents to construct and operate generating plant above certain output capacities. DETI will consider applications for consent against certain criteria, including criteria that have been determined in accordance with and for the purposes of Article 7(2) of Directive 2009/72/EC (the requirement for Member States to lay down the criteria for the grant of authorisations for the construction of generating capacity in their territory). A similar process operates for overhead lines above a certain voltage.

In terms of actions to accelerate the authorisations of new energy installations and infrastructure, DETI and DOENI have agreed a memorandum of understanding setting out roles, responsibilities and clear lines of communication within which the two Departments will work closely together to ensure that planning, marine licensing and consent applications for all energy infrastructure and installations requiring a consent are brought to the most appropriate decisions as quickly as possible.

(ii) Guaranteeing the transmission and distribution of electricity from renewable sources

Great Britain provides guaranteed access for electricity produced from all types of generators, including renewables, meaning that every connected generator has a guarantee of being able to use the electricity network.

The only reason that generators may not be able to export power is to ensure the reliability and safety of the grid system. On such occasions, Great Britain's balancing market arrangements determine which generator curtails its output.

These generators are compensated and the costs of managing these constraints are spread across all users of the transmission network. Output from renewable generation is well supported through this arrangement as it is usually more cost effective for fossil fuel generators to reduce their output (e.g. because of the fuel costs associated with fossil fuel generators).

(iii) Measures to ensure that Transmission System Operators (TSOs) give priority to renewables when dispatching electricity generating installations

Great Britain has a self-dispatch regime. The TSO is therefore not in charge of dispatching generation installations.

In Northern Ireland, priority is given to:

- a) generating installations using only energy from renewable sources;
- b) generating installations using energy from renewable sources and other energy sources, but which qualify to be treated as hybrid plants in accordance with the criteria set out in the SEM Decision Document;
- c) installations generating electricity from high efficiency co-generation; and
- d) energy to waste plants.

(iv) Measures to minimise the curtailment of renewable electricity

As noted above, Great Britain market arrangements will tend to curtail fossil fuel generators ahead of renewable generators.

In addition, a major programme of transmission reinforcements is underway to ensure the continued reliable performance of the GB transmission system and to connect new generation. This will help to reduce the overall level of transmission constraints.

TSOs in Ireland and Northern Ireland have undertaken a project aimed at Delivering a Secure, Sustainable Electricity System which will consider the operational implications for the power system of managing high levels of renewable generation.

(v) Do TSO/DSOs apply rules on bearing and sharing the costs of the technical adaptations of the grids? Are these rules accessible to public and transparent? What measures have been put in place to implement these provisions, in case they are not yet applied?

The TSO in Great Britain is required to prepare a statement of its connection charging methodology and to send a copy to any person who asks for it. The rules for sharing costs in relation to the distribution networks between initial and subsequent connectees (including generators) are set out in the Electricity (Connection Charges) Regulations 2002.

Both the TSO and DNOs in Great Britain are required not to discriminate against users or classes of users.

In Northern Ireland the methodology for complaints, disputes and appeals is published on the TSO and DSO website. Dissatisfied parties can raise a dispute with the Utility Regulator²⁶.

(vi) Are TSO/DSOs required to bear (in full or part) the grid adaptation costs related to integration of new producers of renewable electricity? What mechanism has been put in place to ensure that cost-sharing is objective, transparent and non-discriminatory?

When connecting to a distribution network in Great Britain, a connectee pays for any assets which they alone will use and a share of any reinforcement they have triggered. The remaining reinforcement costs are recovered from all other customers through distribution use of system charges.

Should someone else connect to those assets within five years, the original connectee will receive a payment from the later connectee. In terms of the transmission network, connection charges relate to the costs of assets installed solely for, and only capable of use by, an individual generator. This is referred to as ‘shallow connection cost charging’.

In other words, the generator pays only for the cost of equipment needed to make the physical connection to the grid. Costs of reinforcement are borne by the Distribution Network Operators. Under Standard Licence Condition C6 of its licence the TSO is required to publish a statement of connection methodology charging²⁷.

In Northern Ireland, to facilitate the connection of renewable generation to the electricity grid whilst respecting the country’s landscape and cultural heritage, the DNO/DO groups or “clusters” generators (generally on shore wind farms) so that they share network infrastructure. Where there is insufficient potential generation in an area to justify a cluster, then generators would continue to be connected on an individual basis.

Clustering large wind farm generators also offers advantages in managing information and control of that part of the system.

(vii) Has the framework on bearing and sharing the grid adaptation costs been reviewed as required in Article 16.4 of the RES Directive? What measures have been taken to improve the rules on cost bearing and sharing?

The framework on bearing and sharing the grid adaptation costs has been reviewed in Great Britain. As reported in the UK’s *First Progress Report on the Promotion and Use of Energy from Renewable Sources for the United Kingdom*, Transmission Network Use of System charges are paid by electricity generators and supply companies. They are calculated to reflect the costs each places on the network.

Following a detailed review of the transmission charging methodology, Ofgem proposed changes to the way the generation share of the charge is calculated to more accurately reflect

²⁶ Utility Regulators Dispute Resolution guidance can be found at:
http://www.uregni.gov.uk/uploads/publications/Utility_Regulator_Appeals_Complaints_and_Disputes_Policy_June_11.pdf

²⁷
<https://epr.ofgem.gov.uk/Content/Documents/Electricity%20transmission%20full%20set%20of%20consolidated%20standard%20licence%20conditions%20-%20Current%20Version.pdf>

the costs imposed by each generator. It is National Grid's responsibility as the Great Britain transmission system operator (TSO) to devise the detailed changes to the transmission charge methodology in accordance with their licence. Ofgem will then decide whether to approve these proposals. Ofgem's review has considered the apportionment of the costs of the grid adaptations between generators, including existing and new renewable generators, as well as the electricity supply companies. Ofgem's consultation and impact assessment on its preferred approach to the detailed changes to the transmission charging methodology closed in October 2013.

A final decision was expected from Ofgem around the end of 2013, with a view to implementing changes in or after April 2014. However, after considering the consultation responses, Ofgem decided to delay the introduction of the changes to the charging mechanism and the changes are now due to come into practice in April 2016.

Each DNO is required by licence to have a connection charging methodology based on a set of principles which Ofgem approve. DNOs are required by licence to review the appropriateness of their methodology at least once every two years.

(viii) What measures have been put in place to ensure that TSO/DSOs are effectively abiding by the rules of Art.16.5 on detailed cost-estimates, timetables for grid connections?

The TSO, National Grid, is required to offer terms of connection, including connection charges to be paid and the date by which the necessary works will be completed to enable connection, to the potential generator within three months of receipt of an application to connect to the network. In addition, the TSO is required to publish a statement of connection methodology charging.

Under the 2010-15 distribution price control period, Ofgem required DNOs to minimum standards of performance, across the whole connection process and also instituted mandatory information provision to provide different types of generator with connection information suited to their needs.

Under the new price control period (2015-2023) Ofgem will introduce a new Incentive for Customer Engagement (ICE) which will provide an incentive to DNOs to understand and meet the needs of large connecting customers. Ofgem also intends to introduce an incentive for those DNOs who meet above industry average quotation and connection times.

(ix) What measures are applied to ensure non-discriminatory transmission and distribution tariffs for RES electricity and gas from renewable sources?

Renewable generators are subject to the same charging mechanisms as non-renewable generators by the transmission and distribution networks. Efficient economic signals are provided to transmission network users as services are priced to reflect the incremental costs of supplying them i.e. they reflect the impact that users at different locations have on the TOs costs. These charges are applied to all generators on a consistent basis and therefore do not discriminate against renewable generation located in peripheral regions.

Transmission charging

Transmission charges are reflective of the TOs costs. These costs primarily defined as the investment costs in the transmission system, maintenance of the transmission system and maintaining a system capable of providing a secure bulk supply of energy. Smaller generators connected at 132kV in Scotland may in some circumstances be entitled to a 25% discount. All of this is set out in National Grid's *Use of System Charging Methodology Statement*²⁸.

Some changes to the way generators' transmission charges are calculated are likely to be implemented around April 2016 as a result of Ofgem's review of the charging regime under Project TransmiT. Ofgem's 'minded-to' position includes proposals that will narrow the difference in generation tariffs between the north and south of Britain, introduce an element of network sharing for intermittent generation, and will also be more cost-reflective of system use. The proposals will not reduce the significant costs associated with building and running future sub-sea links. In terms of how these proposals affect the significant renewables potential of the Scottish islands, an inter-governmental group has been considering this and other matters relating to future island renewable energy development since 2012, and DECC is currently looking at further options for additional support for island renewables.

Distribution charging

The distribution charging mechanism varies depending on whether the generation station is located on the Extra High Voltage network (33kV in Scotland, and 33kV and 132kV in England) or on the lower voltages of the distribution network. For generators located on the lower voltages, a new charging methodology came into effect from 1 April 2010 where all generators receive a credit for units exported to the network. The unit rate is negative to reflect the benefits that distributed generation provide to the network by siting close to demand customers.

The charging methodology differentiates between intermittent (e.g. some renewable) generation and non-intermittent generation. In the case of intermittent generators the negative unit charge is a single rate for each kWh exported while in the case of non-intermittent the negative unit rate varies depending on the time of day (e.g. units exported at time of peak network load receive a higher credit than units exported during times of low load). Most generators will also pay a small (positive) fixed charge and a (positive) reactive power unit charge. Total distribution use of system bill for generators located on the lower voltages will typically be negative as the fixed charge and reactive charges are relatively small.

From 1 April 2011, DNOs have had to choose one of two common methodologies, which were developed by the industry, to calculate charges for their Extra High Voltage customers. These new methodologies are more cost reflective and locational cost signals to customers, so as to facilitate more efficient decisions in relation to choosing a location to connect to DNOs' networks and enduring use of the network.

Transmission and distribution in Northern Ireland

In **Northern Ireland** the current rules for 'Transmission use of System' allow a fixed charge per MW of capacity for all generation greater than 5 MW (reduced from 10MW from 1 Oct 2012) irrespective of technical characteristics. A new incremental rule has also been implemented for distribution connector generators (i.e. a 7MW generator will be charged for 2MW, a 12MW generator will be charged for 7MW etc).

²⁸ For further information see National Grid website at: <http://www.nationalgrid.com/uk/Electricity/Charges/chargingstatementsapproval/>

3. Support schemes currently in place to promote energy from renewable sources. (Article 22(1)b) of Directive 2009/28/EC).

The Commission reminds Member States that all national support schemes must respect the state aid rules as foreseen in Articles 107 and 108 of the Treaty on the Functioning of the EU. The notification of the report in accordance with Article 22 of Directive 2009/28/EC does not replace a state aid notification in accordance with Articles 107 and 108 of the Treaty on the Functioning of the EU.

It is suggested that **table 3** is used to provide more detailed information on the support schemes in place and the support levels applied to various renewable energy technologies. Member States are encouraged to provide information on the methodology used to determine the level and design of support schemes for renewable energy.

The UK has a number of support schemes in place across the heat, transport and electricity sectors which collectively provide around £3.5bn of support for renewable electricity²⁹ in 2014/15 and up to approximately £660m for heat between 2013/14 and 2014/15.

Table 3: Support schemes for renewable energy for 2013 and 2014.

Renewables support schemes year 2013		Per unit support	Total (M£)
Biofuels calendar year 2013			
RTFO	Obligation/quota (%)	4.75% (by vol.)	-
	Penalty/Buy out option/ Buy out price (£/unit)	0.30	-
	Average certificate price	9.5 ³⁰	-
	Tax exemption/refund	-	-
	Investment subsidies (capital grants or loans) (€/unit)	-	-
	Production incentives	-	-
	Feed-in tariff	-	-
	Feed-in premiums	-	-
	Tendering	-	-
Total annual estimated support in the electricity sector		-	-
Total annual estimated support in the heating sector		-	242*
Total annual estimated support in the transport sector		-	398m ³¹

Renewables support schemes year 2014		Per unit support	Total (M£)
Biofuels calendar year 2014			
RTFO	Obligation/quota (%)	4.75%	-
	Penalty/Buy out option/ Buy out price (£/unit)	0.30	-
	Average certificate price	**	-
	Tax exemption/refund	-	-
	Investment subsidies (capital grants or loans) (€/unit)	-	-
	Production incentives	-	-
	Feed-in tariff	-	-
	Feed-in premiums	-	-
	Tendering	-	-
Total annual estimated support in the electricity sector		-	3,540**
Total annual estimated support in the heating sector		-	424*
Total annual estimated support in the transport sector		-	***

* Total budget available.

²⁹ <https://www.gov.uk/government/news/controlling-the-cost-of-renewable-energy>

³⁰ Using data from NFPAs e-TOC auction site - www.nfpas-auctions.co.uk/etoc/trackrecord.html. This information is based on sales from smaller suppliers via the auction and does not take account of direct trades between companies which make up the bulk of RTFC transactions, and for which price data is not available. Information on numbers of RTFCs which sell at different prices is unavailable from NFFA so these figures are un-weighted averages across all applicable Obligation Periods, and therefore these figures may not be fully representative of RTFC values. NFPAs e-TOC stopped trading RTFCs in January 2014. Since then we can no longer observe the traded prices.

³¹ Estimate for 2013/14 financial year

Renewables Obligation (RO)

The Renewables Obligation (RO) has been the main financial mechanism since 2002 by which the Government incentivises the deployment of large-scale renewable electricity generation in the UK. It places an obligation on UK electricity suppliers to source an increasing proportion of electricity they supply from renewable sources.

The RO operates as three separate, but complementary, mechanisms working together- one for England and Wales, and one each for Scotland and Northern Ireland. In the first 12 years after its introduction, the RO succeeded in supporting the deployment of increasing amounts of renewable generation from 3.1GW in 2002 to 24.6GW in 2014, and increasing the level of renewable electricity generation in the UK from 1.8% in 2002 to 19.1% in 2014 (*international definition basis*)³².

The RO will close to new capacity in 2017 (with some exceptions) as we transition to the Contract for Difference (CfD), which is expected to provide support for large-scale renewables in a more cost-effective way.

The RO closed to large-scale solar PV on 1 April 2015. On 17 December 2015 the UK government announced the RO would close to solar PV, with a capacity at 5MW and below, from 1 April 2016. This early closure was due to solar PV deploying much faster than previously expected.

On 18 June 2015 the UK government announced that it intended to introduce primary legislation to close the RO early across Great Britain to new onshore wind generating stations from 1 April 2016 with grace periods.

Following a consultation held in 2014/15, the UK Government announced that the support rate under the RO for new biomass conversion and co-firing projects will no longer be covered by Government's grandfathering policy (with some exceptions). This action was necessary because of concerns that biomass conversion and co-firing projects were likely to deploy at higher rates than had been expected under the RO.

The Government's priority is to ensure that support for low carbon technologies represent value for money, whilst ensuring energy bill for families and businesses are kept as low as possible. Government support has already driven down the cost of renewable energy which makes it easier for the renewables industry to survive without large subsidies.

Contracts for Difference (CfDs)

A Contract for Difference (CFD) is a private law contract between a low carbon electricity generator and the Low Carbon Contracts Company (LCCC) a Government-owned company. It is a key mechanism of the Electricity Market Reform programme, alongside the Capacity Market and Electricity Demand Reduction pilot.

³² https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/437937/Renewable_energy_in_2014.pdf

A generator party to a CFD is paid the difference between the ‘strike price’ – a price for electricity reflecting the cost of investing in a particular low carbon technology – and the ‘reference price’ – a measure of the average market price for electricity in the GB market. This gives greater certainty and stability of revenues to electricity generators by reducing their exposure to volatile wholesale prices, whilst protecting consumers from paying for higher support costs when electricity prices are high. In this way, CFDs provide efficient long-term support for all forms of low carbon generation.

The payments made to generators are calculated and paid out by the LCCC. The cost of CFDs are met by consumers via a supplier obligation; a levy on electricity suppliers. Only generators with capacities of 5MW or greater are eligible for the CFD, and a generator cannot hold both the CFD and another form of support, such as the RO.

The first competitive CFD auction successfully completed in March 2015. 25 contracts, worth over £300m per year, were signed by a range of developers, including independent and smaller-scale companies, across Great Britain. This could deliver over 2GW of new renewable energy capacity, enough to power 1.4m homes, and lead to the UK emitting 4m fewer tonnes of CO₂ per year. Competition in allocating these CFDs has driven down costs to consumers, securing the capacity for up to £105m per less than it would have cost in absence of competition. This also delivered savings of around 20% against the administrative price for offshore wind.

Work is now underway to set out the next stages in our long-term commitment to move to a low carbon economy, moving from demand-led to competition-led schemes, and giving the renewables industry greater certainty over future support, this includes three new CfD auctions in this Parliament.

The Feed in Tariff (FiT) Scheme

The objective of FITs is to incentivise the deployment of small scale low carbon electricity generation by individuals, householders, organisations, businesses and communities. It supports solar photovoltaic, hydro, anaerobic digestion and wind projects up to 5MW and micro CHP installations up to 2kW. Under the scheme generators receive three sources of income/savings:

- **Generation tariff** - a payment for every kWh generated, dependent on the technology and capacity of the installation, and date installed.
- **Export tariff** - an additional payment for every kWh exported to the local electricity network, currently set at 4.85p/kWh
- **Bill savings** - additional benefit from usage of electricity “onsite” as opposed to paying the retail price for importing that energy from the grid

Full details of all tariffs are on the Ofgem website³³.

The scheme has been extremely popular, with over **782,000 installations (4.0 GW capacity) registered by the end of October 2015**³⁴. Of these, around **99% are solar PV** installations (84% of capacity). The Government carried out a review of the FiTs Scheme, as required by

³³ <https://www.ofgem.gov.uk/environmental-programmes/feed-tariff-fit-scheme/tariff-tables>

³⁴ <https://www.gov.uk/government/statistics/monthly-small-scale-renewable-deployment>

our EU State Aid approval process, between 27 August and 23 October 2015. The Government Response to the consultation can be found at:

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/486082/FITs_Review_Govt_response_Final.pdf

The main decisions include:

- Updated generation tariffs, revised in response to evidence on technology costs received during the consultation.
- Deployment cap to limit spend on the scheme to £100m up to the end of 2018/19.
- The reintroduction of pre-accreditation for solar PV and wind generators over 50kW and all hydro and anaerobic digestion generators.
- Measures to pause new applications for a short period.

The Renewable Heat Incentive

The RHI, the first of its kind in the world, opened for non-domestic applicants at the end of November 2011. The domestic phase opened for applicants in Spring 2014. Both phases, and schemes, are designed to incentivise uptake of renewable heat by paying owners of eligible technologies tariffs to assist with the costs of installing and running the systems.

The RHI pays participants of the scheme that generate and use renewable energy to heat buildings or inject biomethane into the national gas grid. The non-domestic RHI scheme supports renewable heat installations in business, industry and the public sector, as well as heat networks.

The non-domestic RHI has delivered support for over 5TWh of renewable heat generation and almost 13,000 accreditations since its launch in 2011 to October 2015. Domestic RHI has supported 43,000 accreditations since its launch in 2014 to October 2015. Further details can be found in the RHI monthly Statistics³⁵.

Further support for the RHI scheme was announced on 25 November 2015 as part of the Spending Review³⁶. The government will increase funding for the RHI to £1.15 billion in 2021 to ensure that the UK continues to make progress towards its climate goals while reforming the scheme to improve value for money. We intend to consult on the future of the RHI Programme in 2016, but this is subject to change.

3.1. Information on how the UK guarantees electricity is from renewable sources. (Article 22(1)b) of Directive 2009/28/EC).

In accordance with article 15(7) of the Renewable Energy Directive, guarantees of origin are used by electricity suppliers for the purpose of proving the share or quantity of energy from renewable sources in their energy mix. The relevant legislation is the Electricity (Fuel Mix Disclosure) Regulations 2005, schedule 2ZB to the Electricity Act 1989 and electricity supplier standard licence condition 21.

³⁵ <https://www.gov.uk/government/statistics/rhi-deployment-data-october-2015>

³⁶ <https://www.gov.uk/government/publications/spending-review-and-autumn-statement-2015-documents>

4. Information on UK support schemes which provide additional benefits albeit at higher cost. This includes biofuels made from wastes, residues, non-food cellulosic material, and ligno-cellulosic material? (Article 22 (1)c of Directive 2009/28/EC).

The UK is providing support for bioliquid electricity generation at a level which is unlikely to cause a significant diversion from other key sectors, such as transport, and within the limits of sustainable supply. Under the Renewables Obligation, electricity generated from bioliquids is eligible for Renewable Obligation Certificates (ROCs). The ROC rate for different renewable technologies was set following a banding review and consultation in 2012/13 which set the rates for 2013 to 2017³⁷ which considered the levelised costs and other costs/benefits of renewable generation. This consultation also set out the UK's decision to impose a cap on the number of bioliquids ROCs at 4% of a supplier's annual obligation. This is broadly equivalent to 2 TWh/year in 2017, equivalent to the Government's estimate of the amount of electricity that can be generated from bioliquids without diverting supplies from other sectors.

The Renewables Obligation has mandatory sustainability criteria for bioliquids/biofuels as set out in the Directive 2009/28/EC, so ROCs will only be issued to energy generated from bioliquids that comply with these requirements. Generators are also required to report, to Ofgem, sustainability information from electricity generated from bioliquids, as well as from biomass and biogas.

Article 21(2) of the Renewable Energy Directive was implemented in UK law on 15 December 2011 resulting in double counting for biofuels made from wastes, residues, non-food cellulosic material, and ligno-cellulosic material. This means that qualifying fuels attract two RTF certificates rather than one per litre of biofuel supplied to the UK market.

5. Information on how the UK guarantees that electricity and heating & cooling is derived from renewable sources. (Article 22(1)d of Directive 2009/28/EC).

Ofgem administers the Renewable Energy Guarantee of Origin (REGO) scheme in Great Britain. It also administers the REGO scheme in Northern Ireland on behalf of the Northern Ireland Authority for Utility Regulation.

The relevant legislation for the REGO scheme is:

- for Great Britain, the Electricity (Guarantees of Origin of Electricity Produced from Renewable Energy Sources) Regulations 2003, as amended in 2010.
- for Northern Ireland, the Electricity (Guarantees of Origin of Electricity Produced from Renewable Energy Sources) Regulations (Northern Ireland) 2003 as amended in 2008, 2010 and 2011.

For Ofgem to issue a REGO, it must be satisfied that the electricity in question has been generated by a renewable source. Ofgem does not currently issue REGOs for heating or cooling.

³⁷ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/42852/5936-renewables-obligation-consultation-the-government.pdf

A REGO can only be requested for the proportion of electricity generated by an individual generating station located in GB or NI using eligible renewable energy sources. A generating station must be accredited by Ofgem before it will consider a request for a REGO.

All requests for REGOs made before 5 December 2010 were calculated on the basis of one REGO per kWh of renewable source electricity. From 5 December 2010 onwards, following the 2010 Regulation amendments, all requests for REGOs made are calculated on the basis of one REGO per MWh of renewable source electricity. The unit of issue is dependent on the 2010 Regulation amendment date, NOT the month of generation. All claims for REGOs will be rounded up or down to the nearest whole unit i.e. kWh or MWh, with any exact half being rounded upwards. If less than half a MWh is generated for a period, no REGOs will be issued.

All REGOs issued have a unique guarantee sequence number. Following a request for REGOs, Ofgem check the data submitted and determine whether they are able to issue REGOs. REGOs will be issued automatically into an operators account on the Register. Once issued, they will remain within the Register to avoid double counting.

If Ofgem discover, possibly as a result of an audit, that a generating station was never eligible for REGOs they shall revoke all of the REGOs issued to that station. Ofgem has a fraud prevention strategy in place for the administration of the REGO scheme and the other Renewables & CHP incentive schemes it administers. As required by legislation Ofgem also recognises Guarantees of Origin from other member states when requested.

6. Biomass availability for energy in 2013 and 2014. (Article 22(1)g) of Directive 2009/28/EC).

The Renewables Obligation, Renewable Heat Incentive and Contracts for Difference include support for biomass and biogas technologies. In 2015 the UK decided that sustainability criteria for biomass and biogas receiving support under these three schemes would become mandatory, following consultations in 2013³⁸ and 2014³⁹. The criteria are based on the recommendations from the European Commission⁴⁰ and include a minimum 60% lifecycle greenhouse gas savings requirement and a land criterion. For woody biomass, the land criteria is based on the Timber Standard⁴¹ and is designed to protect certain habitats from exploitation and take into account a range of social, economic and environmental issues including protecting biodiversity, land use rights, sustainable harvesting and regeneration rates. Other biomass types may not be sourced from protected areas. There are certain exemptions to the land criteria and greenhouse gas saving requirement, including for wastes. Generators with capacity greater than or equal to one megawatt must also complete an annual sustainability audit of the biomass they have used. In addition all woody biomass is expected to comply with the EU Timber Regulation⁴².

Ofgem publish biomass sustainability information from the Renewables Obligation (RO), alongside the [RO Annual Report](#), on their website. Generators are required to report to the best of their knowledge and belief, so not all the data has been fully verified. Also some

³⁸ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/231102/RO_Biomass_Sustainability_consultation_-_Government_Response_22_August_2013.pdf

³⁹ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/343005/Response_to_Biomass_Consultation.pdf

⁴⁰ COM(2010)11 and SWD(2014)259

⁴¹ <https://www.gov.uk/government/publications/timber-standard-for-heat-electricity>

⁴² Regulation (EU) No. 995/2010 of the European Parliament and of the Council of 20 October 2010 laying down the obligations of operators who place timber and timber products on the market (OJ L 295, 12.11.2010, p.23)

generators were not required to report quantities of biomass. Exemptions included the size of biomass, generators “not regularly” using biomass, reporting elsewhere or where biomass was from waste of wholly derived from waste.

Links to this data, covering 2012/13 and 2013/14 are below:

<https://www.ofgem.gov.uk/publications-and-updates/biomass-sustainability-dataset-2012-13>

<https://www.ofgem.gov.uk/publications-and-updates/biomass-sustainability-dataset-2013-14>

Table 4: Sources of biomass for energy generation in Transport.

	UK				EU				Non EU			
	Mass of material (tonnes)		Ktoe		Mass of material (tonnes)		Ktoe		Mass of material (tonnes)		Ktoe	
Feedstock	2013	2014	2013	2014	2013	2014	2013	2014	2013	2014	2013	2014
Acid oil from UCO	-	-	-	-	-	64	-	0.06	-	8	-	0.01
Barley	-	11709	-	7.40	-	-	-	-	-	-	-	-
Brown grease	235	1792	0.21	1.59	-	-	-	-	-	633	-	0.56
Corn ¹⁵	-	-	-	-	158656	169194	100.22	106.88	156881	130787	99.103	82.619
Crude glycerine	637	11	0.31	0.01	23960	769	14.58	0.37	14878	368	8.76	0.18
Food waste	-	-	-	-	-	807	-	0.71	-	-	-	-
Municipal organic waste	1729	1635	2.07	1.95	-	-	-	-	-	-	-	-
Oilseed rape	4787	19265	4.24	17.06	11085	65845	10.08	58.31	1403	8385	1.84	7.43
Palm	-	-	-	-	-	-	-	-	24462	26029	21.66	23.05
Palm oil mill effluent	-	-	-	-	-	-	-	-	9836	11517	8.71	10.20
Soapstock acid oil contaminated with sulphur	-	257	-	0.23	-	1557	-	1.38	-	-	-	-
Soy	-	-	-	-	-	-	-	-	20779	10021	18.40	8.87
Spent bleaching earth	-	-	-	-	-	-	-	-	5710	4940	5.06	4.37
Starch slurry	-	-	-	-	5718	55034	3.61	34.77	-	-	-	-
Sugar beet	45950	51315	29.03	32.42	81495	53158	50.60	33.04	-	-	-	-
Sugar beet tops, tails, chips & process water	-	-	-	-	-	10481	-	5.05	-	-	-	-
Sugar cane	-	-	-	-	-	-	-	-	58228	24193	36.78	15.28
Tallow - category 1	35700	54952	31.62	48.67	53219	75734	47.13	67.07	1994	7808	1.77	6.92
Tallow - category 3 or unknown	2972	1016	2.63	0.90	115	10	0.10	0.01	-	1742	-	1.54
Triticale	-	-	-	-	117	-	0.07	-	-	-	-	-
Used cooking oil	144092	133388	127.61	118.13	183060	203228	162.12	179.98	186378	225995	165.06	200.14
Waste pressings from production of vegetable oils	-	-	-	-	-	-	-	-	-	2218	-	1.96
Wheat	64470	103627	40.73	65.46	84617	52993	53.45	33.48	-	428	-	0.27
Grand Total	300572	378968	238.43	293.80	602042	688874	441.98	521.10	480549	455072	367.14	363.41

* Amount of raw material if possible in m3 for biomass from forestry and in tonnes for biomass from agriculture and fishery and biomass from waste

** The definition of this biomass category should be understood in line with table 7 of part 4.6.1 of Commission Decision C (2009) 5174 final establishing a template for National Renewable Energy Action Plans under Directive 2009/28/EC

Table 4a. Current domestic agricultural land use for production of crops dedicated to energy production (ha)

Land use	Surface (ha)	
	2014	2013
1. Land used for common arable crops (wheat, sugar beet etc) and oilseeds (rapeseed, sunflower etc.) (Please specify main types)	112,000*	42,000
2. Land used for short rotation trees (willows, poplars). (Please specify main types)	3,000	3,000
3. Land used for other energy crops such as grasses (reed canary grass, switch grass, Miscanthus), sorghum. (Please specify main types)	7,000	7,000

*includes maize used in anaerobic digestion, which was not captured / recorded in the 2013 figures.

7. Information on changes in commodity prices and land use, within the UK, due to increased use of biomass. (Article 22(1) h) of Directive 2009/28/EC).

We currently have no evidence linking commodity prices with land use change within the UK.

8. Description of the development and share of biofuels made from wastes, residues, non-food cellulosic material, and ligno cellulosic material. (Article 22(1) i) of Directive 2009/28/EC).

The UK Department for Transport regularly publishes statistics on the deployment of biofuels. The latest information can be found at:

<https://www.gov.uk/government/collections/biofuels-statistics>

9. Information on the estimated impacts of the production of biofuels and bioliquids on biodiversity, water resources, water quality and soil quality within the UK in the preceding 2 years. (Article 22 (1) j) of Directive 2009/28/EC).

The Joint Nature Conservation Committee (JNCC), the UK Government's statutory advisor on UK and international nature conservation, commissioned a report in 2013 to look at the impacts on UK biodiversity from the production of biofuels and bioliquids from domestic feedstocks. The report looked at the potential of using bird population data as a proxy for broader biodiversity. The latest study can be found at:

<http://jncc.defra.gov.uk/default.aspx?page=4229>

In addition, the table below shows the amount of biofuels produced by producers which have registered to voluntary sustainability schemes.

Biofuels from UK by voluntary schemes (ktoe)	2013	2014
Abengoa RED Bioenergy Sustainability Assurance	57	84
Biomass Biofuels voluntary scheme	-	19
Ensus Voluntary Scheme under RED for Ensus Bioethanol Production	26	28
International Sustainability & Carbon Cert.	928	1030
Red Tractor (pre-RED)	6	-

Red Tractor v2.02	12	-
Other schemes	-	-
By- product (no crop impact)	563	670
No scheme or unknown	19	17
Percentage of biofuels complying with a voluntary scheme accepted by the UK / EC[3] or from 'by-products'	99.6	100

10. What is your estimate of net greenhouse gas savings due to the use of energy from renewable sources. (Article 22 (1) k) of Directive 2009/28/EC).

The UK has used the methodology set out in the Renewable Energy Directive for estimating greenhouse gas (GHG) savings from the use of renewable sources of energy. Action on renewable energy alone will not be enough to meet the UK's ambitious target on emissions for 2050. Wider action is needed to reduce GHG emissions through well-functioning emissions trading scheme and the UK Government's system of Carbon Budgets.

Table 6: Estimated GHG emission savings from the use of renewable energy (t CO₂eq)

Environmental aspects	2013	2014
<i>Total estimated net GHG emission saving from using renewable energy⁴³</i>	<i>39,375,014</i>	<i>44,437,819</i>
- Estimated net GHG saving from the use of renewable electricity	36,761,180	41,507,940
- Estimated net GHG saving from the use of renewable energy in heating and cooling	-	-
- Estimated net GHG saving from the use of renewable energy in transport	2,613,834*	2,929,879*

*figures DO NOT include emissions from ILUC

11. Please report on (for the preceding 2 years) and estimate (for the following years up to 2020) the excess/deficit production of energy from renewable sources compared to the indicative trajectory which could be transferred to/imported from other Member States and/or third countries, as well as estimated potential for joint projects until 2020. (Article 22 (1) l, m) of Directive 2009/28/EC).

In 2014, 7.0% of UK energy consumption came from renewable sources. This is up from 5.6% in 2013 and results in an average of 6.3% over 2013-14, against the second interim target of 5.4%.

In addition, improvements to our understanding of the renewable heat market in the UK have seen upward revisions to our 2011 and 2012 figures, which are now 4.2% and 4.7% respectively⁴⁴. As a result, the UK reached 4.45% of final energy consumption from renewables for 2011-12, an improvement on the previously reported figure of 4.0%, and ahead of the interim target of 4.04%. The UK has also been ahead of the heating & cooling and electricity projections laid out in our National Renewable Energy Action Plan (NREAP).

For heating and cooling, our NREAP projected 2% would come from renewable sources in 2013 and in 2014; we achieved 3.8% in 2013 and 4.5% in 2014. Electricity from renewable sources has been particularly strong. Our NREAP projected 13% in 2013 and 14% in 2014 of electricity would come from renewable sources; we achieved 13.8% in 2013 and 17.8% in 2014.

⁴³ The contribution of gas, electricity and hydrogen from renewable energy sources should be reported depending on the final use (electricity, heating and cooling or transport) and only be counted once towards the total estimated net GHG savings.

⁴⁴ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/437937/Renewable_energy_in_2014.pdf

Looking ahead, the UK remains committed to achieving the 2020 target through the most cost-effective and sustainable action. Policies to date have brought forward a strong deployment pipeline across a range of technologies and we continue to have a robust suite of financial and other measures from which to continue to increase deployment in line with the plans set out in the UK National Renewable Energy Action Plan.

However, there are a number of uncertainties which prevent the UK from providing estimates of surplus or deficits across the three energy sectors of heat, electricity and transport, beyond 2015/16 with sufficient confidence. We have therefore entered ‘-’ into the table. In particular:

- On heat, increased funding has been announced which will see the budget level of the current scheme (RHI) increase from c£400m in 2014/15 to £1.15bn in 2020/21. Alongside this budget increase the UK Government intends to consult on proposed reforms to increase the cost effectiveness of the scheme.
- On transport, a consultation will be launched in 2016 on increasing the amount of biofuels in transport. Changes on the back of this consultation will not be implemented before 2016 and therefore it is difficult at this stage to prejudge the impact they may have.

We will continue to monitor growth across all sectors to enable us to adjust our strategy as needed in the years to come.

Table 7: Actual and estimated excess and/or deficit (-) production of renewable energy compared to the indicative trajectory which could be transferred to/from other Member States and/or third countries in UK (ktoe)^{45, 46}

	Year n-2 (2013)	Year n-1 (2014)	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Actual/estimated excess or deficit production (Please distinguish per type of renewable energy and per origin/destination of import/export)	5.6%	7.0%	+0.2%	+0.7%	+0.6%	+1.0%	-	-	-	-	-	-

11.1. Details of statistical transfers, joint projects and joint support scheme decision rules.

No procedures have been established.

12. Information on how the share of biodegradable waste in waste used for the production of energy has been estimated. (Article 22 (1) n of Directive 2009/28/EC).

Under the Renewables Obligation, ROCs cannot be awarded for electricity generated from fossil fuel or fossil-derived material, only for renewables. Those materials with a renewable content less than or equal to ten per cent (by energy content) are not considered renewable and instead treated as “non-renewable waste” which is not eligible for support under the RO scheme.

⁴⁵ Please use actual figures to report on the excess production in the two years preceding submission of the report, and estimates for the following years up to 2020. In each report Member State may correct the data of the previous reports.

⁴⁶ When filling in the table, for deficit production please mark the shortage of production using negative numbers (e.g. -x ktoe).

In line with the legislation the regulator OFGEM has put in place detailed Fuel Metering and Sampling (FMS) procedures⁴⁷ for assuring an accurate calculation of the proportion of biodegradable material. The operator must be able to account for the proportion of renewable content, and the regulator has the power to require further testing and sampling to occur to provide assurance of the proportion of renewable content. This sampling and testing of the material is often undertaken by independent accredited laboratories. Furthermore, Ofgem undertakes an audit programme and selects a group of generating stations each year for further audit and verification.

13. Description of how the UK has involved the public to help inform policies on the use and promotion of renewable energy.

The requirements set out in the Convention fit well with the published consultation principles guidance as set out by the Cabinet Office⁴⁸. Specific examples of public consultations include:

- The public consultation in 2013 on the Electricity Market Reform programme.
- A consultation held over 2014/15, led the UK Government to announce that the support rate under the RO for new biomass conversion and co-firing projects will no longer be covered by Government's grandfathering policy (although some exceptions will be made).
- In 2015 the UK is introducing mandatory sustainability criteria for biomass and biogas receiving support under the RO, RHI and CFD schemes, following consultations in 2013⁴⁹ and 2014⁵⁰.

⁴⁷ <https://www.ofgem.gov.uk/publications-and-updates/renewables-obligation-fuel-measurement-and-sampling-guidance>

⁴⁸ <https://www.gov.uk/government/publications/consultation-principles-guidance>

⁴⁹ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/231102/RO_Biomass_Sustainability_consultation_-_Government_Response_22_August_2013.pdf

⁵⁰ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/343005/Response_to_Biomass_Consultation.pdf