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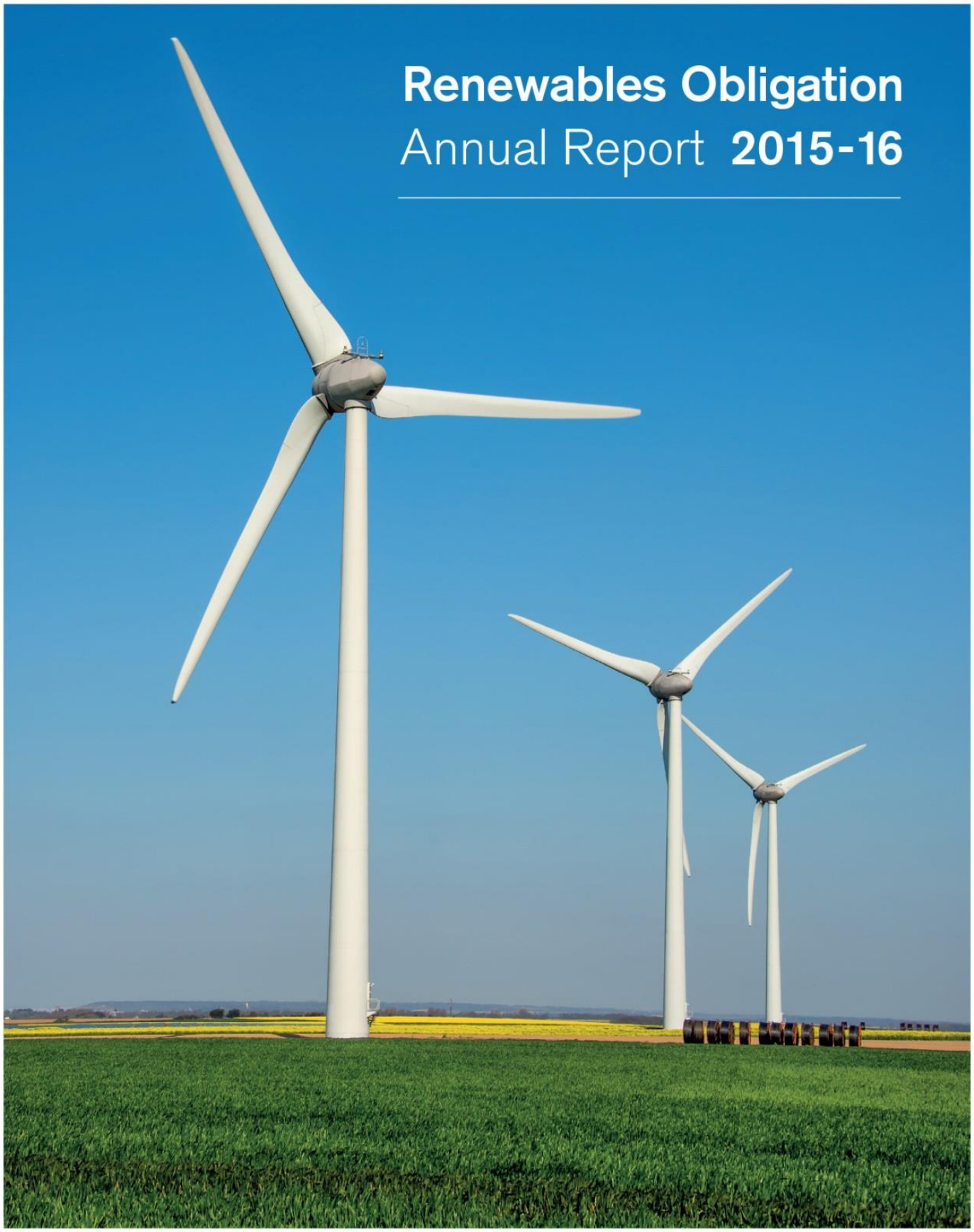
Renewables Obligation
Annual Report 2015-16



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Context

The Renewables Obligation (RO) is a scheme which supports the deployment of large-scale renewable electricity generating stations in the United Kingdom (UK). It puts an obligation on licensed electricity suppliers to source some of their supply from renewables, a proportion which increases every year.

The scheme was introduced in England, Wales and Scotland in 2002 and in Northern Ireland in 2005. There are three separate obligations across the UK: the Renewables Obligation England and Wales (RO), the Renewables Obligation Scotland (ROS) and the Northern Ireland Renewables Obligation (NIRO). The scheme is governed by three separate, but similar, pieces of legislation[1] for each obligation. These are known as the RO Orders ('the Orders').

The scheme obligation period runs annually from 1 April to 31 March. The obligation level for suppliers is announced before the start of each obligation period by the Department for Business, Energy and Industrial Strategy (BEIS) on behalf of the Secretary of State. During an obligation period, we accredit generating stations under the scheme and issue them with Renewables Obligation Certificates (ROCs) for the renewable electricity they generate. ROCs are tradable and can be sold between parties.

After the end of an obligation period, we confirm each supplier's obligation based on the obligation level and the amount of electricity it has supplied to its customers. We set this obligation as a number of ROCs. Suppliers must meet their obligations by presenting ROCs to us, making a payment per ROC into a buy-out fund, or through a combination of these. We then redistribute buy-out payments to suppliers in proportion to the number of ROCs they presented. We also take our scheme administration costs from the buy-out fund.

The Gas and Electricity Markets Authority (the Authority) is the body responsible for administering the RO and ROS in GB. We also administer the NIRO on behalf of the Utility Regulator Northern Ireland (UREGNI), however UREGNI retains the statutory responsibility for administering the NIRO. The Authority's day-to-day functions are performed by Ofgem. E-Serve is the division of Ofgem that delivers environmental and social schemes, including the RO, for the government.

The Orders require us to produce an annual report on the scheme by 1 April following the end of an obligation period. Much of the information in this report is included as part of our legal obligations but we have also included additional information that we think is relevant and beneficial to scheme stakeholders and the general public.

[1] The Renewables Obligation Order 2015 (RO), Renewables Obligation (Scotland) Order 2009 (ROS) and Renewables Obligation Order (Northern Ireland) 2009 (NIRO) and their respective amendments.

Associated documents

The annual reports for all previous obligation periods are published on the Publications library: RO page within the RO section of our website:

https://www.ofgem.gov.uk/environmental-programmes/ro/contacts-publications-and-data/publications-library-renewables-obligation-ro

More up-to-date data on scheme activity is published on the Public reports and data: RO page within the RO section of our website:

https://www.ofgem.gov.uk/environmental-programmes/ro/contacts-publications-and-data/public-reports-and-data-ro

A variety of data reports are available to download from the Renewables and CHP Register:

https://renewablesandchp.ofgem.gov.uk/

Information for generators accredited (or those who wish to become accredited) under the RO is available here:

https://www.ofgem.gov.uk/environmental-programmes/ro/applicants

Information for licensed UK electricity suppliers on how to comply with the RO is available from our website here:

https://www.ofgem.gov.uk/environmental-programmes/renewables-obligation-ro/information-suppliers

Contents

Executive summary

Renewables Obligation 2015-16

This report covers the 2015-16 obligation period (1 April 2015 – 31 March 2016).

ROCs issued and renewable generation

In 2015-16, 90.4 million ROCs were issued based on 69.1TWh electricity generated by stations accredited under the scheme. The total electricity supplied in the UK was 295.8TWh; therefore renewable generation under the RO was equivalent to 23.4% of the UK electricity supply market. When combined with the 5.6TWh generated by FIT installations, this figure rises to 25.2%, an increase of 5.3 percentage points over last year's figure.

The number of ROCs issued was above the total UK supplier obligation of 84.4 million ROCs. Between them, offshore and onshore wind received the largest share of ROCs. ROCs issued to fuelled stations almost doubled in the last two years, holding the third largest share of ROCs. Solar photovoltaic (PV) more than doubled since 2014-15 with electricity generated by this technology accounting for 7.8% of all ROCs issued during 2015-16.

An equivalent of 33.7 million tonnes of carbon dioxide (CO_2e) emissions were avoided through renewable electricity generation under the scheme. This is a 14.4% increase from last year, in line with the growth in the number of ROCs we issued and the amount of renewable generation.

Generating stations accredited

In 2015-16 we accredited 6,724 generating stations, a small increase from the 6,658 stations accredited in 2014-15. As with last year, this was driven up by the high number of micro NIRO generators accredited (6,308), over 99% of which were domestic solar PV installations.

Excluding Micro NIRO stations, we accredited 416 generating stations, almost exactly the same as the 415 accredited in 2014-15, half of which were solar PV stations.

The aggregate capacity of the stations we accredited during 2015-16 was 2,033MW. Solar PV represented 58.2% of this, making it now the second largest technology by capacity in the RO. It has now taken the place of offshore wind which was the second largest technology at the end of 2014-15, now the third largest. The most prolific technology is onshore wind. Between them these three technologies represent more than 73% of all the capacity accredited under the RO to date.

From the start of the scheme in 2002 until the end of 2015-16, we accredited 20,789 generating stations with a total capacity of 25.5GW. This represents a 48% increase in the total number of stations accredited compared with the end of the 2014-15 year (14,042).

Compliance by licensed electricity suppliers

All suppliers complied with their obligations in 2015-16. The number of ROCs we issued during the year, combined with the high number of banked ROCs from 2014-15 meant that suppliers were able to present a large number for compliance: 84.38 million, which was 99.9% of the total UK obligation. This is the highest proportion since the RO began and hence even higher than last year's 99.1%. Conversely, the amount of buy-out and late payments suppliers made was the smallest ever.

For the first time since the RO scheme launched, there were insufficient funds available in the buy-out and late payment funds for us to redistribute to suppliers, so we made no redistribution payments for the 2015-16 obligation period. The notional value of each ROC was £44.33 ie the buy-out price, leading to a scheme value of £3.7 billion. The cost of support in 2015-16 was £58.07 per MWh supplied and the cost of GHG savings under the scheme was £111.08 per tonne (CO_2e).

Audits under the RO

We carried out audits of generating stations and suppliers in 2015-16 to verify their compliance with the requirements of the scheme. We audited 45 large generating stations across a range of technologies, including nine pre-accreditation audits. We also audited 60 Northern Ireland microgenerators. We audited four licensed suppliers on their supply volume submissions. We rated the majority of generator and all supplier audits as good or satisfactory. We addressed any findings where audits were returned with a weak or unsatisfactory rating.

Recent changes to RO legislation

The Department of Energy and Climate Change (DECC)[2] and the devolved administrations in Scotland and Northern Ireland (NI) introduced a number of amendments to the RO legislation in 2015 and 2016. These amendments related to sustainability criteria and to various scheme closure-related changes. In England, Scotland and Wales, the RO closed to new solar PV generating capacity on 31 March 2016. Across the UK, it closed to new onshore wind generating capacity on 30 June 2016. It will close to all other technologies in 2017. Grace periods are available for all technologies in certain circumstances.

[2] In July 2016 it was announced that DECC would be merged in to a new department for Business, Energy and Industrial Strategy (BEIS). Please see section 1.9 for more details.

1. Introduction

Scheme administration

1.1 We administer the RO and ROS in GB. We also administer the NIRO on behalf of UREGNI through an Agency Service Agreement[3], however UREGNI retains the statutory responsibility for administering the NIRO.

1.2 The legislation governing the administration of the three schemes[4], collectively referred to as 'the Orders' in this report, define our powers and responsibilities. These include:

- Accrediting generating stations so they can receive ROCs[5]
- Publishing a list of accredited generating stations (with full and preliminary accreditation)
- Issuing, revoking and withholding ROCs
- Establishing and maintaining a register of ROCs
- Monitoring compliance of suppliers and generators on the requirements of legislation
- Adjusting the buy-out price and mutualisation ceiling in line with the Retail Prices Index (RPI) each year (NI is excluded from mutualisation)
- Receiving buy-out and late payments from suppliers and redistributing these funds
- Publishing an annual report on scheme activity in the preceding obligation period by 1 April each year.

1.3 Our costs for administering the RO are recovered from the buy-out fund. We take our costs for the current scheme year from the previous year's buy-out fund. In contrast to previous years, we did not publish proposed costs for our administration costs for the 2016 – 17 obligation period. This was because funds available in the buy-out and late payment funds were insufficient to cover these costs. Instead we engaged with the Department for Business, Energy and Industrial Strategy (BEIS), the Scottish Government and the Department for the Economy (DfE) in Northern Ireland to agree how the shortfall will be met.

Purpose of this document

1.4 This report fulfils our duty to publish an annual report on scheme activity during the 2015-16 obligation period by 1 April 2017. The Orders[6] state that the minimum information the report must include:

- details of the compliance of each obligated electricity supplier, including the ROCs they presented, payments they made and our redistribution of these payments,
- the number of ROCs we issued, broken down by generation technology,
- details of any mutualisation triggered (except for the NIRO), and
- the outcome of any investigations we conducted into suppliers' and generators' compliance with the Orders.

1.5 We can also publish "any other matter" that we consider relevant in the report. So we have included information on the number and type of stations we have accredited, the amount

[3] Section 121 of the Energy Act 2004 gives us the power to enter into "arrangements" like an agency service agreement.
[4] Appendix 1 contains a full list of current RO legislation.
[5] For further information please see our Guidance for Generators: https://www.ofgem.gov.uk/system/files/docs/2017/01/guidance_for_generators_-_jan_17.pdf
[6] Article 86(1)(f) of the RO, Article 57(1)(f) of the ROS and Article 49(1)(e) of the NIRO list the requirements for the annual report.

of renewable generation for which ROCs were claimed, biomass sustainability, the value of the scheme, recent and upcoming changes in legislation and improvements we have made to the administration of the scheme.

Points to note

1.6 Unless it is clear from the context, 'RO' refers to the three UK obligations – the RO England and Wales (RO), the ROS and the NIRO – collectively. Similarly, 'ROC' refers to England and Wales ROCs (ROCs), Scottish ROCs (SROCs) and Northern Ireland ROCs (NIROCs).

1.7 There are technically three buy-out funds and three late payment funds for the RO (one for each obligation). Where we refer to the 'buy-out fund' or 'late payment fund' without specifying the obligation, this refers to all three collectively.

1.8 The data included in this report was downloaded from the Renewables and CHP Register (the Register) on 14 December 2016. The data stored in the Register is live data and subject to change. For example, a station's accreditation details might be amended or the number of ROCs issued/revoked might change. As such, data downloaded from the Register at a later date may vary from that used in this report.

1.9 In July 2016 it was announced that DECC was to be merged in to a new department for Business, Energy and Industrial Strategy (BEIS). In 2016 it was also announced that the Department of Enterprise, Trade and Investment Northern Ireland (DETINI) was to become part of the new Department for Economy (DFE). We have referred to these departments by their previous names where the announcements and legislation were made by those departments, as opposed to the new ones. We have referred to them by their current names when talking about their roles in general terms or something which is expected to happen in the future.

2. Generators accredited under the RO

Chapter summary

By the end of 2015-16 we had accredited 20,789 stations since the start of the scheme, with a total capacity of 25.5GW. We accredited around 1.1GW of solar PV capacity in 2015-16, which was down on the 2.4GW accredited in the 2014-15 period. Wind capacity accredited fell in 2015-16 (722MW) compared to 2014-15 (810MW), but the contribution from onshore wind rose from 390MW to 673MW.

2015-16 again saw a large increase in the number of micro NIRO stations (stations in NI with a Declared Net Capacity (DNC) of 50kW or less) we accredited, where there is no Feed-in Tariffs (FIT) scheme. More than 18,000 of the stations now accredited under the RO are micro NIRO stations.

2.1 We make a number of general assumptions on the data used within this section of the report, detailed below. These are the same assumptions applied in the 2014-15 and 2013-14 RO Annual Report.

- When we refer to stations accredited during the 2015-16 obligation period, we mean that the station's accreditation became effective during the obligation period regardless of when we processed the application.
- We only include data on generating stations that have received full accreditation. We have not included any information on stations with preliminary accreditation, nor those that have had their accreditation withdrawn so the data is subject to change year-on-year.
- References to 'fuelled' generating stations relate to stations generating electricity from eligible biomass, bioliquids, biogas, energy crops or waste but do not include landfill gas and sewage gas stations.
- The capacities we quote are Declared Net Capacity (DNC)[7], rather than Total Installed Capacity (TIC)[8], values unless specified otherwise. The main exception to this is fuelled generating stations that burn renewable fuel alongside fossil fuel (we term these co-firing stations).

2.2 To determine the capacity of a fuelled station, we have to calculate the renewable capacity of the generating station. For example, a generating station's capacity might be 2 GW, but if it only burns 2% of eligible renewable fuels its renewable capacity is taken to be 40 MW. There are more complicated cases, such as where a station burns different proportions of renewable fuel (the biomass fraction) from month to month, or where it did not claim any ROCs in 2015-16, so there is no biomass fraction to use. Where we have issued ROCs to them previously and they are still accredited under the scheme, our methodology for determining a station's capacity is as follows:

- If we issued ROCs to a station in 2015-16, we multiply its average biomass fraction for the year by its capacity. The biomass fraction may be 100%, in the case of dedicated biomass stations for example.
- If we did not issue ROCs to a station in 2015-16, but they are still accredited and have received ROCs previously, we use the station's biomass fraction from the most recent year it did receive ROCs and multiply this by its current capacity.

[7] DNC means "the maximum capacity at which the station could be operated for a sustained period without causing damage to it (assuming the source of power used by it to generate electricity was available to it without interruption) less the amount of electricity that is consumed by the plant".
[8] TIC means "the maximum capacity at which the station could be operated for a sustained period without causing damage to it (assuming the source of power used by it to generate electricity was available to it without interruption)".

- If we did not issue ROCs to a station in 2015-16, nor at any time since April 2007 (the earliest date for which we have data on the Register), but it remains accredited, we use the average biomass fraction from 2015-16 for all active stations (39.2%) and multiply this by the station's capacity. For inactive co-firing stations with a capacity of 1GW or more, we use the average biomass fraction from 2015-16 (0.91%) for active co-firing stations of this size. This average does not take into account fractions for Drax, Ironbridge and Tilbury power stations, whose average biomass fractions are so high that they would skew the capacities of the inactive stations to an unrealistically high value.

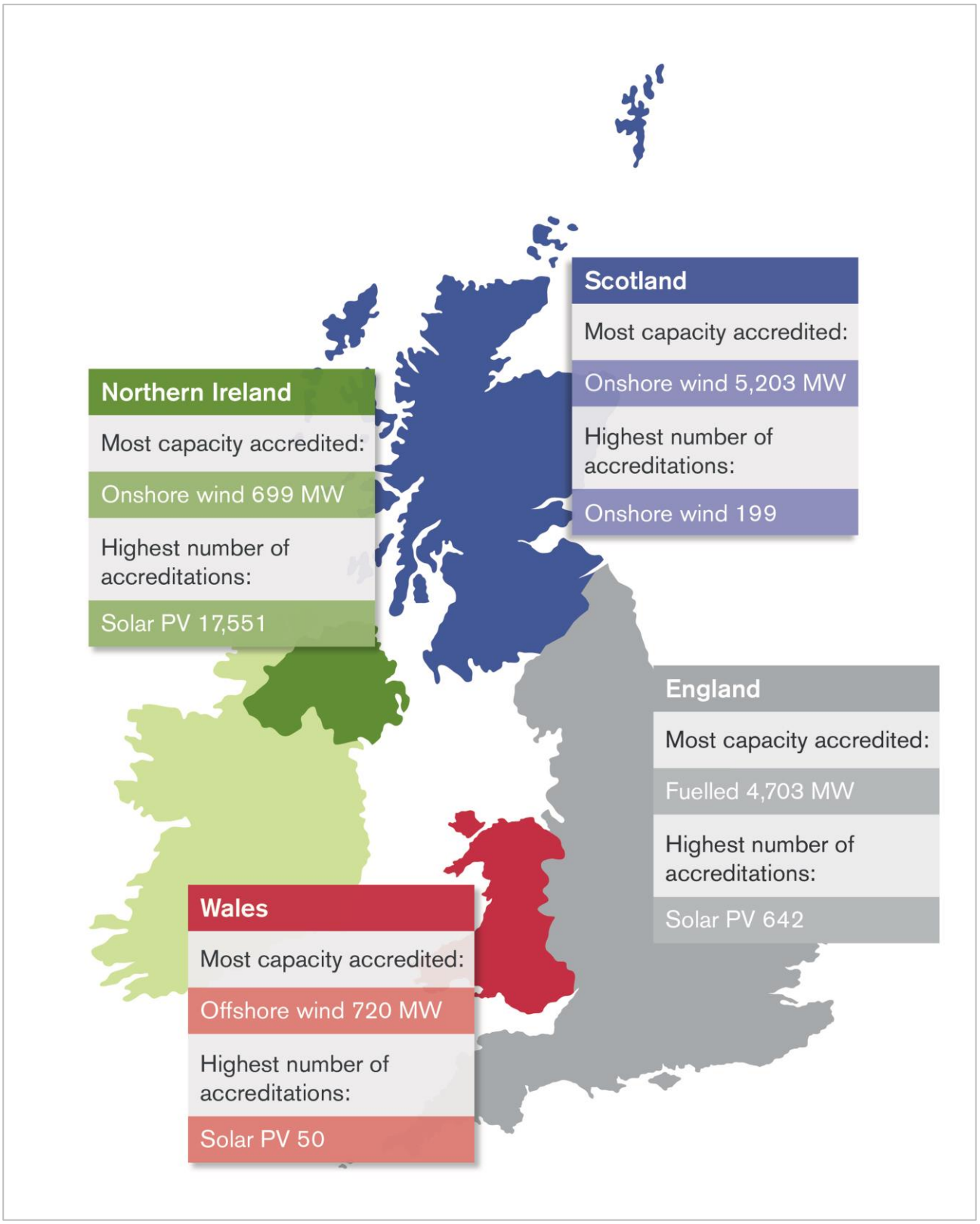
2.3 Since 1 April 2010, with the introduction of the Feed-in Tariffs (FIT) scheme in GB, all wind, solar PV, hydro and anaerobic digestion (AD) stations with a DNC of 50kW or less, i.e. microgenerators, are ineligible for the RO. Since no FIT scheme exists in NI, microgenerators remain eligible for accreditation under the NIRO. A large majority of the total number of accreditations granted are for such stations. Given this, when reporting on the number and type of large stations accredited under the RO, we have removed the micro NIRO stations from some of the information in this chapter.

Stations accredited from the start of the scheme to the end of 2015-16

2.4 There were 20,789 stations accredited under the RO by the end of 2015-16. The combined capacity of these stations was 25,585MW. Mirroring last year's trend, this represents a significant increase on the reported figures from last year's report, of 14,042 stations accredited and 22,597MW capacity. Micro NIRO stations account for 18,015 of these stations, with a combined capacity of 105MW, a significant rise from the 11,708 stations and 66.1MW accredited by the end of 2014-15.

2.5 As one would expect, the technologies with the most accreditations and the highest total capacity vary across each country in the UK. These trends are show in **Figure 1**.

Figure 1: The highest number of accreditations and stations with highest capacity across the UK at the end of 2015-16



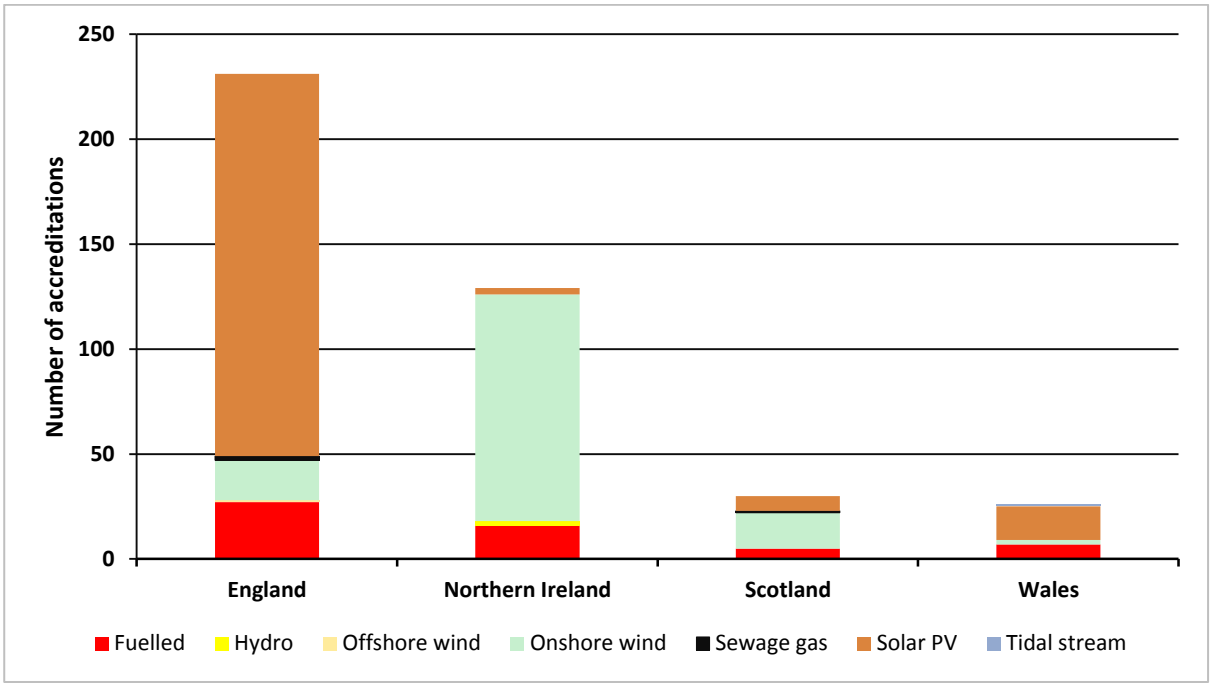
Generators accredited in 2015-16

Numbers of generating stations accredited

2.6 6,724 stations were accredited under the RO in 2015-16. This is a similar number to the 6,658 that were reported in 2014-15, which was a significant increase over the 4,068 reported in 2013-14.

2.7 The vast majority (6,308) of the stations accredited were micro NIRO, over 99% (6,299) of which were small solar photovoltaic (PV) stations installed on domestic properties. The other 1% of micro NIRO stations was made up of hydro (1) and onshore wind (8). Excluding the micro NIRO stations, the number accredited in 2015-16 (416) was almost exactly the same as those accredited in 2014-15 (415), which was in turn much higher than that accredited in 2013-14 (240).

Figure 2: Number of accreditations in 2015-16 by country and technology (excluding micro NIRO)



2.8 **Figure 2** shows that, in England and Wales, solar PV makes up the largest proportion (77%) of accredited generating stations. This highlights the advances in this technology and the drop in deployment costs but also the rush in applications ahead of the closure of the scheme to GB small scale (less than or equal to 5MW) solar PV from 1 April 2016.

2.9 Onshore wind stations accounted for around 35% of the total number of accreditations. This was, in part, due to the 108 onshore wind stations accredited in NI. In NI, as with microgenerators, 50kW to 250kW wind stations receive a rate of 4 ROCs/MWh. The remaining stations accredited were made up of fuelled stations (55), sewage gas stations (3), hydro stations (2), offshore wind (1) and tidal stream (1).

2.10 The historic accreditation profile of solar PV in GB (i.e. non-micro) can also be seen in **Figure 3**. A large number (135) of solar PV stations were accredited in March 2016 due to a surge in applications ahead of the closure of the scheme to new small scale capacity on 1 April 2016, but also the end of the large scale (greater than or equal to 5MW) grace period window.

A similar surge occurred in March 2015 where 159 stations were accredited ahead of the closure to large scale solar PV capacity, and a drop in ROC banding for that technology.

Figure 3 – Number of generating stations (excluding micro NIRO) with accreditations effective from 2012-16

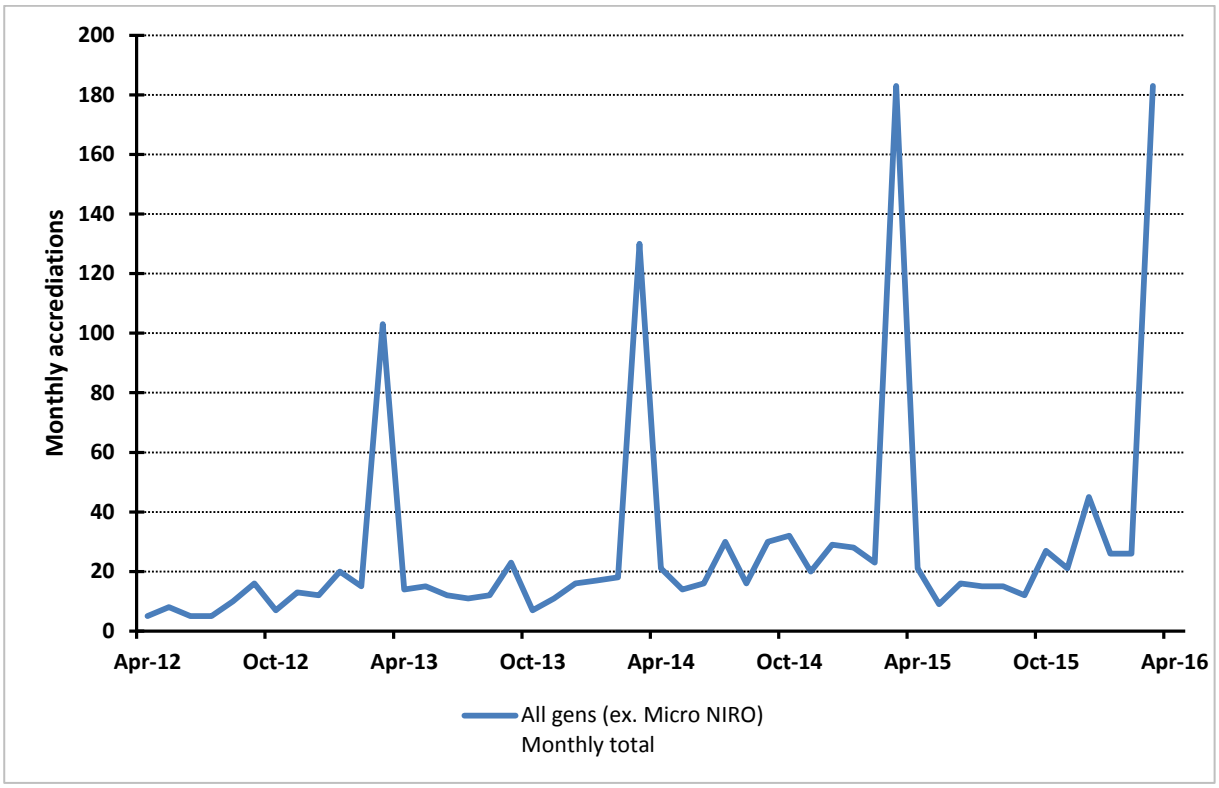
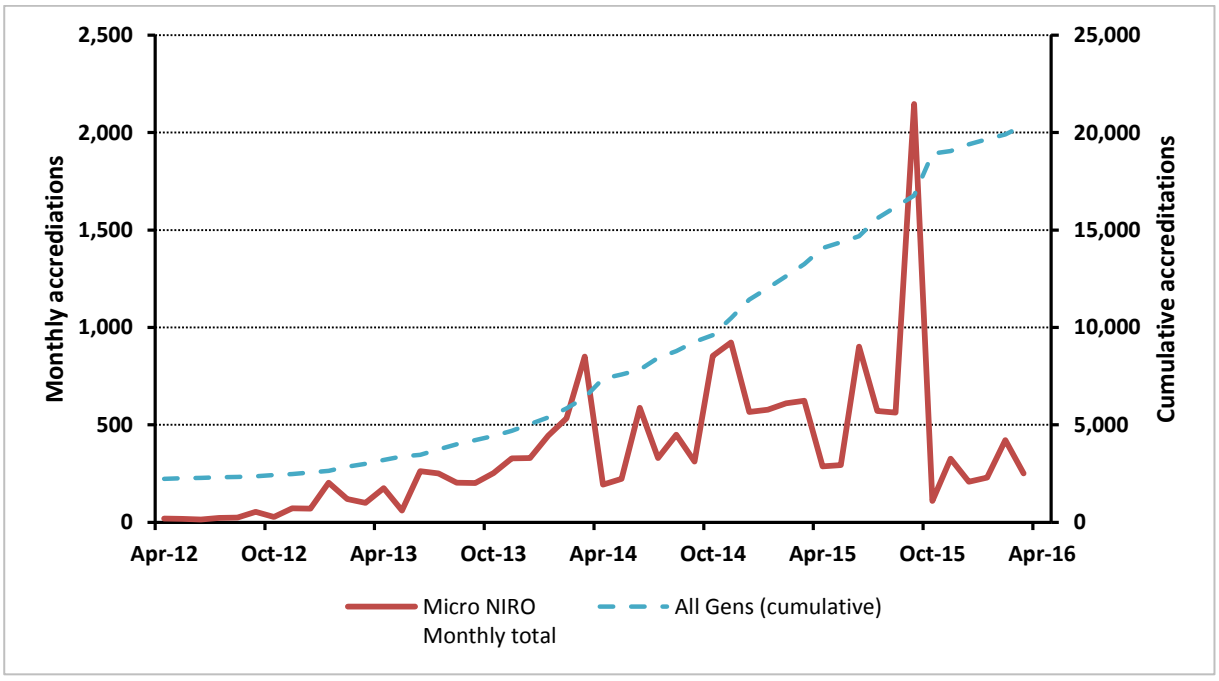


Figure 4 – Number of micro NIRO generating stations with accreditations effective from 2012-16



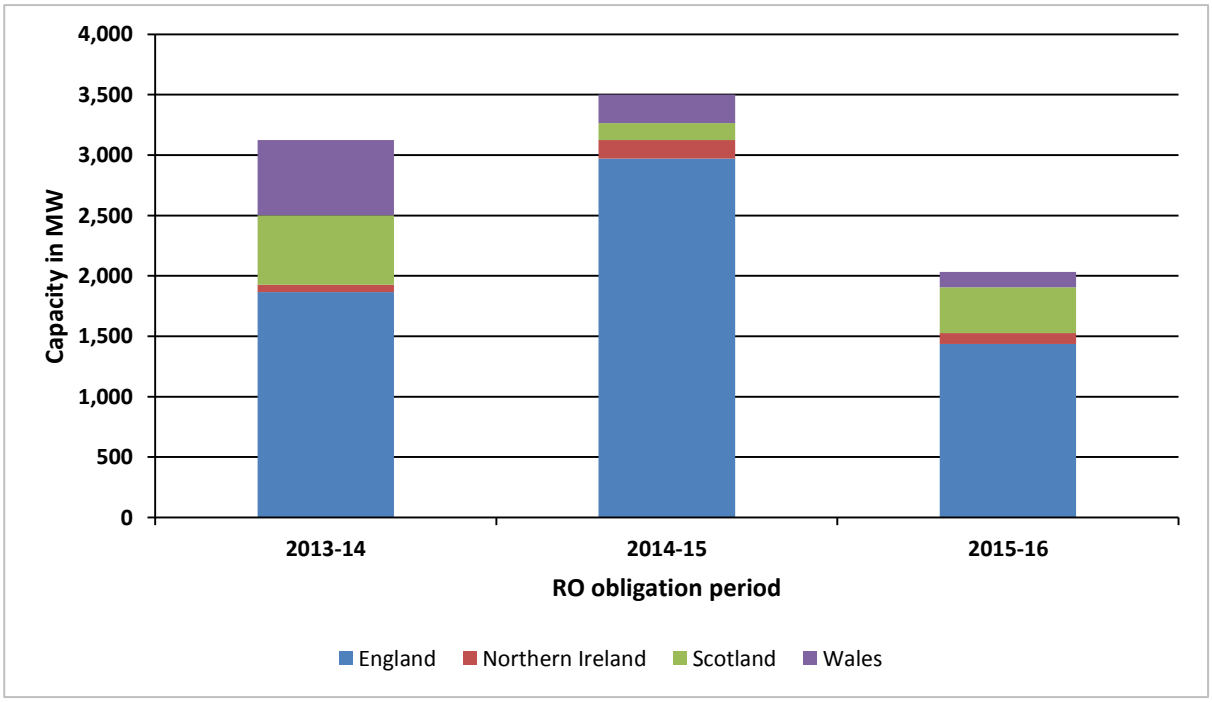
2.11 **Figure 3** and **Figure 4** show the number of stations accredited under the RO each month from April 2012 to March 2016. Micro NIRO stations are shown separately to the rest of the generating stations on **Figure 4**, with a cumulative total covering all stations. The overall number of accreditations across the scheme started to increase in the middle of 2012-13, accelerating rapidly in 2013-14, with a large rise in accreditations of micro NIRO stations. The number of micro NIRO accreditations has continued to rise steeply this year. This annual increase was however, centred on activity ahead of a drop in ROC banding from 1 October 2015 for micro solar PV stations in NI, resulting in 2,147 applications in September 2015 alone.

2.12 The overwhelming majority of these micro NIRO applications are for 4kW or less solar PV stations mounted on domestic properties using a single phase grid connection. This growth in applications since 2012-13 is due to a decrease in the cost of solar PV panels and the microgeneration sector in NI becoming more developed. Moreover, support for micro NIRO solar PV dropped from 4 ROCs/MWh to 3 ROCs/MWh on 1 October 2015 and again on 1 October 2016 to 2 ROCs/MWh.

Capacity of accredited generating stations

2.13 The aggregate capacity of all stations accredited in 2015-16 was 2,033MW, a 38% decrease on the 3,301MW reported in 2014-15. As explored below, this was mainly due to the drop off in solar PV capacity being accredited as after 31 March 2015 the scheme closed to new large scale (greater than 5MW) solar PV capacity. Another significant factor was that we accredited very little offshore wind capacity compared with previous years.

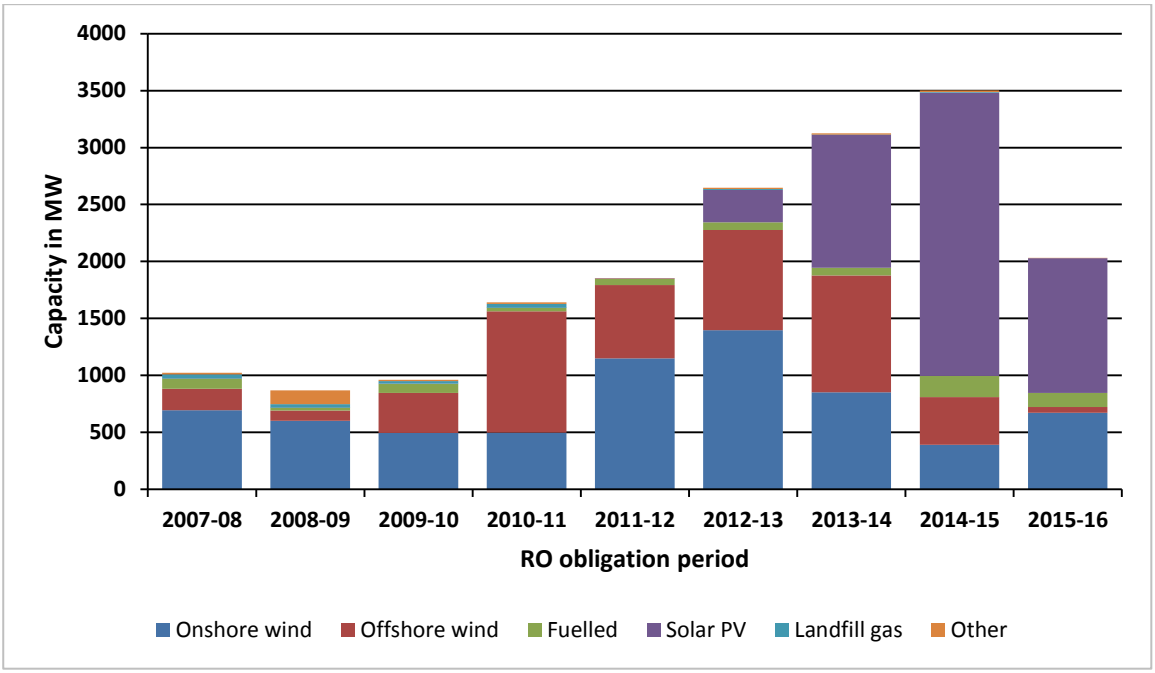
Figure 5 - Capacity of generators accredited by obligation year and country since 2013-14



2.14 **Figure 5** shows that, as in previous years, stations in England represented the majority of accredited capacity. This was driven mainly by investment in, and deployment of, ground-mounted solar PV stations. The capacity accredited in Scotland rose this year (to 337MW) over last year (138MW) mostly due to 17 large onshore wind stations being accredited, averaging 20MW in capacity. These stations were deployed so as to secure accreditation before the

closure of the scheme to new GB onshore wind capacity that would follow on 13 May 2016. Despite the large numbers of micro NIRO stations being accredited this year, the capacity accredited in NI fell from 154MW last year to 91 MW this year, due to fewer large scale onshore wind stations coming through. A change in one technology can also explain the fall in capacity accredited in Wales between 2014-15 (238MW) and 2015-16 (129MW), as last year a relatively substantial 206MW of large scale solar PV (greater than or equal to 5MW) was accredited ahead of the closure of the scheme to that technology band on 1 April 2015.

Figure 6 - Total capacity accredited by generation technology and obligation period since 2007-08 (MW)



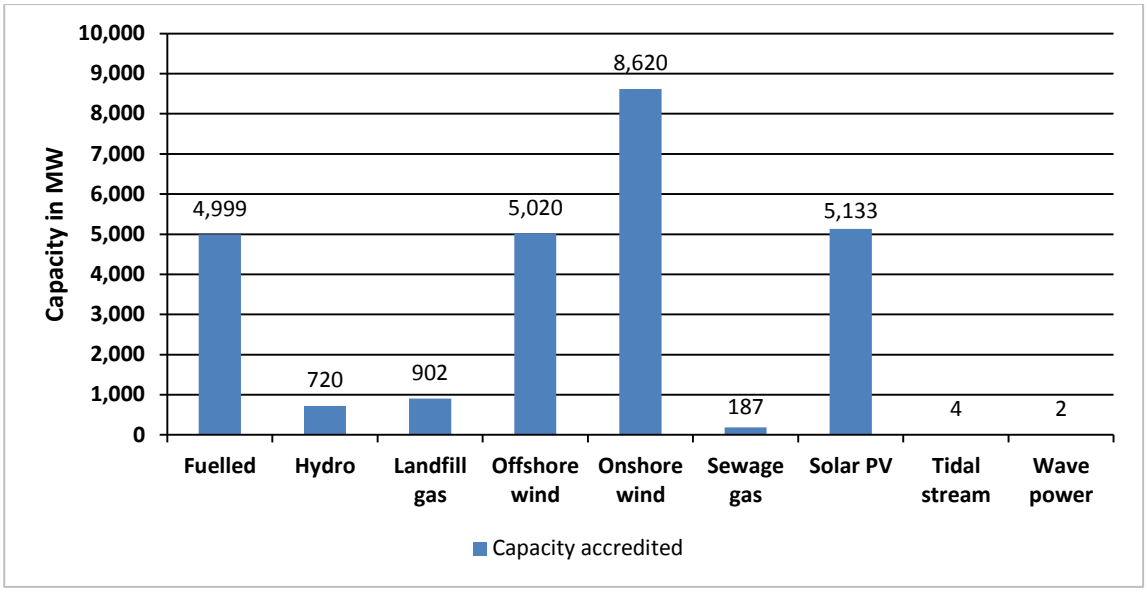
2.15 **Figure 6** shows that until 2013-14, onshore and offshore wind stations made up the largest proportion of accredited capacity per obligation year. For onshore wind this is mainly due to the number of stations, while for offshore it is due to the large size of individual stations. For example, offshore wind stations such as London Array and Gwynt y Môr each have installed capacities in excess of 500MW. One offshore wind station was accredited in 2015-16 (Kentish Flats Extension Wind Farm, 50MW), compared with two accredited in 2014-15 (Humber Gateway Offshore Wind Farm, 215MW and Westermost Rough, 205MW). However, given the large capacities of the stations this fluctuation has been reflected in the scheme wide statistics.

2.16 Due to the closure of the scheme to new large (greater than or equal to 5MW) scale solar PV capacity in GB at the end of the 2014-15 obligation year, we have naturally seen deployment reduce to 1,184MW in 2015-16 compared to 2,486MW in 2014-15. Solar PV still dominates the capacity accredited in 2015-16.

2.17 Despite more fuelled stations being accredited in 2015-16 (55) than 2014-15 (37), capacity in 2014-15 was boosted by a number of larger stations being accredited. This meant that we accredited 124 MW of fuelled capacity in 2015-16, which is lower than the previous year of 184MW. One reason for this is that we accredited a higher number of small-scale gasification stations during 2015/16, particularly during March 2016, ahead of the deadline for a reduction in Renewable Heat Incentive tariff for these stations after the 2015-16 obligation period.

2.18 **Figure 7** provides a simple snapshot of the total capacity currently accredited under the scheme by technology. Interestingly at this point fuelled, offshore wind and solar PV have similar capacities accredited under the scheme. Onshore wind has far and away the most capacity under the scheme, due to the number of stations accredited and also the large capacities of some of those stations.

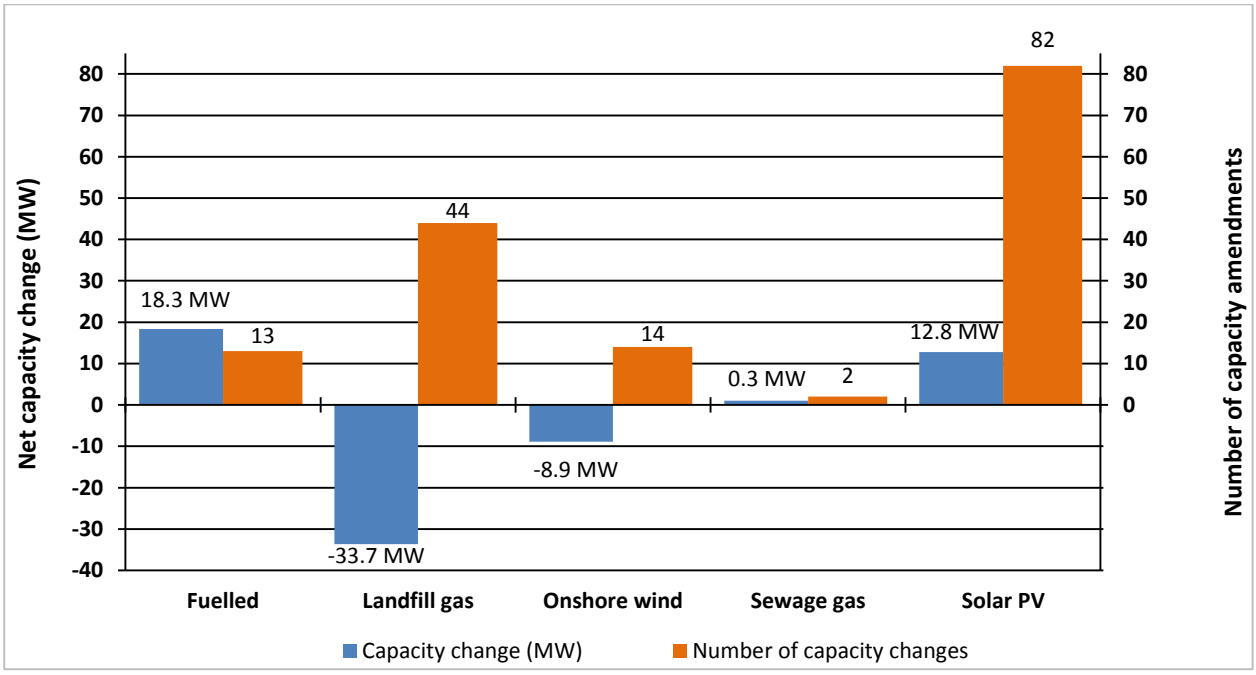
Figure 7 - Total capacity accredited under the RO by generation technology



Capacity amendments

2.19 As well as accrediting new stations, we also receive requests from generators to change the details of their stations in some way. Often this is to increase or decrease a station's capacity due to adding or removing generating equipment.

Figure 8 – Capacity amendments in 2015-16



2.20 There were 155 changes in capacity during 2015-16. The net change in capacity across all stations as a result of this was -11.3MW. **Figure 8** shows that most of the capacity reductions were for landfill gas stations, as the quality and quantity of gas available has reduced in recent years. Most of the added capacity during the year came from fuelled stations and solar PV. The highest number of capacity amendments during 2015-16 was for solar PV, resulting in a net increase in capacity of 12.8MW.

NFFO generating stations

2.21 Prior to the introduction of the RO, the Non Fossil Fuel Obligation (NFFO), Northern Ireland Non Fossil Fuel Obligation (NI NFFO) and Scottish Renewables Obligation (SRO) were the government's primary instruments of renewable energy policy. We refer to these collectively as NFFO.

2.22 NFFO legislation[9] required the former public electricity suppliers (PES) to buy electricity from renewable generators. It specified that they would purchase the electricity at fixed prices for long-term contract periods (typically 15 years). The PES established the Non Fossil Purchasing Agency (NFPA) in 1990 as their agent and it enabled them to carry out their obligations to collectively contract with renewable generators and comply with the legislation. The NFPA became the electricity purchasing body in England and Wales in 2001. NFPA Scotland, a wholly-owned subsidiary of the NFPA, has acted as the purchasing body in Scotland since 2006.

2.23 The NFFO, NI NFFO and SRO are no longer open to new generators, although their contracts will continue until the last of them expires in 2019. Where these stations are also accredited under the RO, during their NFFO contact term we issue ROCs to the electricity supplier who has purchased the electricity from the station, rather than to the operator of the generating station.

2.24 At the end of 2015-16, there were 52 stations still supported under NFFO contracts, with an aggregate capacity of 291 MW. This is down from 71 stations during 2014-15. The reduction is due to several contracts having ended, either through fulfilment of the contract term or because the contracts were terminated on economic grounds. Of these 52 stations, 49 are also accredited under the RO.

[9] The Electricity (Non-Fossil Fuel Sources) (England and Wales) Order 1994, the Electricity (Non-Fossil Fuel Sources) (Northern Ireland) Order 1996 and the Electricity (Non-Fossil Fuel Sources) (Scotland) Order 1994 and subsequent orders.

3. ROCs issued and renewable generation

Chapter summary

In 2015-16 we issued 90.4 million ROCs to renewable generating stations, exceeding the supplier obligation of 84.4 million. This represents 69.1 TWh of renewable electricity generation, an increase of 26.5% from last year, and is equivalent to 23.4% of all electricity supplied within the UK in 2015-16. While the majority of this generation was through wind and fuelled technologies, solar PV continued its growth with generation through this technology more than doubling in the past year.

Issuing ROCs

3.1 We issue ROCs to the operators of accredited generating stations based on their net renewable output. Generators submit their output figures to us[10] on a monthly basis with the exception of microgenerators who can opt to claim on an annual basis. Chapters 4 and 5 of the *Renewables Obligation: Guidance for Generators* explain in detail how we calculate and issue ROCs[11].

3.2 Banding was introduced in the 2009 Renewables Obligation Order (ROO)[12] prior to which all accredited stations received 1 ROC per MWh of generation. Since the introduction of banding stations are issued ROCs at a rate determined by one or more of the following: the technology used to generate electricity, when the station was accredited, and its installed capacity. The level of support offered can also differ between each of the three orders. Further information on banding can be found in Appendix 3 of the *Renewables Obligation: Guidance for Generators*.

ROCs issued and associated renewable generation in 2015-16

3.3 Renewable generation under the RO, and therefore the total number of ROCs issued, increased substantially from the 2014-15 obligation period while the total amount of electricity supplied within the UK reduced. This led to renewable generation through the RO, as a proportion of all electricity supplied within the UK, growing by a quarter in 2015-16. The exact figures for 2015-16 and the percentage change from the previous year are shown in **Table 1**.

Table 1 – Comparison of ROCs issued in 2014-15 and 2015-16

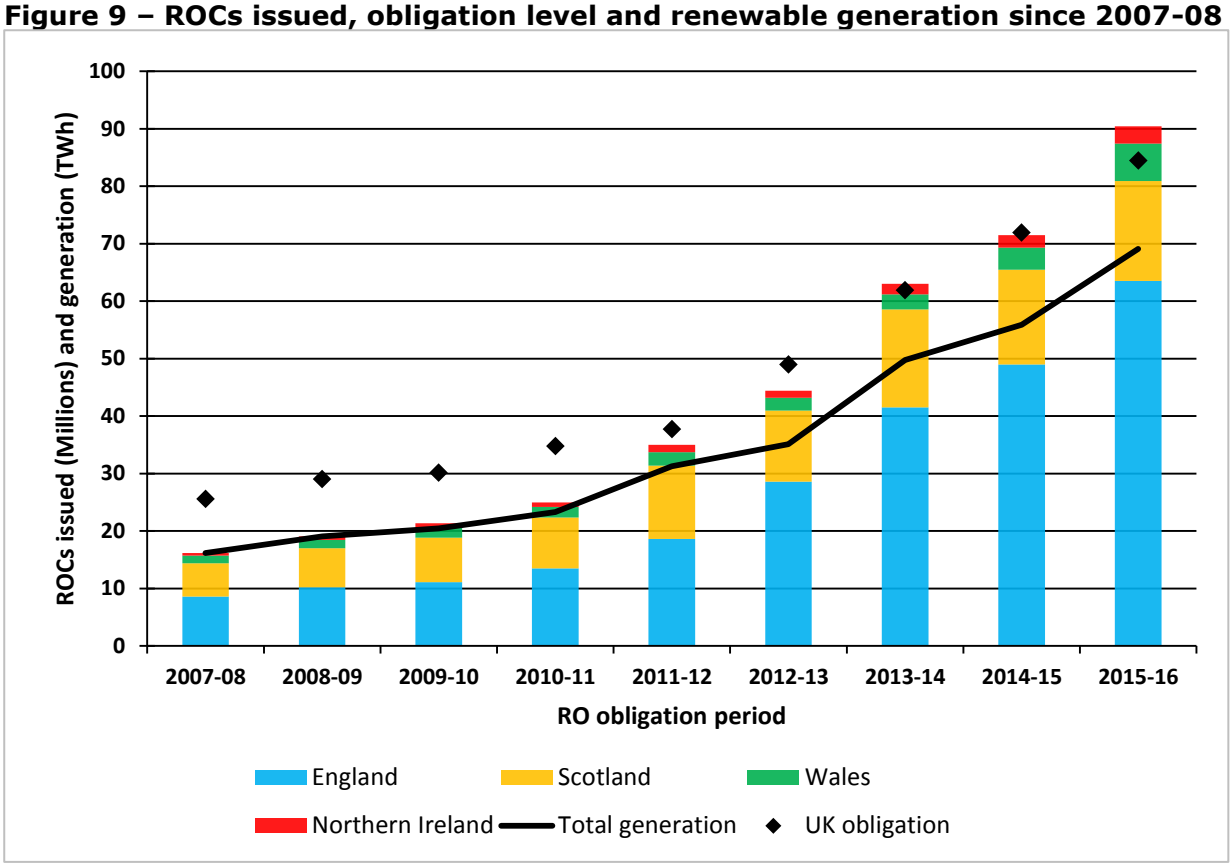
	2015-16	Change from 2014-15
Total number of ROCs issued	90,431,090	+26.5%
Associated renewable generation (MWh)	69,063,667	+23.6%
Total UK electricity supply (MWh)	295,752,773	-1.2%
RO renewable generation as a proportion of electricity supply*	23.4%	+25.0%
Renewable generation including FIT (MWh)	74,656,667	+25.1%
Renewable generation as a proportion of electricity supply*	25.2%	+26.5%

* RO and FIT generation figures include generation not exported to the grid and therefore not captured within the total electricity supply figure. Approximately 93.5% of electricity generated through the RO is exported to the grid.

[10] In accordance with the ROC and LEC Issue Schedule 2015-2015 https://www.ofgem.gov.uk/publications-and-updates/renewables-obligation-certificate-roc-and-renewable-levy-exemption-certificate-lec-issue-schedule-2015-2016
[11] https://www.ofgem.gov.uk/publications-and-updates/renewables-obligation-guidance-generators-2
[12] Article 27 of the RO and ROS Orders and article 25 of the NIRO.

3.4 The growth in the number of ROCs issued meant that, for only the second time since the scheme was launched, the total number of ROCs issued surpassed the UK supplier obligation by almost 6 million ROCs, as shown in **Figure 9**. Whilst not all of these ROCs were presented for compliance, the buy-out fund for 2015-16 was still extremely small, as discussed in Chapter 5. We would generally expect all of the remaining 2015/16 ROCs (8,813,518) to be used for compliance in the 2016-17 obligation period.

Figure 9 – ROCs issued, obligation level and renewable generation since 2007-08



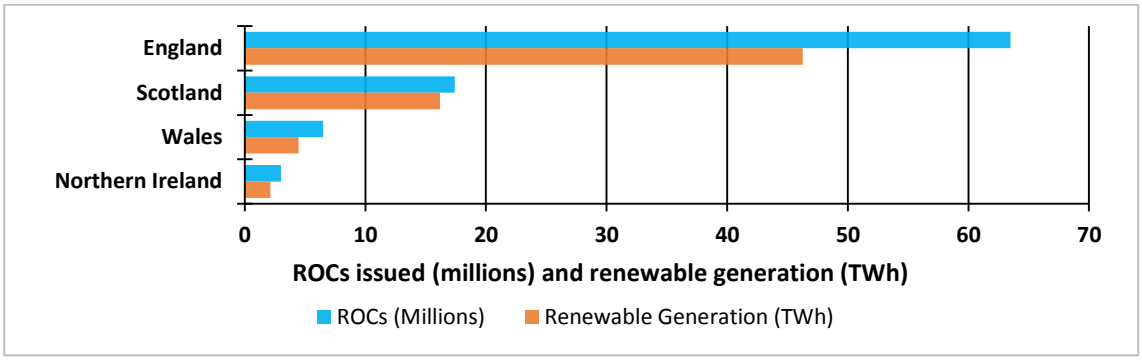
3.5 Since the introduction of banding, the increase in the number of ROCs issued has outpaced the growth in generation, shown in **Table 2**. In 2015-16 an average of 1.31 ROCs were issued per MWh of generation. This is due to the growth in capacity in 2014-15 of technologies such as Solar PV which are issued ROCs at a rate higher than 1 ROC/MWh.

Table 2 – Average number of ROCs issued per MWH of generation since the introduction of banding

RO Obligation Year	Average number of ROCs issued per MWh of generation	Change from previous obligation year
2009-10	1.04	+4.4%
2010-11	1.07	+2.7%
2011-12	1.12	+4.4%
2012-13	1.27	+13.1%
2013-14	1.27	+0.2%
2014-15	1.28	+0.9%
2015-16	1.31	+2.4%

3.6 The majority of capacity accredited under these higher ROC rate technologies is located within England, while in Northern Ireland, Scotland and Wales most capacity is associated with technologies which receive lower ROC rates, as shown in **Figure 10**. In Northern Ireland a very large number of generators receive ROCs at a rate greater than 1 ROC/MWh, however the total number of ROCs issued to these generators is still small. For more information see paragraph 3.13. 70.2% of all ROCs, representing 67.0% of renewable generation, were issued to generating stations located within England in 2015-16.

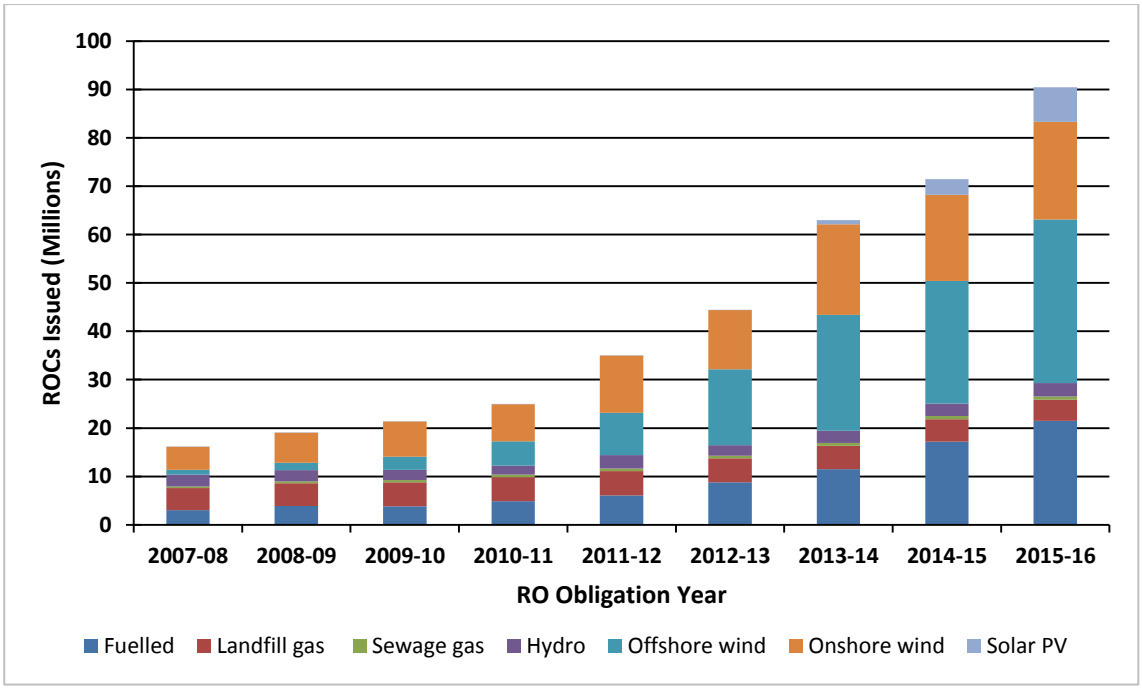
Figure 10 – ROCs issued and renewable generation by country for 2015-16



Technologies

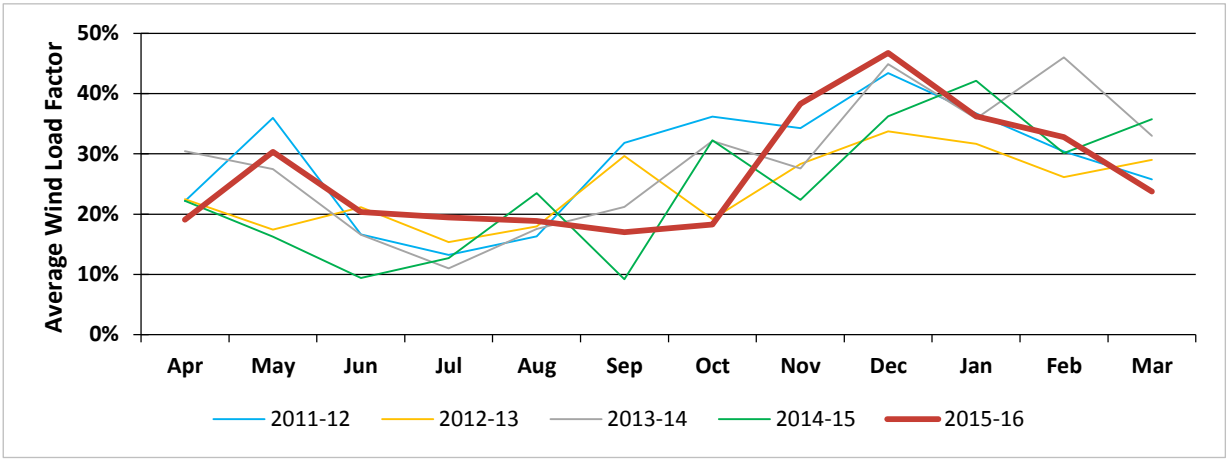
3.7 **Figure 11** shows the total number of ROCs issued to different technologies per obligation period since April 2007. The number of ROCs issued to solar PV generating stations more than doubled in 2015-16 to 7.1 million, largely as a result of the 2.5 GW of capacity accredited within the 2014-15 year. The number of ROCs issued to fuelled and offshore wind stations increased by over 4 million each and onshore wind by 2.4 million. By contrast, the number of ROCs issued to landfill gas stations decreased as older stations closed or reduced in capacity, mainly due to dwindling gas availability.

Figure 11 – Annual issue of ROCs by generation technology since 2007-08



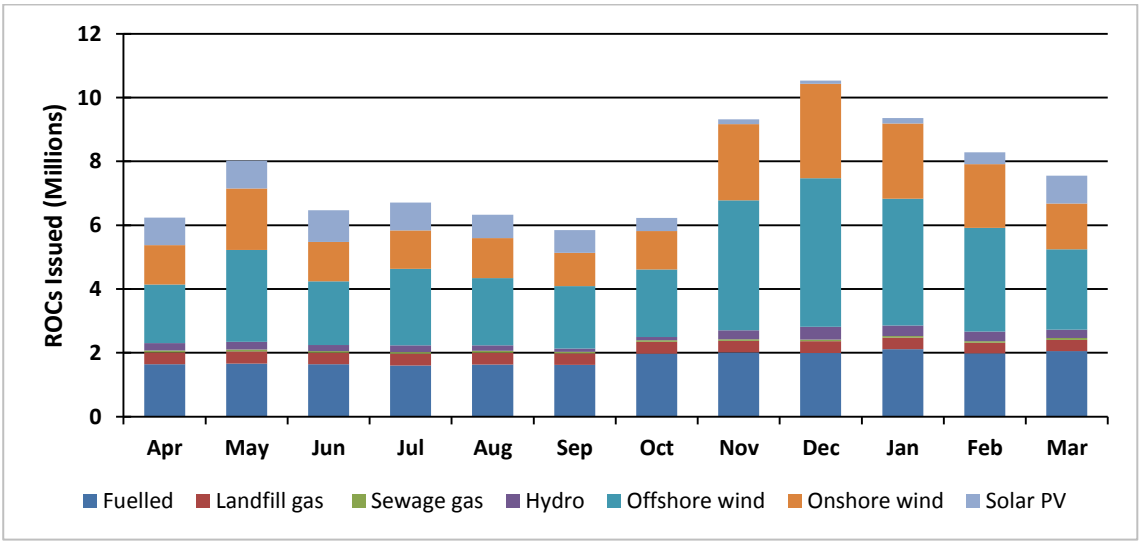
3.8 Although accredited capacity for offshore and onshore wind grew in 2015-16, the primary cause of the increase in ROCs issued to these technologies was the high wind speeds encountered over the winter. Wind load factors in November and December were the highest we have observed within those respective months while January's was also high, as shown in **Figure 12**.

Figure 12 – Average wind load factors by month for 2011-12 to 2015-16



3.9 **Figure 13** shows how these high load factors led to over 10 million ROCs being issued in December 2015, the first time this has occurred, with 7.6 million of these being issued to wind technologies. November and January both saw in excess of 9 million ROCs issued.

Figure 13 – ROCs issued each month in 2015-16 by technology

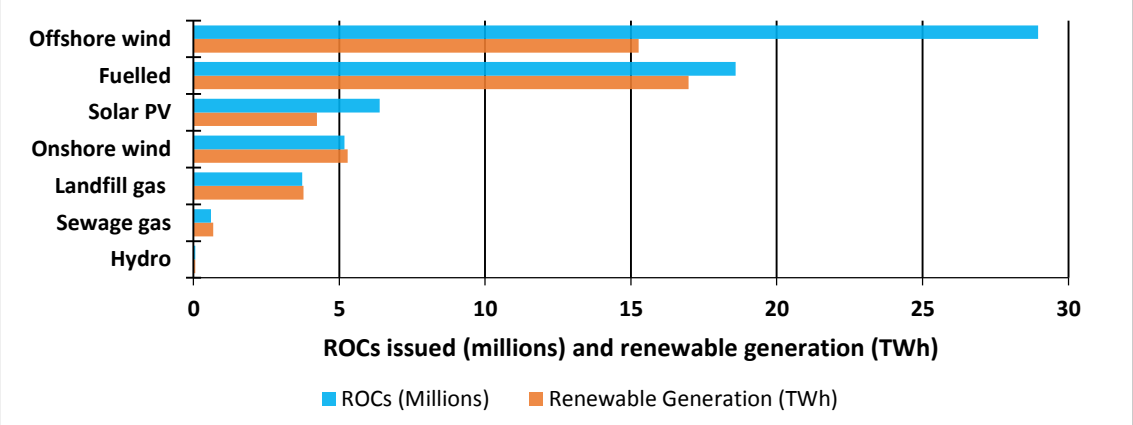


England

3.10 England is home to the majority of the accredited capacity for offshore wind, fuelled and solar in the UK - over 85% of ROCs issued to these technologies were issued to stations located within England. **Figure 14** shows that despite fuelled stations providing the most electricity generation, offshore wind stations received more ROCs. Most fuelled generation comes from larger stations which receive a lower ROC rate than offshore wind. The growth in Solar PV led to this technology overtaking onshore wind in ROC issue and landfill gas in both

ROC issue and generation. Hydro generation from accredited stations in England is at a very small scale and therefore is not a major contributor to generation in the country as a whole.

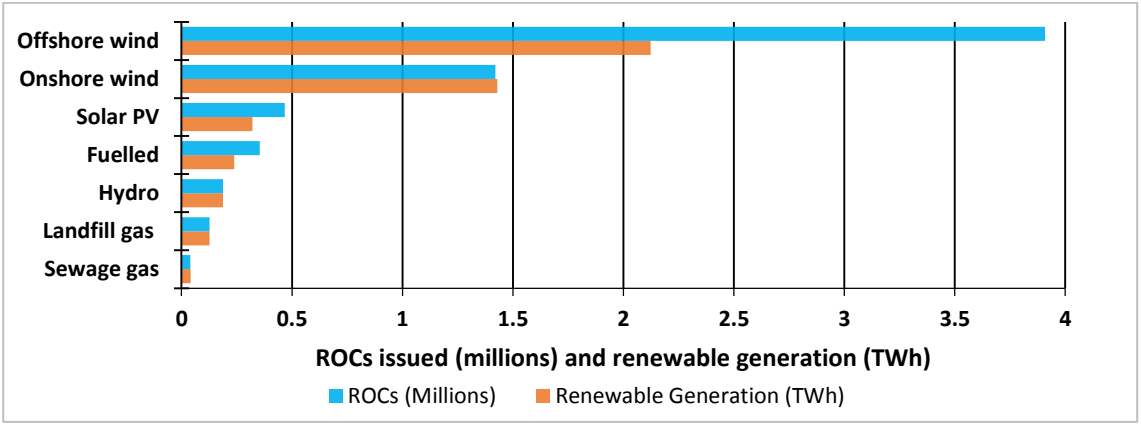
Figure 14 – ROCs issued and renewable generation in England by technology type for 2015-16



Wales

3.11 In 2015-16 the Gwynt y Mor offshore wind farm received half of all ROCs issued to generating stations in Wales and accounted for 37% of generation. This led to generation from offshore wind overtaking onshore wind to become the largest technology in Wales, as shown in **Figure 15**. Solar generation in Wales also grew significantly in 2015-16 with both generation and ROC issue more than tripling. Generation through this technology overtook that from each of landfill gas, hydro and fuelled technologies.

Figure 15 – ROCs issued and renewable generation in Wales by technology type for 2015-16

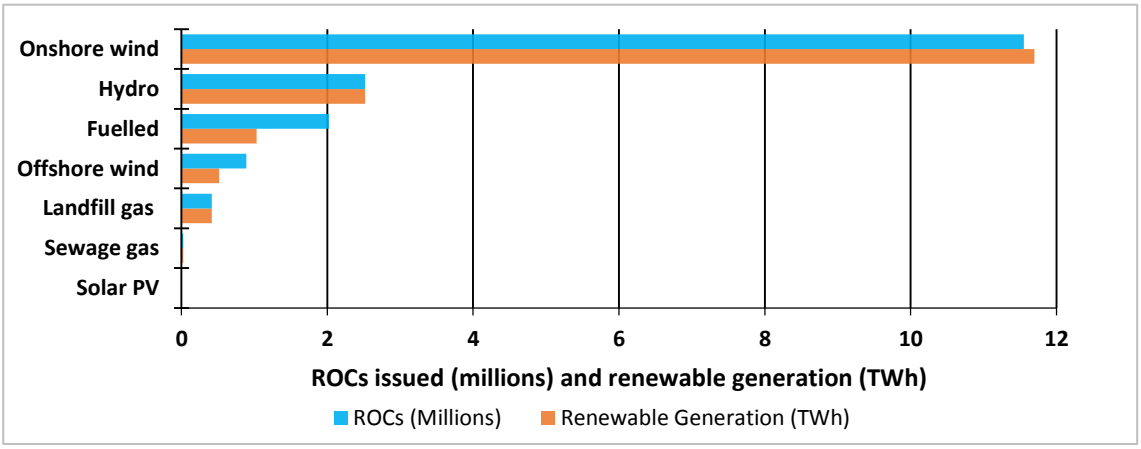


Scotland

3.12 **Figure 16** shows that renewable generation in Scotland is dominated by onshore wind with two thirds of all ROCs issued to onshore wind stations within the country. Generation through Scottish onshore wind is the third largest contributor in the UK, only behind fuelled and offshore wind located within England. Total generation, and how this is distributed between the different technologies, changed only slightly from 2014-15. While Scotland has seen widespread deployment of more mature renewable technologies such as onshore wind and hydro, it offers challenging conditions for the younger technologies, such as offshore wind

and solar PV, which have broken through elsewhere. This has led to a difference in the distribution of technologies being observed in Scotland compared with elsewhere in the UK.

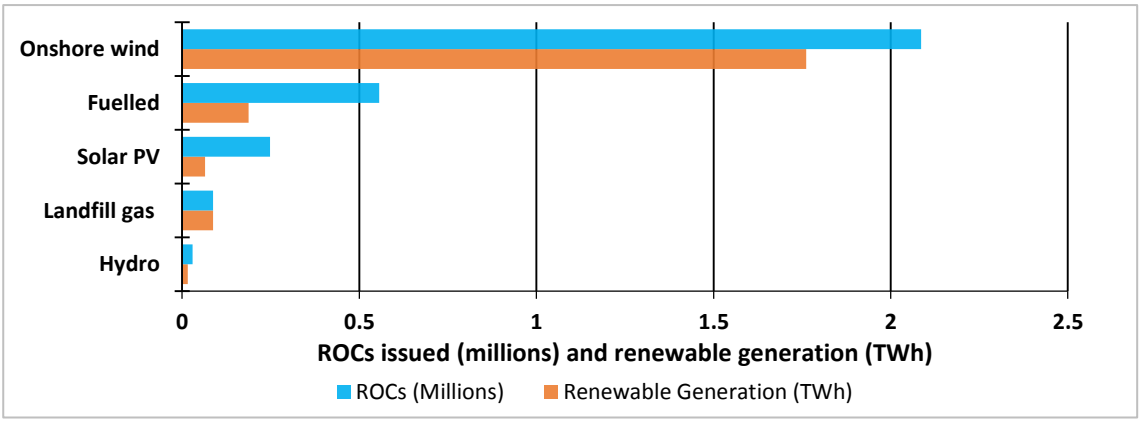
Figure 16 – ROCs issued and renewable generation in Scotland by technology type for 2015-16



Northern Ireland

3.13 **Figure 17** shows how renewable electricity generation in Northern Ireland predominantly comes from onshore windfarms – mostly from large conventional wind farms. In contrast to the rest of the UK the country also has significant numbers of smaller generators. Wind turbines with a DNC of less than 250kW accounted for 22% of onshore wind ROCs, anaerobic digestion stations with a DNC of less than 500kW in capacity accounted for 62% of fuelled ROCs, and 97% of all solar ROCs were issued to stations with a capacity under 50kW. The FIT scheme encompasses the majority of small scale generation within GB however Northern Ireland never adopted this scheme, therefore small scale generation is supported through the RO scheme.

Figure 17 – ROCs issued and renewable generation in Northern Ireland by technology type for 2015-16



Revoked and retired ROCs

3.14 ROCs can be revoked if we find that the number initially issued is incorrect. We may identify such errors through our own investigations, audits of generating stations (see Chapter 6), or where the generator notifies us themselves.

3.15 This year we revoked 430,962 ROCs which were issued during the 2015-16 obligation year. This is a significantly larger number than the 14,915 revoked in the 2014-15 obligation year. This is primarily due to the Combined Heat and Power Quality Assurance status of some fuelled stations being amended meaning that ROCs were initially issued with the wrong generation type and ROC rate and consequently all of these ROCs had to be revoked. A total of 402,223 ROCs were revoked for this reason and an additional 530,012 ROCs subsequently issued.

3.16 We are unable to revoke ROCs if a supplier has already presented the ROCs to us for compliance. In this situation we must withhold an equivalent number of ROCs from being issued to the station in the future[13]. This year we withheld 6,581 ROCs from being issued.

3.17 The registered holder of a ROC may voluntarily retire it on the Register at any time, and these can no longer be used for RO compliance. This year 8,574 ROCs were retired by their holders. A registered holder may retire a ROC for a number of reasons, for example if they can no longer use it towards their obligation because it has already expired.

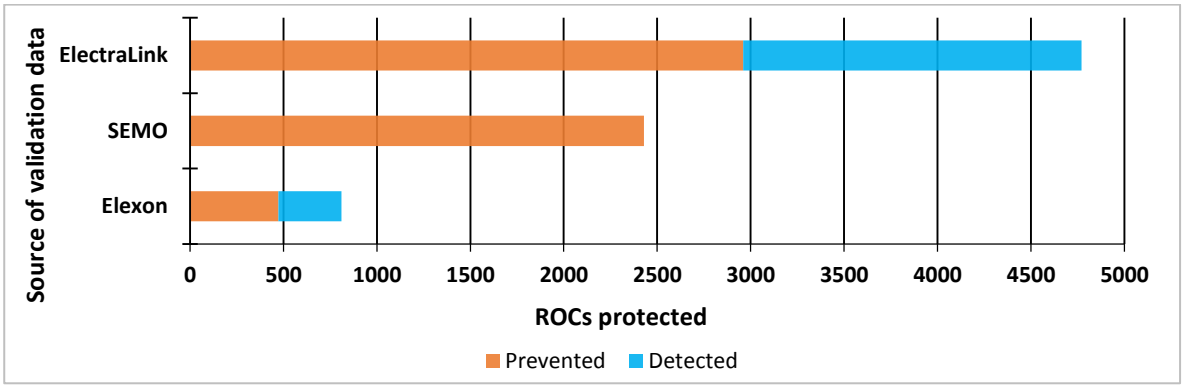
Monthly ROC validation

3.18 In December 2015 we implemented a method of validating the output data submitted to us on a monthly basis for export only stations. By comparing submissions against export data provided by third-parties we can identify and rectify errors prior to ROC issue and help to protect the scheme against error and fraud.

3.19 We currently use three sources of data to validate ROC claims: data from Elexon and SEMO cover the larger generating stations in GB and Northern Ireland respectively and data from ElectraLink data covers most of the smaller generators in GB. Together this covers the vast majority of the capacity accredited under the RO.

3.20 Through this method we identified 54 submissions in 2015-16 which had been, or were to be, over-issued ROCs, with the error totalling 8,010 ROCs. **Figure 18** shows that the majority of this error was 'prevented', meaning that the submission was corrected prior to ROC issue. In some cases we were only able to correct the submission following ROC issue, in which case any excess ROCs issued were revoked. This is classed as 'detected' error.

Figure 18 – ROCs saved as a result of monthly validation checks



3.21 We are now seeking to expand the validation to cover smaller Northern Ireland stations as well as those which, for varying reasons, we do not receive data for.

[13] Article 25 of the RO, 41A of the ROS and article 37A of the NIRO

Emissions saved by the scheme

3.22 The Department for Environment, Food and Rural Affairs (Defra) publishes a periodic report on conversion factors for greenhouse gas (GHG) on its website[14]. For UK electricity, it publishes these conversion factors as an equivalent mass of carbon dioxide per kilowatt-hour ($kgCO_2e/kWh$) and they are available both for generation and for transmission and distribution. From this, we can calculate a figure for the amount of GHG emissions saved from renewable generation under the scheme.

3.23 The GHG conversion factor for 2015-16 is 0.48759 $kgCO_2e$ /kWh[15]. Multiplying this by the 69.1TWh of renewable electricity generated by stations accredited under the RO gives an approximate saving of 33.7 million tonnes of carbon dioxide equivalents (CO_2e) for the 2015-16 obligation period. This is an increase of 14.4% from last year's figure of 29.4 million tonnes CO_2e.

3.24 Our calculation of the cost of reducing carbon emissions due to the RO in 2015-16, derived from the value of the scheme, is in Chapter 5.

[14] https://www.gov.uk/government/collections/government-conversion-factors-for-company-reporting
[15] We reached this figure by adding the generation and transmission and distribution factors to reach overall values for UK electricity in 2015 and 2016 (0.50035 and 0.44932 $kgCO_2e$ respectively).

4. Biomass sustainability

Chapter summary

2015-16 is the first year that ROC issue for solid and gas stations with a TIC of greater than or equal to 1MW has been formally linked to sustainability criteria. This has been in force since December 2015 for stations in Scotland, England and Wales and from March 2016 for Northern Ireland. This chapter presents analysis of the profiling data submitted for this period in relation to technology type and capacity banding.

4.1 All stations with a DNC of more than 50kW using biomass have to report against land and greenhouse gas criteria (known collectively as the sustainability criteria) and provide additional information annually on the fuels used (known as the profiling data)[16].

4.2 There are two criteria that a fuel must satisfy to be sustainable, these are:

- The land criteria – this focuses on the land from which the biomass was sourced and whether it meets the requirements of the legislation[17]
- The life-cycle GHG emissions associated with the biomass – for solid biomass and biogas this is in grams of CO_2 equivalent per megajoule of electricity (gGHG/MJ electricity). For bioliquids it is as a percentage emissions saving against the fossil fuel comparator[18].

4.3 All bioliquid stations and solid and gas stations greater than or equal to 1MW and all bioliquid stations must report against the criteria each month on the Register as part of their ROC claim. From December 2015, meeting the criteria was linked to ROC issue for solid and gas stations for the first time. This meant that these stations had to report and meet the criteria in order to be issued ROCs.

4.4 On an annual basis this monthly information is independently verified by an auditor with a report submitted to Ofgem E-serve for review. The report is undertaken by an independent auditor in accordance with ISAE 3000 (revised) (the International Standard on Assurance Engagements)[19]. If a generator does not submit an audit report to us, or if the audit report concludes that we have issued ROCs for generation from unsustainable fuels, then the legislation requires us to take action. This could include postponing, revoking or withholding ROCs. This means that solid and gas stations greater than or equal to 1MW and all bioliquid stations that cannot demonstrate that their fuels meet the sustainability criteria cannot be issued ROCs for any generation that is not shown to come from sustainable sources.

4.5 Operators presented 104 audit reports to us in 2015-16. Of the reports submitted, 38 were for bioliquid stations and 66 for solid biomass and biogas stations. Seven Stations have not yet presented an audit report and we have suspended the issuance of ROCs to these stations[20].

[16] Article 82, 83 and 84 of the ROO 2015, Article 54A and 54B of the ROS 2009 Order (as amended) and Article 46A and 46B of the NIRO 2009 Order (as amended).
[17] See our 'Sustainability Criteria Guidance': https://www.ofgem.gov.uk/environmental-programmes/ro/applicants/biomass-sustainability
[18] The fossil fuel comparator is specified in Paragraph 19, Annex V, Part C of the Renewable Electricity Directive as 91gCO_2e/MJ
[19] Or equivalent standard
[20] At time of publication

4.6 Stations using solid biomass or biogas with a TIC of under 1MW but a DNC greater than 50kW are not required to report monthly on their fuels but are required to submit additional information annually with their profiling data[21]. The RO legislation states that the information in the profiling data must be supplied to the best of the operator's knowledge and belief. It does not need to be verified by an independent auditor and is not linked to ROC issue[22]. Therefore, we do not withhold ROC issue from stations that report unknown against the land or GHG criteria.

4.7 The information in this chapter is based on the data provided by the operators of fuelled stations, as part of their monthly and annual reporting requirements. The sections below break the stations down into gasification, anaerobic digestion (AD) and direct combustion stations. These categories have been further broken down into stations that are under 1MW, stations that fall into the 1MW to 25MW range and stations over 25MW. Bioliquids have been considered separately and have not been separated by capacity.

Gasification stations

4.8 Six out of the seven accredited gasification stations have a TIC between 50kW and 1MW. Collectively they burnt 3.7 million m^3 of syngas. 100% of this syngas came from woody biomass sourced from within the UK of which over 99% was reported from soft woods. For all stations that reported against the GHG criteria the weighted average GHG emission was 15.7gCO_2e/MJ.

Table 3– Percentage of soft wood to hard wood burnt in gasification stations greater than 50kW but less than1MW

	m³ of syngas	% contribution
Soft wood	3,689,443.13	99.5%
Hard wood	17,852.5	0.5%

4.9 The wood was sourced from forests in England, Scotland and Wales from either planted or primary forests where the land manager's intention was to retain, restock or naturally regenerate all or a majority of the forest within five years.

4.10 During the 2015-16 reporting year there was only one gasification station with a TIC over 1MW that was required to report against the sustainability criteria[23]. This station burned over 2.6 million m^3 of syngas; this came from UK planted forests of larch, pine and spruce. The wood was sourced from forests that are managed to supply both energy and non-energy markets. All consignments met the land and GHG criteria.

4.11 No wood that was likely to be a protected or threatened species was burnt in gasification plants of any capacity during 2015/16.

21 Annual profiling data contains information submitted by the operator regarding the sustainability characteristics of their fuel. This includes information such as: type of biomass, the form of biomass, country of origin and whether it was wood or derived from wood.
22 Article 82 of the ROO 2015, Article 54 of the ROS 2009 Order (as amended) and Article 46 of the NIRO 2009 Order (as amended).
23 Gasification stations using municipal solid waste with a biomass content of less than 90% do not report against the sustainability criteria.

Anaerobic digestion stations

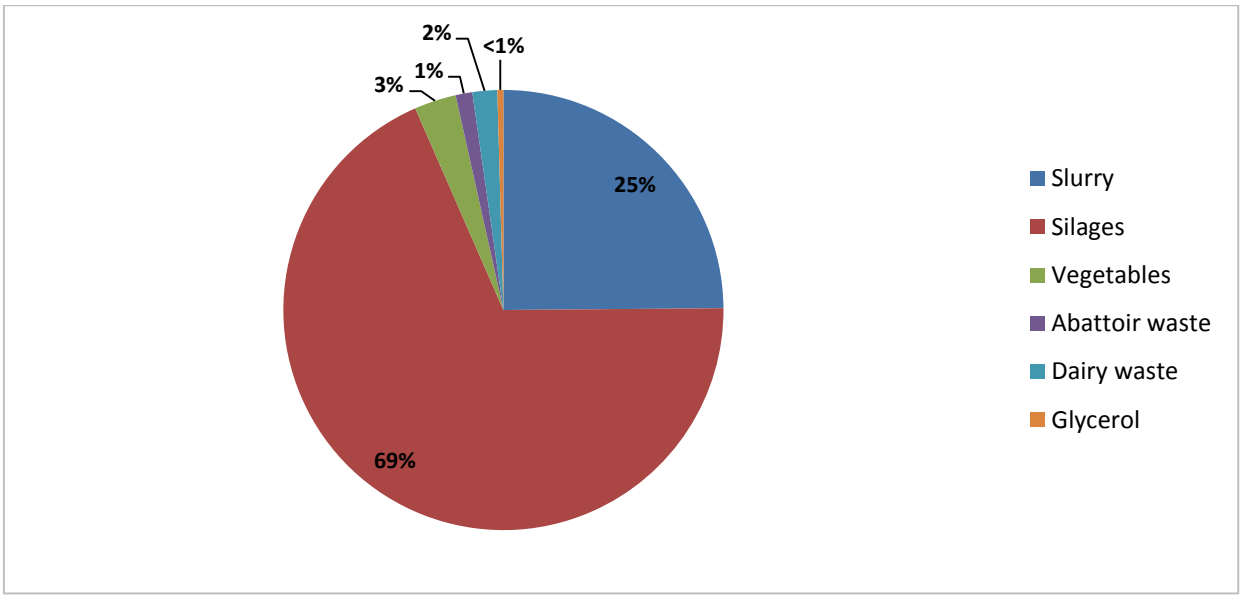
4.12 **Table 4** shows the number of consignments[24] by AD stations against the land and GHG criteria. No consignments were reported as not having met the criteria. The weighted average of GHG emissions for all anaerobic digestion consignments that reported a figure was 23.2 gCO_2e/MJ, this does not include wastes that were exempt from the GHG criteria.

Table 4 – Consignments reported by AD stations against the sustainability criteria split by capacity

		AD stations <1MW	AD stations ≥1MW ≤ 25MW	AD stations >25MW
Meets the land criteria	Yes	12	66	0
	No	0	0	0
	Exempt	33	534	6
	Unknown	56	23	0
Meets the greenhouse gas criteria	Yes	10	85	0
	No	0	0	0
	Exempt	33	509	6
	Unknown	58	23	0

4.13 The consignments reported as unknown for stations greater than or equal to 1MW are from prior to December 2015 when the reporting was not formally linked to ROC issue.

Figure 19 – Type and proportion (by gas) of feedstocks used in anaerobic digestion plants less than 1MW

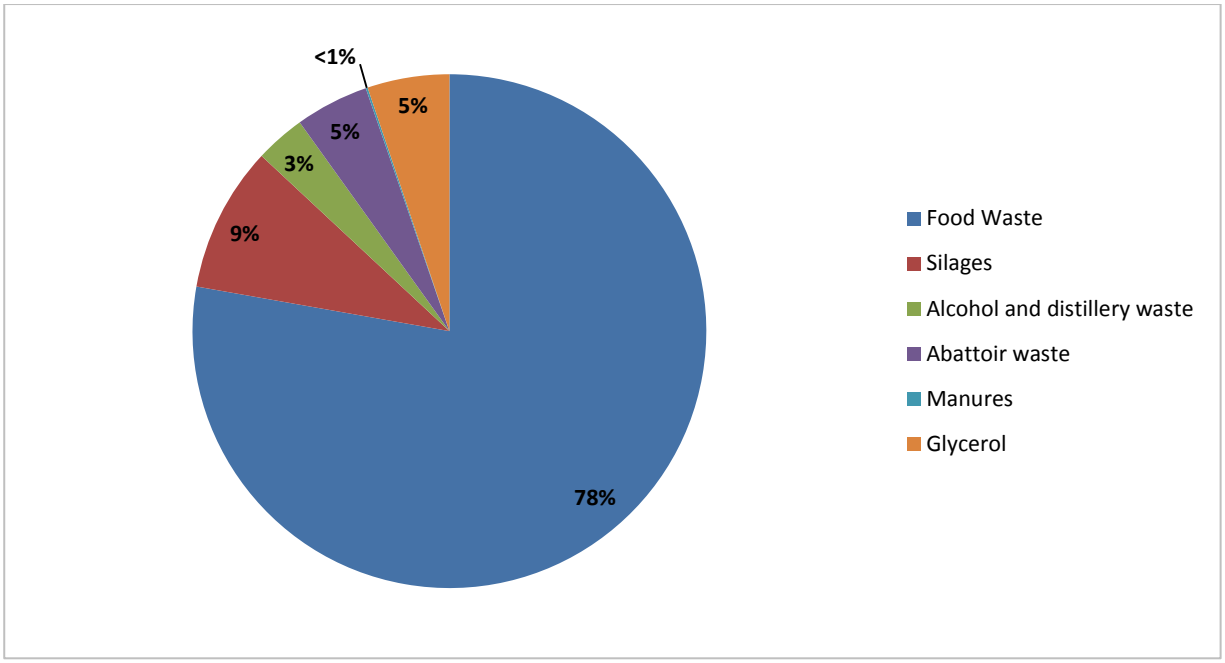


4.14 AD stations under 1MW burnt 85.8 million m^3 of AD gas. **Figure 19** shows that a significant amount of the biogas in anaerobic digesters is from silage feedstocks. Animal slurry

[24] Where we refer to a consignment in the context of stations greater than or equal to 1MW, this refers to a single consignment submission for one month. Therefore a station that uses one type of consignment for the whole year could report this up to 12 times in the year, once for each month. For stations less than 1MW this is just reported once.

makes up the majority of the remaining contribution. This, perhaps, reflects that the majority of small AD plants are installed on farms.

Figure 20 – Type and proportion (by gas) of feedstocks used in anaerobic digestions plants *greater than or equal to 1MW but less than 25MW*



4.15 AD stations over 1MW but under 25MW burned 149.7million m^3 of biogas. **Figure 20**, compared to **Figure 19**, shows that significantly less crops and silages are being used in larger AD sites, while biogas from food waste feedstocks make up the largest percentage in stations over 1MW but under 25MW. This may reflect larger stations being built specifically to utilise food waste that would have previously have been sent to landfill.

4.16 The vast majority (80%) of AD feedstocks were exempt from both the GHG and land criteria, this is because much of the feedstock is classed as waste.

4.17 In stations with a TIC of 25MW or greater, 8.2million m^3 of AD gas was burnt. In all cases these stations run primarily on fossil fuel but supplement their natural gas with AD gas, all of which is derived from wastes that arise from processes at the same site.

Solid biomass burnt in direct combustion stations

4.18 **Table 5** shows what was reported by stations using solid biomass for direct combustion. The weighted average for all solid biomass burnt in direct combustion stations was 29.4gCO_2e /MJ, this includes residues but does not include consignments reported as exempt.

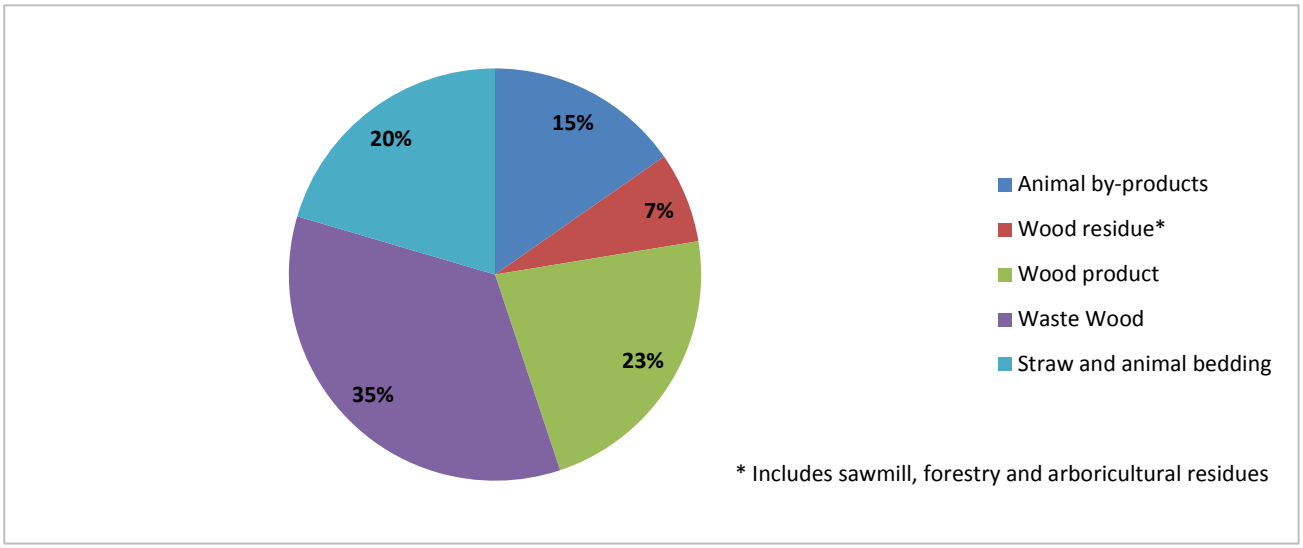
Table 5 – Consignments of solid biomass burnt in direct combustion stations reported against the sustainability criteria, split by capacity

		Solid biomass stations <1MW	Solid biomass stations ≥1MW ≤ 25MW	Solid biomass stations >25MW
Meets the land criteria	Yes	2	1345	1169
	No	0	0	0
	Exempt	2	439	161
	Unknown	1	57	35
Meets the greenhouse gas criteria	Yes	0	1361	1216
	No	0	0	0
	Exempt	2	392	114
	Unknown	3	88	35

4.19 Stations under 1MW burnt 23,422 tonnes of solid fuel. All fuel burnt was woody biomass of which the vast majority, 93%, was waste wood - the rest was made up of arboricultural residues.

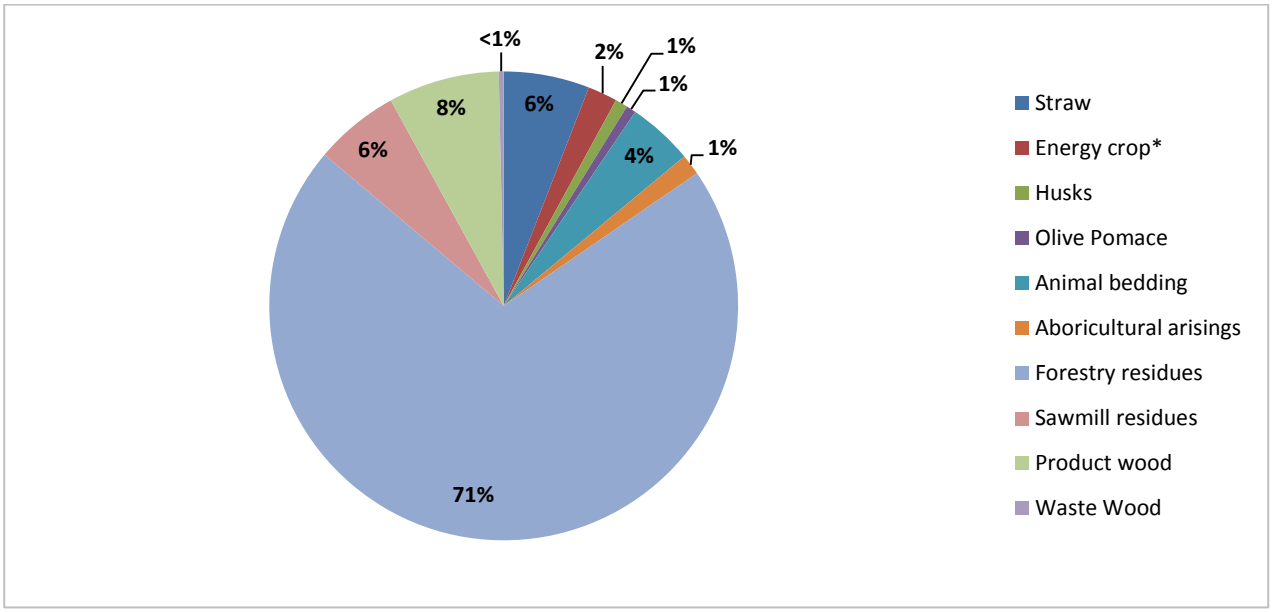
4.20 In stations using direct combustion greater than or equal to 1MW but under 25MW there is a broader range of fuels, as shown in **Figure 21**. Waste wood still makes up the majority but other wastes are also burnt along with wood products and wood residues. The product and residue woods were sourced 100% from the UK and the majority of consignments met the land criteria and GHG emissions threshold.

Figure 21 – Type and proportion of solid biomass used in direct combustion stations *greater than or equal to 1MW but less than 25MW*



4.21 Stations with a TIC of 25MW or greater show a significant difference in fuel mix, with 71% of the fuel supply coming specifically from forestry residues, as shown in **Figure 22**. This rises to 78% when aboricultural and sawmill residues are considered as well. This category is dominated by co-firing or conversion stations meaning that the biomass burned in these stations is often replacing coal fired generation.

Figure 22 – Type and proportion of solid biomass used in direct combustion stations greater than or equal to 25MW



* Includes Miscanthus and Short Rotation Willow[25]

Bioliquid stations

4.22 Unlike for solid biomass and biogas consignments there are no exemptions available to bioliquids for the GHG criteria. However, a fuel that is classed as a waste can report exempt against the land criteria.

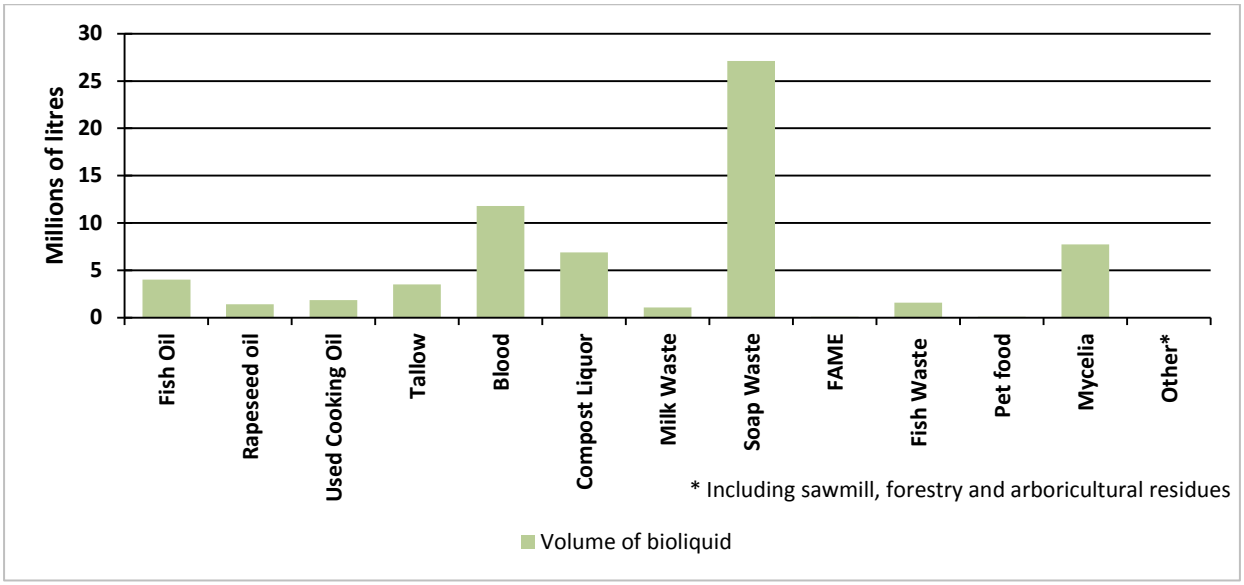
Table 6 – Consignments of bioliquid reported against the sustainability criteria

	Yes	No	Exempt	Unknown
Land criteria	128	0	272	3
GHG criteria	385	15	0	4

4.23 The fifteen consignments in **Table 6** that had a GHG saving of less than 35% consisted of soap waste and compost liquor. The low GHG savings were influenced by the very low gross calorific values (GCV) of these substances that were mostly burned in order to dispose of them.

[25] Energy Crop as defined under Article 2 of the Renewables Obligations Orders.

Figure 23 – The total volumes of bioliquid reported, by consignment, in 2015/16



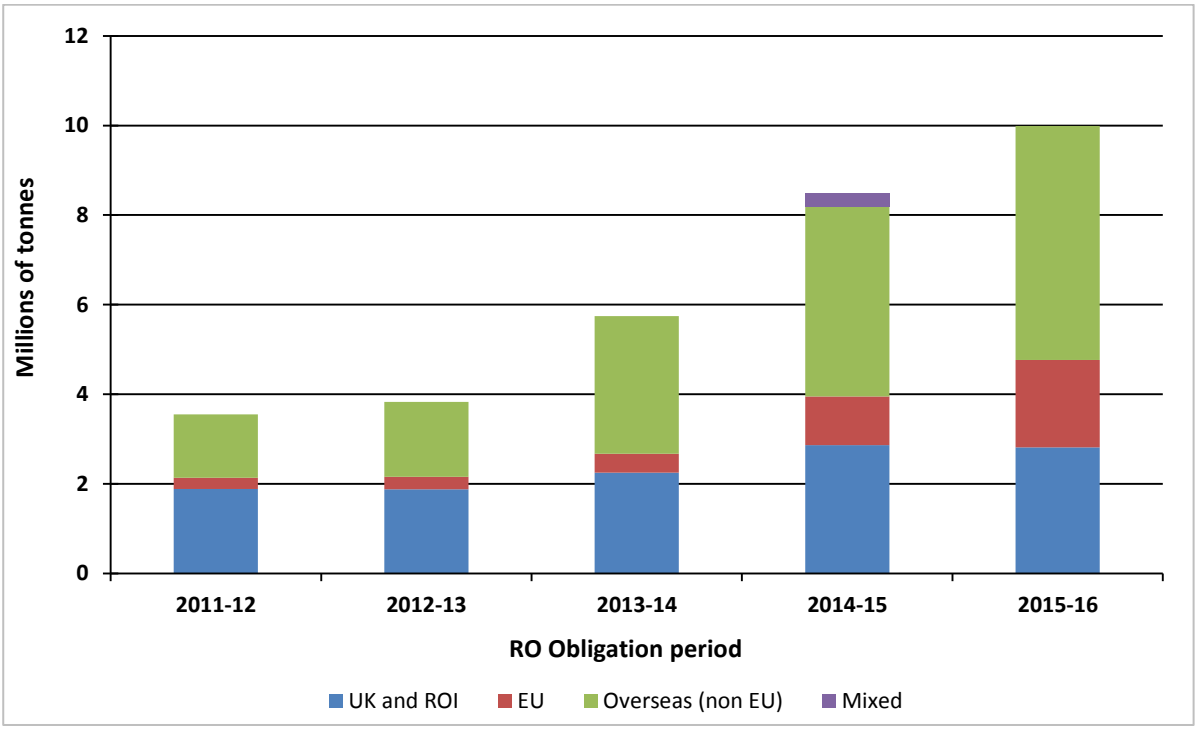
4.24 Notably, the consignments used in the greatest volume are of substances known to have low GCV's. This may reflect that a lot of these fuels are burnt as waste disposal rather than being intended to contribute to electrical generation. The only fuels classified as products are rapeseed oil and fatty acid methyl esters (FAME), of which a combined 1.5 million litres were burnt. All of these products were sourced from within the UK.

4.25 Overall, 98% of bioliquids came from the UK with the remainder coming from France, USA, Norway, and Peru. The weighted average GHG saving across all bioliquid consignments is 66.2%, which is well above the 35% threshold in the 2015-16 period.

Comparison to previous reporting periods

4.26 **Figure 24** shows there was a 29% increase in the total volume of solid biomass used in 2015-16 compared with 2014-15. This increase in demand is met with woody biomass while the use of energy crops, husks and straw has remained relatively constant with husks and straw staying at around 100,000 tonnes and straw decreasing slightly from 400,000 to 350,000 tonnes. Again, like the previous obligation period, all stations that used energy crops sourced them from the UK and Republic of Ireland.

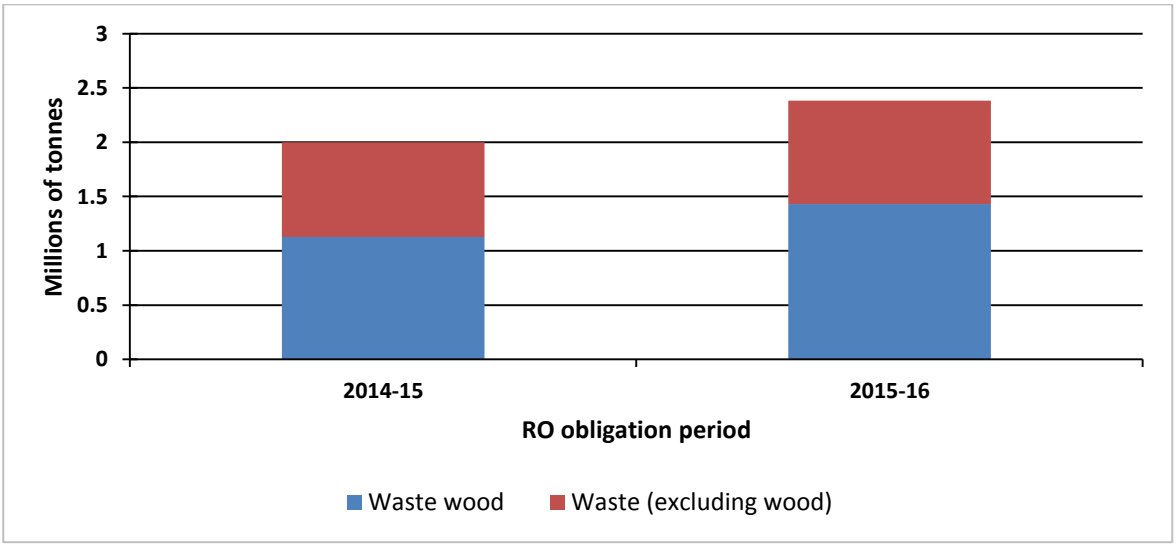
Figure 24 – The amount of non-waste solid biomass used 2011-12 – 2015-16



4.27 **Figure 25** shows the amount of solid biomass wastes reported. This includes animal bedding, waste wood, animal by-products, olive pomace, draff and pet food waste. A proportional increase can be seen for both waste wood and other wastes for 2015-16 in comparison to 2014-15.

4.28 Although the amount of waste reported during the 2015-16 compliance period has increased from the previous year, the percentage as a total of the solid fuels used has remained very similar. This suggests that there are waste fuel streams being utilised by new capacity. **Figure 25** shows waste wood is the most commonly used waste fuel for solid biomass in standard combustion supplying about 60% by weight.

Figure 25 – Amount of waste solid biomass reported every obligation period since 2014-15



5. Compliance by licensed suppliers

Chapter summary

Suppliers presented 84.38 million ROCs for compliance in 2015-16, towards a total UK obligation of 84.44 million ROCs. This was the largest ever proportion of the obligation met through presenting ROCs – 99.9%. For the first time since the RO scheme launched, there were insufficient funds in the buy-out and late payment funds to meet our administration costs. As such, no redistribution payments were made for the 2015-16 obligation period. Each ROC was notionally worth £44.33 ie the buy-out price, with a recycle value of £0 per ROC and the value of the scheme was £3.7 billion.

All suppliers complied with their obligations for the 2015-16 obligation period.

5.1 The obligation level is set by the Secretary of State and published by BEIS six months before each obligation period begins[26].

5.2 The 2015-16 obligation level was announced on 1 October 2014[27]. This required suppliers in England, Wales and Scotland to present 0.29 ROCs per MWh of electricity they supplied to their customers. Suppliers in NI had to present 0.119 ROCs per MWh. This was a slight increase in the obligation level from last year.

5.3 We set the buy-out price before each obligation period. We do this by taking the buy-out price from the previous obligation period and adjusting it in line with the change in the Retail Prices Index (RPI)[28] during the previous calendar year. For 2015-16 we announced a price of £44.33 per ROC[29] – an increase of 2.38% from the 2014-15 value of £43.30.

5.4 The total obligation across all suppliers is the obligation level (ROCs per MWh) multiplied by the total amount of electricity they supplied (MWh). In 2015-16 the total supply was 288.0TWh to customers in GB, and 7.8TWh in NI. Using the obligation levels in paragraph 5.2 above gave a total UK obligation of 84.4 million ROCs. As shown in **Figure 8** in Chapter 3, this is an increase of 12.5 million ROCs (17.4%) from the total obligation of 71.9 million ROCs in 2014-15.

5.5 The obligation for all 72 UK suppliers that supplied electricity during the obligation period was set based on their overall supply volumes. Some licensed suppliers did not supply electricity in 2015-16 and so did not have an obligation. A breakdown by individual supply licence is in Appendix 4. Suppliers with an obligation under the RO are not the complete group of licensed suppliers in the UK. A full list of all electricity supply licences in GB is available from the Electronic Public Register on our Licensing website[30]. An equivalent list for NI is on the UREGNI website[31].

[26] Articles 12 of the 2009 Orders define these calculations to set the obligation.

[27] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/360517/ro.pdf

[28] RPI from the Office for National Statistics: http://www.ons.gov.uk

[29] https://www.ofgem.gov.uk/publications-and-updates/renewables-obligation-ro-buy-out-price-44-33-and-mutualisation-ceilings-2015-16

[30] https://epr.ofgem.gov.uk/Document

[31] https://www.uregni.gov.uk/electricity-licences

Information required from suppliers

5.6 After an obligation period (1 April – 31 March) each licensed supplier must:

- Estimate the amount of electricity it has supplied during the obligation period and submit these figures to us by 1 June.
- Provide us with the final figures for the amount of electricity it has supplied by 1 July.
- Comply with its obligations through one or a combination of the options below:
    - Presenting ROCs to us by 1 September.
    - Making a buy-out payment by 31 August for each ROC it has not presented.
    - Making a late payment by 31 October to meet any remaining obligation it has not met by 1 September. Late payments are subject to a daily interest penalty at an annualised rate of 5% plus the Bank of England base rate.[32]

Validation and submission of supply volumes

5.7 Appendix 5 of the Renewables Obligation: Guidance for Licensed Electricity Suppliers[33] recommends a methodology for suppliers to follow when they report their supply volumes for an obligation period. This states that they should use settlement reports from Elexon[34] for supply in GB, and from Northern Ireland Electricity Networks (NIE)[35] for supply in NI.

5.8 Following the process we introduced in 2015, we obtained the settlement reports from Elexon and NIE before suppliers had submitted their figures. We sent an extract of the report to each supplier for validation of their supply volumes. Suppliers either accepted the figures, or explained any variance to us before submitting their figures.

5.9 There were four licensees who submitted their estimated figures to us after the 1 June deadline. Including those who revised their initial figures when we found they were incorrect from the Elexon reports, three licensees[36] (out of 80 licensees who had obligations) submitted their final supply volumes after the 1 July deadline. The names of these suppliers are listed in Appendix 4.

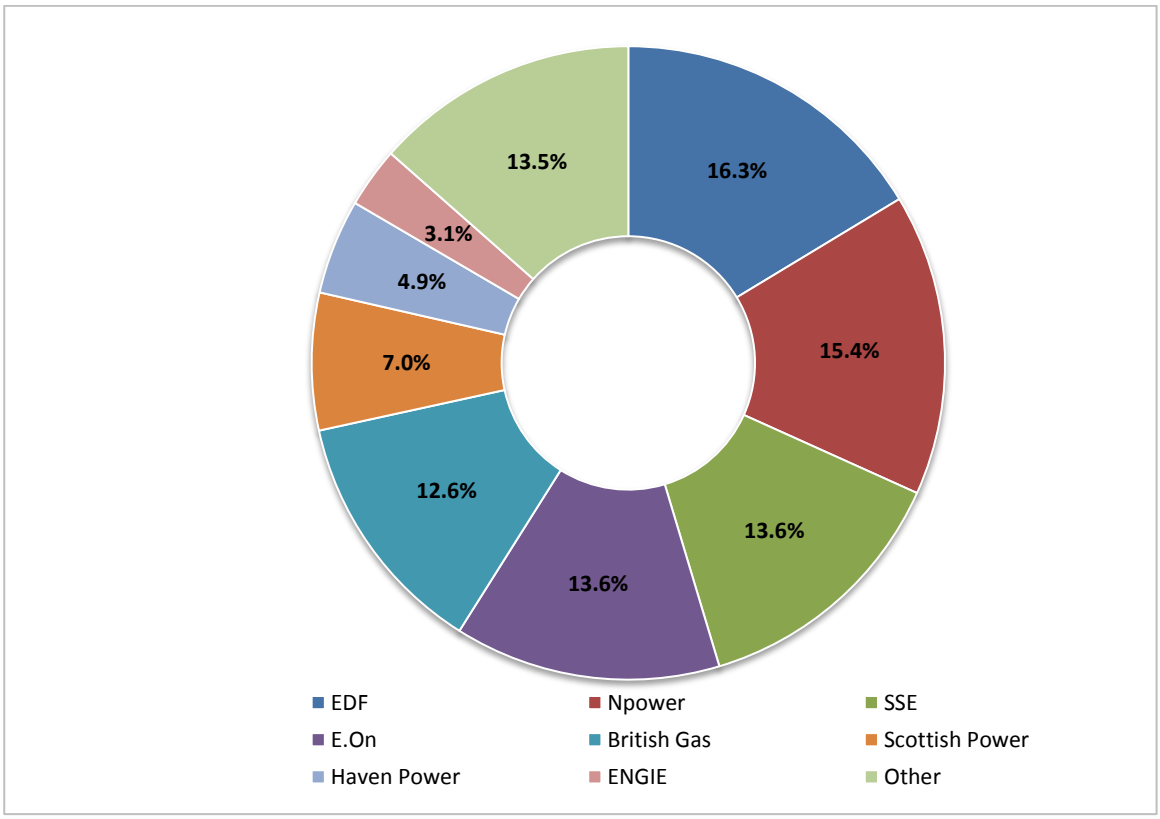
Share of obligation by suppliers

5.10 **Figure 26** shows how the total UK obligation was split between supplier groups.[37] Each supplier group with a share of the obligation of 3% or above is shown individually, those with a share below 3% are grouped together under 'Other'.

5.11 The 'big six' suppliers (British Gas, E.ON, EDF, Npower, Scottish Power and SSE) shared 78.6% of the obligation between them. This is down from 81.9% last year. Full details of supplier obligations are included in Appendix 4.

[32] Defined in article 68 (4) of the 2015 RO Order, article 44 (4) of the 2009 ROS Order and article 41 (4) of the 2009 NIRO Order.
[33] https://www.ofgem.gov.uk/publications-and-updates/renewables-obligation-guidance-suppliers-december-2015
[34] http://www.elexon.co.uk/
[35] http://www.nie.co.uk/
[36] A licensee is a person that supplies electricity in the UK and incurs a Renewables Obligation. In some cases parent companies (supplier groups) own more than one licensee. Licensees can also have more than one obligation, if for example they supply electricity in England and Wales, and Scotland.
[37] A list of supplier groups and their licences is in Appendix 4.

Figure 26 – Proportion of total obligation (RO, ROS and NIRO combined) by supplier group in 2015-16



ROCs presented and payments made by suppliers

5.12 Suppliers had a total of 138 obligations across the three Orders and their various licences. Across the schemes:

- Suppliers met 109 of the 138 obligations by presenting ROCs alone. Of these, 55 were on the RO, 50 on the ROS and four on the NIRO.
- Suppliers met 24 obligations entirely through buy-out payments. Of these 11 were on the RO, nine were on the ROS and four on the NIRO.
- Suppliers met 5 obligations through a combination of payments and ROCs. Of these three were on the RO and two on the NIRO. None were on the ROS.

ROCs presented

5.13 **Table 7** summarises the obligations and ROCs presented by suppliers across the Orders. This shows that suppliers presented 84.4 million ROCs to us for compliance in 2015-16. This is an increase of 13.1 million ROCs, or 18.4%, on the 71.3 million they presented in 2014-15.

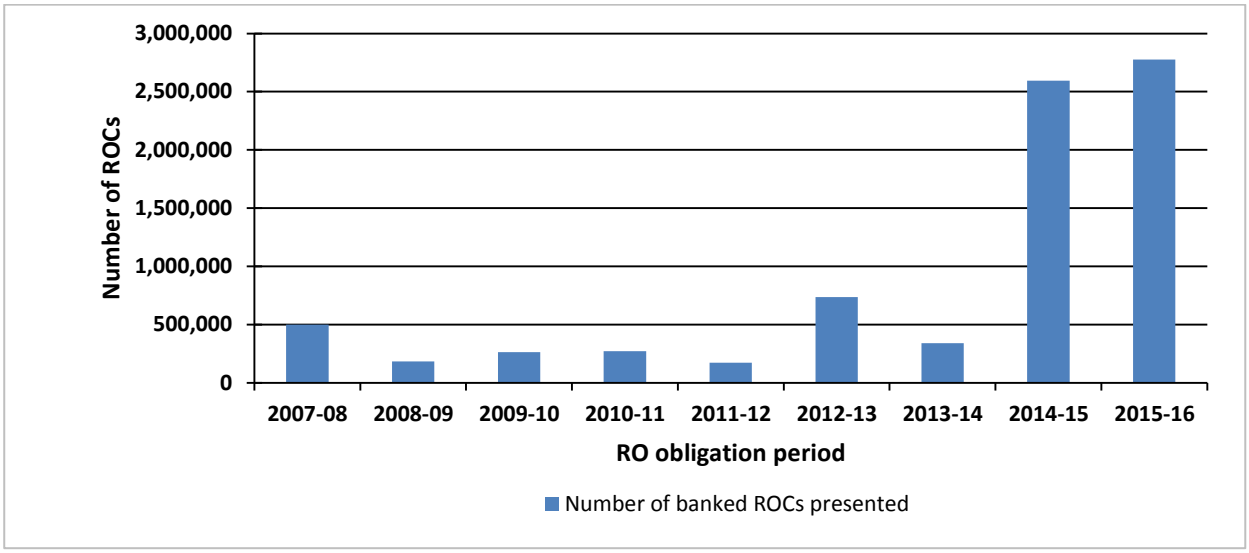
5.14 Suppliers met 99.9% of the total UK obligation by presenting ROCs to us. This is the highest ever proportion of the obligation met by presenting ROCs. As in 2014-15, this is mainly because of the large number of ROCs that were claimed and issued by us relative to the size of the ROC target.

Table 7 – Summary of ROCs presented towards each UK obligation in 2015-16

	RO	ROS	NIRO	UK total
Electricity supplied (MWh)	261,300,471	26,681,314	7,770,988	295,752,773
Obligation (ROCs)	75,777,136	7,737,581	924,748	84,439,465
ROCs presented	75,731,081	7,732,473	921,173	84,384,727
No. of licensees with an obligation	69	59	10	138
Percentage of obligation met with ROCs	99.94%	99.93%	99.61%	99.94%

5.15 Suppliers are allowed to meet up to 25% of an obligation by presenting unused ROCs from the previous obligation period.[38] We call these banked ROCs. Due to the number of ROCs issued in 2014-15, a large number of banked ROCs were available for suppliers to present to us in 2015-16. They presented around 2.8 million, a small increase from the 2.6 million banked ROCs presented last year. **Figure 27** shows that the number of banked ROCs presented in the 2014-15 and 2015-16 obligation periods was significantly higher than previous obligation periods. This is due to the high number of ROCs issued in the 2013-14 and 2014-15 obligation periods.

Figure 27 – Number of banked ROCs presented each obligation period since 2007-08



5.16 The high volume of ROCs we issued in 2015-16 and the large number of banked ROCs from 2014-15 that suppliers presented will have a consequential effect into 2016-17. Of the 90.4 million ROCs we issued in 2015-16, around 8.8 million were not presented by suppliers and will be available as banked ROCs next year.

5.17 There is a cap[39] on the amount of ROCs from electricity generated from bioliquids that suppliers can present towards their obligations. This limits suppliers to meeting 4% of an obligation using bioliquid ROCs. Some bioliquid ROCs are exempt from the cap. Details of the exemptions are in section 4.5 of our supplier guidance document[40].

[38] Defined in article 14(2) of the 2015 RO Order and articles 13(2) of the 2009 ROS and NIRO Orders
[39] The bioliquid cap is described in article 14(3) and (4) of the 2015 RO Order and in the 2013 amendments to articles 13 of the 2009 RO and NIRO Orders.
[40] https://www.ofgem.gov.uk/publications-and-updates/renewables-obligation-guidance-suppliers-december-2015

5.18 In 2015-16 suppliers presented 58,973 bioliquid ROCs to us, across the obligations, which qualified under the cap. This is 0.07% of the total obligation, so well below the 4% cap, however this is roughly double the 29,301 qualifying bioliquid ROCs presented last year. Suppliers also presented 1,352,131 bioliquid ROCs towards their 2015-16 obligation that were exempt from the cap, which was a significant increase on the 874,999 presented in the 2014-15 obligation period.

Payments made

5.19 Suppliers who chose to make buy-out payments paid a total of £575,753.80 into the buy-out funds by the legislative deadline of 31 August.

5.20 Across the schemes, five suppliers covering eight obligations[41] did not meet the deadline for making buy-out payments. All of these suppliers complied with their obligations by making late payments by 31 October, totalling £1,861,115.04.

5.21 **Table 8** summarises the payments suppliers made towards each UK obligation in 2015-16. Full tables of how all suppliers met their obligations are in Appendix 4.

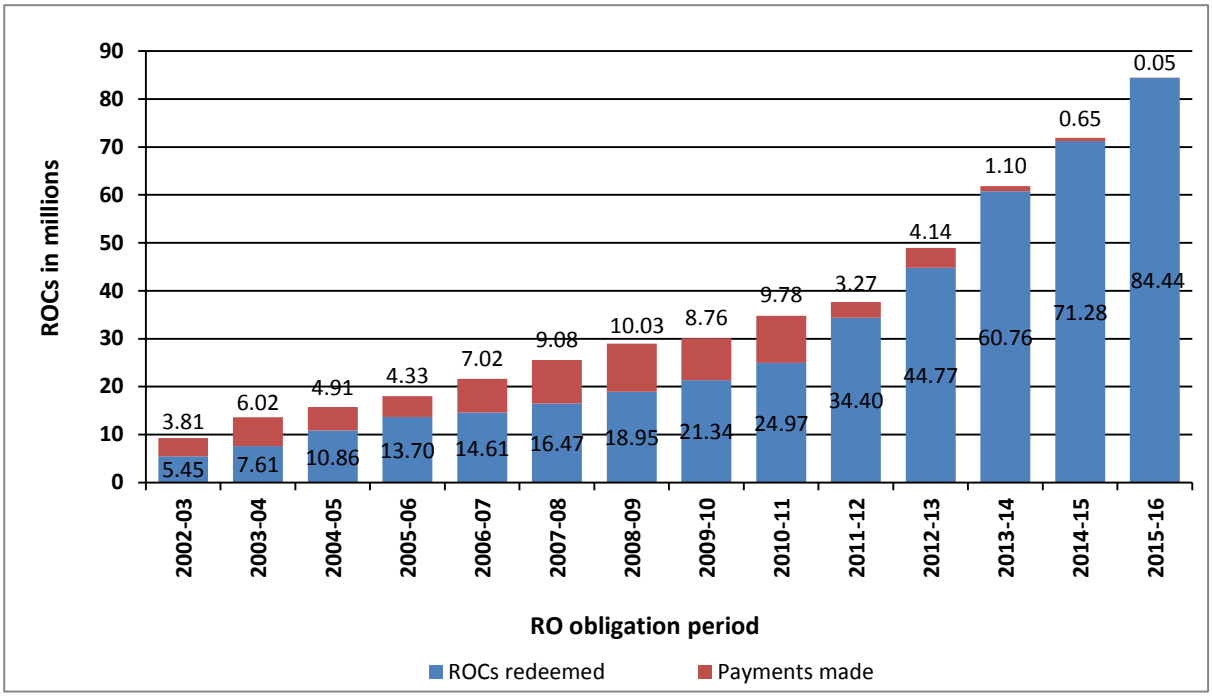
Table 8 – Payments made towards each UK obligation in 2015-16

	RO	ROS	NIRO	UK total
Buy-out payments made	£401,004.94	£16,269.11	£158,479.75	£575,753.80
Late payments made	£1,649,836.90	£211,278.14	£0.00	£1,861,115.04

5.22 **Figure 28** shows the trend in total UK obligation and the proportions met through ROCs and payments respectively since the RO began in 2002-03. The height of the columns represents the total obligation each year. The green sections represent the proportion of the obligation the suppliers met by presenting ROCs, the red sections represent the payments they made. This very clearly shows the marked increase in the proportion met by presenting ROCs in the last three years.

[41] Three of the suppliers had to make late payments in both England and Wales and Scotland.

Figure 28 – Trend in UK obligation and proportion met through ROCs and payments since 2002-03



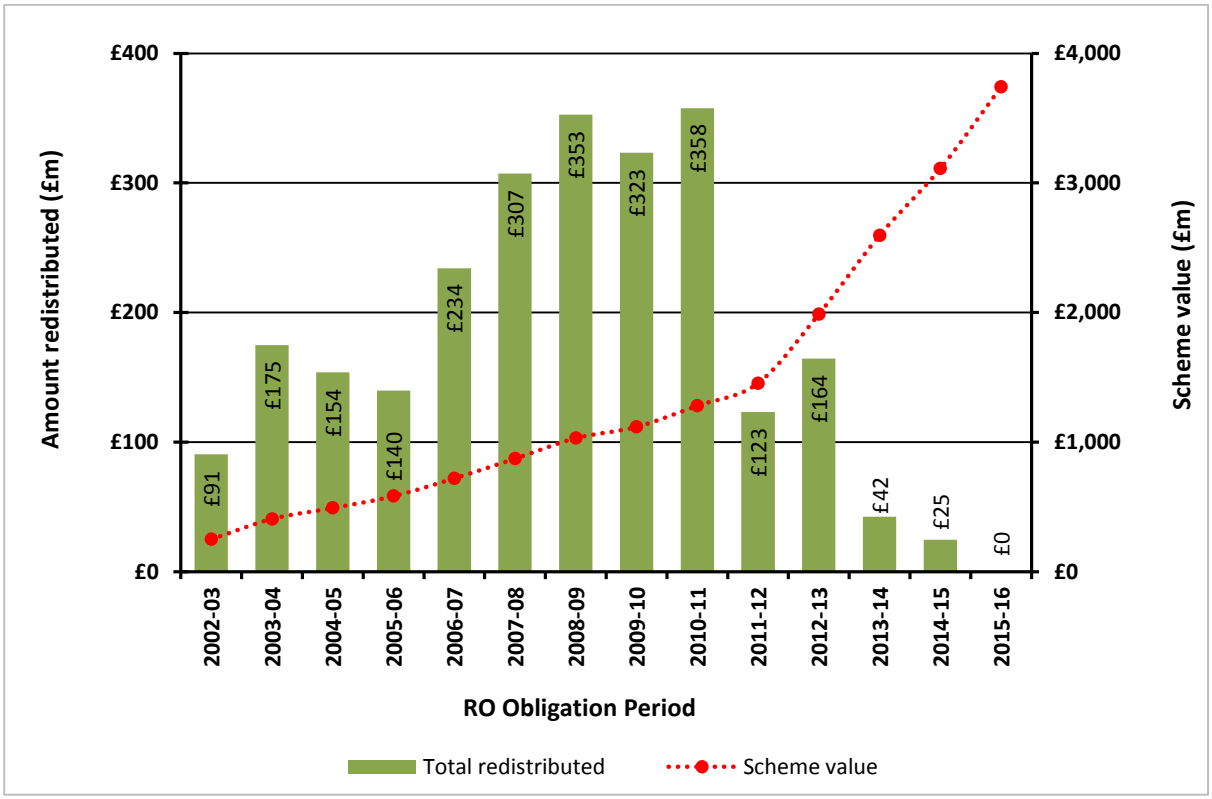
Redistribution of the buy-out and late payment funds

5.23 For the first time since the RO scheme launched, there were insufficient funds available in the buy-out and late payment funds to cover our and UREGNI's administration costs. Therefore, we made no redistribution payments for the 2015-16 obligation period[42]. We have engaged with key stakeholders including BEIS, the Scottish Government and DfE in Northern Ireland to agree how this shortfall will be met.

5.24 **Figure 29** shows the amounts we have redistributed each year, and the growth in value of the scheme, since its introduction in 2002.

[42] https://www.ofgem.gov.uk/publications-and-updates/renewable-obligation-number-rocs-presented-towards-201516-uk-obligation

Figure 29 – Total payments redistributed to suppliers and scheme value since 2002-03



ROC recycle value

5.25 As there was no redistribution, the ROC recycle value (the amount suppliers received back for each ROC they presented) for the 2015-16 obligation period was £0. This means that there was nothing to add to the buy-out price of £44.33, so the notional worth of a ROC for this obligation period was £44.33.

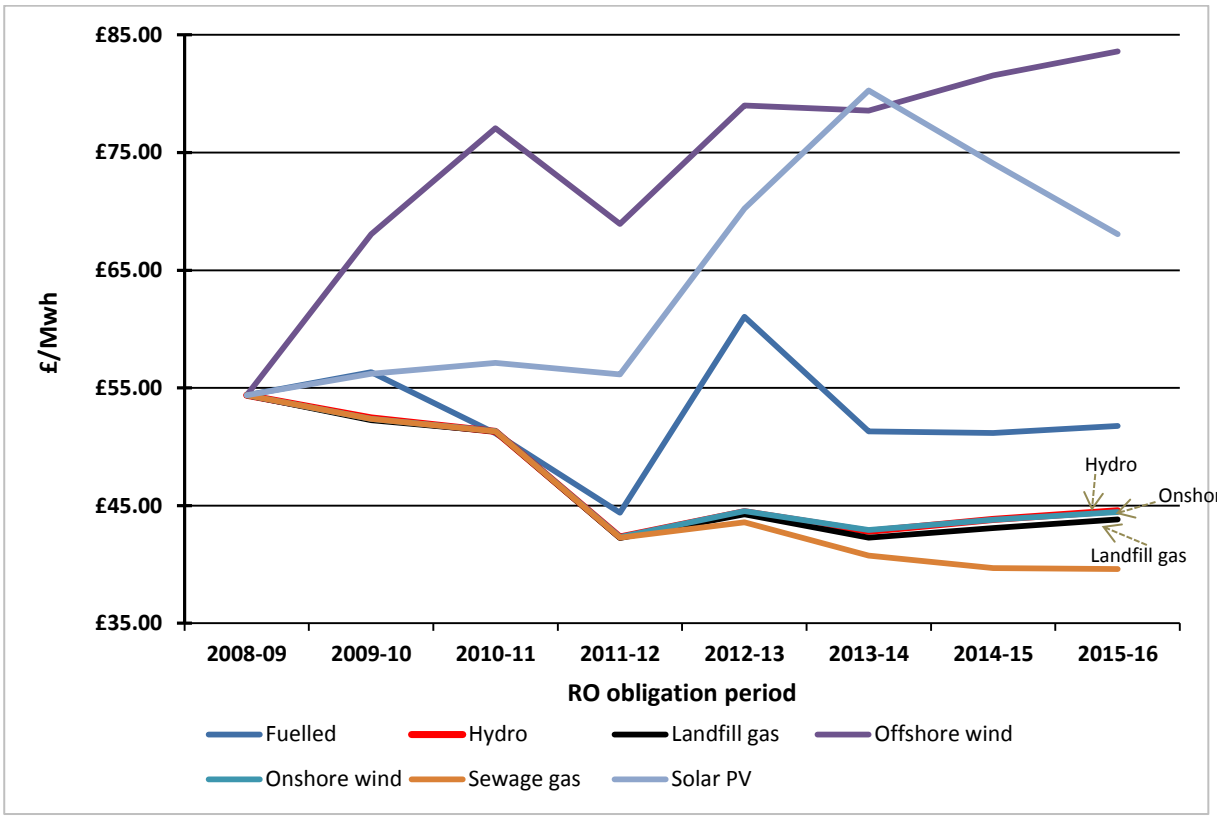
Table 9 – Determination of ROC recycle value since 2008-09

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Total of buy-out and late payments redistributed	£353m	£324m	£358m	£123m	£164m	£42m	£25m	£0.0
Total ROCs presented	18.9m	21.3m	25.0m	34.4m	44.8m	60.8m	71.3m	84.4m
Recycle value per ROC presented	£18.61	£15.17	£14.35	£3.58	£3.67	£0.70	£0.35	£0.00
Worth of a ROC to a supplier	£54.37	£52.36	£51.34	£42.27	£44.38	£42.72	£43.65	£44.33
Average ROCs issued/MWh	1.00	1.04	1.07	1.12	1.27	1.27	1.28	1.31
Support per MWh supplied	£54.37	£54.45	£54.93	£47.34	£56.36	£54.25	£55.87	£58.07

5.26 **Table 9** summarises the ROC recycle value and support per MWh supplied since 2008-09. The total value of the scheme in an obligation period is the worth of a ROC multiplied by the number of ROCs presented for compliance by suppliers. In 2015-16, suppliers presented 84.4 million ROCs each worth £44.33, giving a scheme value of £3.7 billion.

5.27 The average number of ROCs issued per MWh (from **Table 9**) multiplied by the worth of a ROC gives the support (in £) per MWh generated for an obligation period. These are shown in the bottom row of **Table 9**. There was a small increase in the ROCs per MWh ratio and the worth of a ROC from 2014-15 to 2015-16. Correspondingly there was also a small increase in the support per MWh generated, from £55.87 to £58.07. Other than a sharp drop in 2011-12, this value has remained fairly stable since 2008-09 (£55 ± £2.20).

Figure 30 – Value of support per MWh for each technology since 2008-09



**Tidal and wave power are not included here due to the very small number of ROCs each technology has received.*

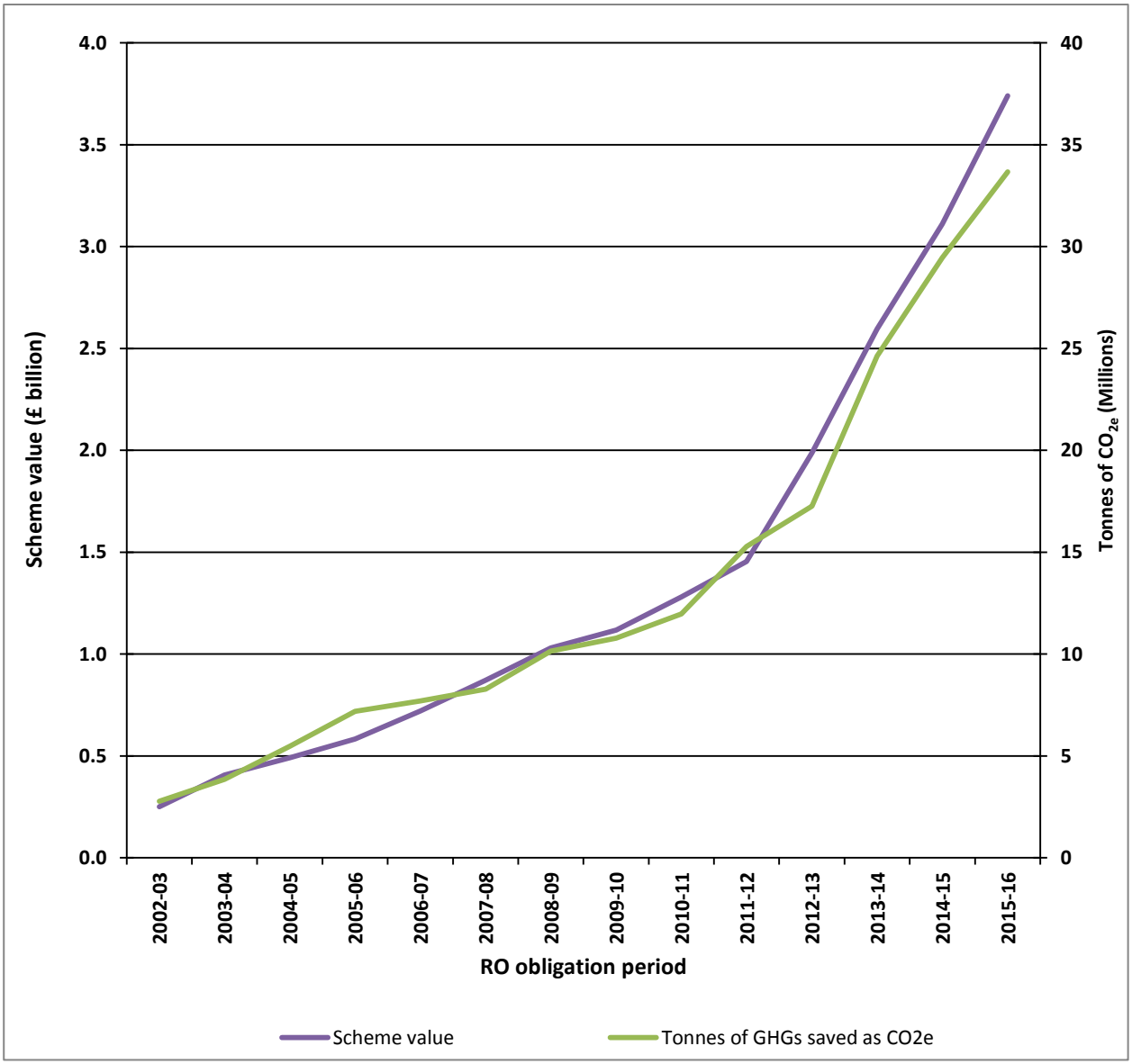
5.28 **Figure 30** shows the cost of support in £ per MWh broken down by technology type. The chart begins in 2008-09, before banding, when all technologies received 1 ROC per MWh generated. The most obvious change from last year is the continued drop in the cost of support per MWh of solar PV, from around £74 in 2014-15 to about £68 in 2015-16. This follows the same pattern from the 2013-14 obligation period in to the 2014-15 obligation period. A large proportion of the RO's solar PV capacity has been accredited in the last three obligation periods alongside a drop in banding rates for solar PV stations. There has also been an increase in the cost of support per MWh of offshore wind. One reason for this is that the number of ROCs issued on average per MWh for offshore wind has increased every year since ROC banding was introduced. Furthermore, offshore wind has had the highest cost of support per MWh of all technologies shown in **Figure 30** for almost every year since ROC banding was introduced.

Carbon emissions

5.29 Using the scheme value of £3.7 billion and the estimated GHG emissions saved under the scheme of 33.7 million tonnes (as explained in paragraph 3.23 of Chapter 3), the cost of GHG emissions saved in 2015-16 was £111.08 per tonne (CO_2e). This is higher than last year's value of £105.66. The main reason for this is that the value of the scheme has increased faster than output from renewable generation. Whilst the number of tonnes of GHG emissions saved increased from 29.4 million tonnes, the scheme value also increased from £3.1 billion to £3.7 billion.

5.30 We have used the methodology described in paragraphs 3.22 – 3.24 in Chapter 3, and Defra's figures for each year since 2002, to plot GHG emissions saved against scheme value in **Figure 31**.

Figure 31 – Scheme value and yearly GHG savings since 2002-03



Mutualisation

5.31 If a supplier is unable to meet its obligation under the RO or ROS – for example, if it has gone into administration – there may be a shortfall in the buy-out fund. The mutualisation provision in RO legislation[43] is designed to account for this. Mutualisation is triggered above a certain amount, known as a relevant shortfall.[44] Mutualisation does not apply in NI.

[43] Mutualisation is described in articles 72 – 77 of the 2015 RO Order and articles 48 – 52 of the 2009 ROS Order.
[44] Article 72 in the 2015 RO Order and Schedule 3 in the 2009 ROS Order define the amount of relevant shortfall.

5.32 If mutualisation is triggered, all suppliers with an obligation under the RO and ROS must make additional payments to make up the shortfall. These payments are capped at the mutualisation ceiling, an amount we publish every year before the start of the obligation period. We adjust this in the same way as the buy-out price, in line with the change in RPI from the previous calendar year.

5.33 The mutualisation ceilings for 2015-16 were approximately £267 million in England and Wales and £26.7 million in Scotland. We published a notice of these in February 2015.[45]

5.34 Mutualisation payments would be redistributed to suppliers on the same basis as the buy-out and late payment funds, using the single recycling mechanism. However, even though mutualisation does not apply in NI, NI suppliers will receive a share of any mutualisation funds from the RO and ROS.

5.35 Mutualisation was not triggered in 2015-16, nor in any previous obligation period.

[45] https://www.ofgem.gov.uk/publications-and-updates/renewables-obligation-ro-buy-out-price-44-33-and-mutualisation-ceilings-2015-16

6. Audits and counter fraud under the RO

Chapter summary

Our auditors carried out 45 audits of large generators across a range of technology types and audited 60 Northern Ireland microgenerators. Our auditors also audited four licensed suppliers on their supply volume submission processes. We rated the majority of generator and all supplier audits as Good or Satisfactory, and uncovered one instance of suspected provision of false information. We audited one agent and two 'rent-a-roof' companies in Northern Ireland against their obligations under the NIRO; one audit was rated Good whilst the others were Unsatisfactory. Ofgem staff also undertook desk audits of two large biomass fuelled generators which produced satisfactory outcomes.

Audits of generating stations

6.1 We expect all generating stations accredited under the RO to submit correct information to us when applying for accreditation. They also need to inform us of any changes that might affect their accreditation and to submit accurate and reliable data when claiming ROCs. As set out in our published guidance, each year we carry out a programme of audits of generating stations to verify this.

6.2 The objectives of our generator audit programme are to:

- Verify output data submissions (based on which we issue ROCs)
- Assure accreditation information is correct
- Detect fraud and non-compliance
- Deter the fraudulent or careless submission of inaccurate data
- Detect departures from good practice.

6.3 We give each audit a rating depending on the findings. These ratings are:

- **Good** (no issues identified at audit)
- **Satisfactory** (minor issues or instances where the generator is not following best practice)
- **Weak** (the audit identified moderate issues of non-compliance)
- **Unsatisfactory** (major instances of non-compliance or suspected fraud identified).

6.4 We receive a full report of the auditor's findings after each site visit. Once we have approved them, we share a copy with the operator of the generating station asking them to comment on the findings and to rectify all problems. We only close an audit once we are sure that corrective action has been taken to address all problems identified. In a few instances, we temporarily suspend the issue of ROCs while we wait for a station to send us information or take corrective action.

2015-16 generator audits

6.5 In 2015-16 we contracted Black and Veatch to carry out technical audits of 45 large-scale (greater than 50kW) generating stations. The generating stations that we selected for audit consisted predominantly of those about which we had specific concerns, together with a small number which were randomly selected or representative examples of a particular class of generator (for example of technology type). **Table 10** shows the breakdown of the audits by generating technology type and the rating given by the auditor.

Table 10 - Technologies audited in 2015-16

Technology	Stations audited	Rating awarded by auditor			
		Good	Satisfactory	Weak	Unsatisfactory
Fuelled	13	0	7	5	1
Hydro	2	0	1	1	0
Landfill gas	1	0	0	0	1
Offshore wind	2	0	2	0	0
Onshore wind	7	1	3	3	0
Solar PV (pre-accreditation)	9	4	3	2	0
Solar PV	10	0	5	1	4
Sewage gas	1	0	1	0	0
TOTALS	**45**	**5**	**22**	**12**	**6**

6.6 We continued our targeted approach in 2015-16, meaning that a higher proportion of audited generators were selected on the basis of existing concerns, rather than being randomly selected. Across all the audits this year, five were rated as Good and 22 Satisfactory; 12 were rated Weak and six, Unsatisfactory. Overall, the results can be considered an improvement on those in 2014-15, where no audits were rated Good and more (nine of 40) were rated Unsatisfactory.

6.7 Among the Unsatisfactory audits this year, two resulted from findings which called into question the ROC banding of the generating station. These concerned uncertainties about the commissioning date of solar PV stations. In each case the operator was able to produce further information to verify the reported date included within their accreditation application, and thus maintain the existing ROC banding granted to the station.

6.8 The other four Unsatisfactory audit ratings concerned large over-claims of ROCs made by the generators as a result of errors in their reported generation data. In two instances where over-claims were 2,046 and 290 ROCs respectively, the certificates were not issued as our standard pre-issue checks prevented this. To correct the errors, the generators' reported generation figures across several months were reduced to match the relevant half-hourly data records. In another case 6,175 ROCs were incorrectly issued; all these were subsequently revoked. In the final case our audit prompted a further investigation which showed that in addition to discrepancies between metered and reported generation, around three-quarters of metered generation derived from burning a fossil fuel rather than a renewable fuel, as claimed. This matter was reported to Action Fraud. The misreporting in this instance had resulted in the incorrect issue of 6,742 ROCs. It was only possible for us to revoke 6,151 of these as all other ROCs issued to the generator had been passed on to licensed suppliers and presented for compliance by them. The operator of the generating station concerned has gone into liquidation, but it is anticipated that the station will be acquired by a new owner. Once generation recommences we will refuse to issue the balance of 591 ROCs in respect of the initially reported generation, as required by Article 25 of the ROO 2015.

6.9 We carried out pre-accreditation audits of nine solar PV stations where we wanted to ensure that they had commissioned on the stated date, just before a drop in the ROC banding rate took place. No major concerns arose from these audits and none were given an Unsatisfactory rating.

6.10 More generally, for a large proportion of the audits, the operator did not provide all the information requested by the auditor before completion of the audit report.

6.11 As in previous years, inaccuracies in accreditation information were also relatively common. Incorrect figures for DNC, TIC and commissioning date were identified in more than half of the audits, although in most cases these had little or no impact on ROC issue. Inaccurate single line diagrams and incorrect meter details were also found in about one third of cases.

6.12 Other fairly common findings were of errors in some reported generation figures, although these did not always significantly affect ROCs claimed. In two instances, audits found evidence to suggest that the generating station might not be separate from a neighbouring RO accredited generating station. In both cases, following further assessment of the evidence produced by the operator, Ofgem upheld the original determination that the stations were separate.

6.13 Among biomass fuelled generators, there were a few departures from agreed procedures for fuel measurement and sampling (FMS). **Table 11** lists the most common issues identified in the 2015-16 generator audits.

Table 11: Issues identified during the 2015-16 generator audits

Issues identified by audits	Number of instances
Requested documents/information not provided at audit	30
Commissioning date discrepancy in application for accreditation	26
DNC/TIC incorrect in application for accreditation	25
Incomplete or inaccurate Single Line Diagram submitted with application for accreditation	16
Meter details incorrect in application for accreditation	13
Other minor errors in application for accreditation	11
Fossil fuel/standby generator not shown/details incorrect in for accreditation	5
ROC over-claim	13
Under-claim of ROCs	9
Minor discrepancies in reported volumes (not affecting ROC claims)	9
Electrical meter out of calibration period	4
Generating station possibly not separate	2
Minor FMS discrepancy	6
FMS procedures not being followed	3

6.14 Arising from the audits, there were nine cases in which we found that a small number of ROCs had been under-claimed. There were 13 instances of ROCs having been over-claimed. We addressed all over- and under-claims by revoking or issuing additional ROCs. Where we cannot revoke ROCs (where they have already been presented for compliance) we must withhold a corresponding number of ROCs from future reported generation.

6.15 Ofgem staff also carried out desk audits of two large biomass fuelled stations. The first of these satisfactorily verified that all ROCs had been correctly issued over the most recent 12 month period through a detailed check of electricity generation and fuel use records for the period. The second audit followed a site visit and reviewed evidence including that collated for the generator's own internal audit.

6.16 Aspects considered were the station's logistics and materials handling processes and procedures. These included whether FMS procedures previously agreed with Ofgem were followed, the operation of the fuel tracking processes, as well as a review of the data submission process including reconciliation of half-hourly data against submitted electricity figures. No significant concerns were identified, although agreed FMS procedures have been amended to reflect the generator's current practice. We did not assign formal audit ratings to these stations as there is currently no audit rating framework for desk audits which would allow for an objective comparison to be made between the findings of desk and site audits.

2015-16 audits of Northern Ireland microgenerators

6.17 The support for new micro (less than 50kW) solar PV stations under NIRO was reduced from 4 NIROCs/MWh to 3 NIROCs/MWh on 1 October 2015. In the period leading up to this banding drop we experienced a large increase in applications for accreditation, primarily from agent organisations acting on behalf of householder generators.

6.18 To give us additional assurance that generating stations who applied for the higher support level had commissioned by 1 October 2015, we asked Black and Veatch to carry out a series of site visits. They audited a sample of 60 microgenerators in early October 2015. The site audits did not identify any major concerns, ie information that would affect the ROC banding of the station in question, but did identify a few concerns in relation to meter readings and the configuration of some microgenerating stations. We also undertook enhanced verification checks in September and October 2015 which included cross-checking accreditation information through telephone calls and letters to a total of 549 householders.

6.19 From our enhanced verification checks we identified a total of 11 stations which did not appear to have commissioned by 30 September 2015, and over 50 with less serious discrepancies. We noticed that most of the microgenerators with significant concerns related to a small number of PV installers. We engaged with these installers to ensure that the information they provided to agent organisations for accreditation purposes was accurate and complete. We also gave greater than usual scrutiny to applications associated with these installers, including those not originally forming part of our desk audits. As a result, the commissioning dates of several microgenerating stations were revised to dates later than 30 September 2015. These stations will receive the lower rate of ROCs.

Audits of suppliers

6.20 Given the large financial sums involved in the RO scheme and the critical importance of suppliers reporting accurate supply volumes for us to determine their obligations, we carry out an annual programme of audits of licensed suppliers. These take place in July and early August, soon after suppliers have submitted their annual electricity supply figures for the purposes of RO compliance.

6.21 The objectives of our supplier audit programme are to gain assurance on the accuracy of electricity supply figures submitted to us, to deter the fraudulent or careless submission of inaccurate data and to detect departures from good practice.

6.22 We use the following criteria, as part of a risk-based approach, to select the suppliers to audit:

- Any of the big six suppliers not audited in the previous two years.
- New suppliers (those for which the 2015-16 obligation period was the first complete year they held a supply licence, and had supplied electricity during the period).
- Suppliers who do not (or cannot) use our recommended methodology for reporting supply volumes (refer to Chapter 5).

- Any suppliers whose figures had given cause for concern in the present or previous obligation periods, including follow-up audits from the previous year.

2015-16 supplier audits

6.23 Before suppliers submit their annual supply figures by 1 July, we receive dataflows from Elexon which enable us to estimate likely supply figures for most suppliers. This means we identify many anomalies and address them with suppliers before the annual audits. This reduces the scope for the auditors to find undetected discrepancies in reported supply volumes. However the audits remain useful in helping to determine the source of these discrepancies and in identifying weaknesses in suppliers' internal assurance processes.

6.24 Following our analysis of Elexon dataflows, we decided to audit four suppliers in 2015-16, compared to seven in 2014-15 and 12 in the previous year. As in previous years we contracted Grant Thornton UK LLP to carry out the audits for 2015-16. We apply the same audit ratings to the supplier audits as we do to the generator audits.

6.25 We rated one of the suppliers as Good and three as Satisfactory. The audits found no major problems and none of the issues identified prevented the suppliers from meeting the legislative deadlines for compliance with the RO. However, the auditors did identify some discrepancies in supplier procedures. The most notable related to suppliers who were not managing their Register accounts appropriately, in particular where lists of registered users were out of date and instances where passwords were being shared between users. This contravenes the terms and conditions of using our Register. The suppliers in question have since updated their accounts to remove the old users and they have amended their procedures to ensure passwords are no longer shared.

2015-16 Northern Ireland agent audits

6.26 The NIRO allows the operator of a micro NIRO generating station (refer to Chapter 2) to appoint an agent to receive NIROCs on their behalf. An agent is given the power to carry out all the functions of the operator including seeking accreditation, signing declarations, submitting output data and claiming NIROCs on behalf of the operator.

6.27 Although the number of ROCs issued to individual micro NIRO generators is relatively small, as a result of the continued surge in the number of newly-accredited stations (refer to Chapter 2) we decided to repeat the agent audits we introduced last year to provide assurance of this sector. We appointed Grant Thornton UK LLP in March 2016 to audit one agent and two rent-a-roof companies operating in Northern Ireland.

6.28 We selected the companies because of concerns about their internal assurance processes, the large number of generating stations they own or represent or, in one case, because they were a new participant in the scheme. The vast majority of micro NIRO generators make annual, rather than monthly, certificate claims for NIROCs. As the audits took place before the annual claims for the 2015-16 obligation period, the audits examined how the companies concerned planned to ensure the accuracy of their NIROC claims as well as general compliance with legislative requirements. Specifically, they checked:

- that the agent or company had appropriate procedures in place to ensure accreditation data provided for generating stations is accurate and valid, and that these procedures are being followed,
- the level and extent of scrutiny and checks the agent or company applies to generation data and meter readings to ensure that accurate and reliable data is submitted to Ofgem, and

- that the agent had permission to fully act as an agent on behalf of the generating stations they represented.

6.29 The same assurance ratings used for our generator and supplier audits were applied to the NI agent audits. One of the audits was assigned an assurance rating of Good while the other two were rated Unsatisfactory. The types of findings which contributed to the Unsatisfactory findings included:

- Some of the processes associated with obtaining and checking generators' accreditation information, ensuring the accuracy of generation data, and for making annual declarations were deficient or absent
- Some generating stations did not commission on the stated date
- Initial meter readings provided were absent or not taken on the accreditation date (as required) for some generators, which could lead to inaccurate claims for NIROCs.

6.30 As with the generator and supplier audits, we provided copies of the audit reports to the respective parties, along with letters summarising the actions we expected to be taken. We followed these up through meetings and further correspondence to ensure that all deficiencies identified were fully addressed by the companies concerned.

Counter Fraud on the RO

6.31 Ofgem has a dedicated Counter Fraud team which provides fraud prevention, detection and investigation support to all schemes we administer.

6.32 During the 2015-16 obligation period, the team received six concerns of suspected fraud on the RO involving 11 sites. These were raised by Ofgem's operational staff and other sources.

6.33 This has resulted in a Police investigation into one of the sites, which our Counter Fraud team is currently supporting, and the tariff of another site investigated was reduced due to errors identified.

6.34 On the NIRO scheme, our Counter Fraud team investigated nine cases of suspected fraud relating to 15 installations in the 2015-16 obligation period.

6.35 All of these cases were opened following a drop in support on 1 October 2015 and were identified from analysis by our Counter Fraud team. Whilst there was insufficient evidence to substantiate the suspicion of fraud, some tariff rates were amended due to the errors identified. There were no losses in any of these cases as these issues were identified prior to any payments being made.

7. Changes in legislation

Chapter summary

DECC and the devolved administrations in Scotland and Northern Ireland introduced a number of amendments to the RO in 2015 and 2016. These amendments related to sustainability criteria and to various scheme closure-related changes. In England, Scotland and Wales, the RO closed to new solar PV generating capacity. Across the UK, it closed to new onshore wind generating capacity. It will close to all other technologies in 2017. Grace periods are available for all technologies provided certain criteria are met.

RO closure

7.1 In July 2011 the UK government announced its intention to close the RO to new generating capacity from 31 March 2017. To continue to support low-carbon electricity generation, the government has introduced the Contracts for Difference (CfD) scheme which opened for applications on 16 October 2014.

7.2 In 2014, DECC, the Scottish Government and DETINI[46] made a number of amendments to the RO setting out the transition arrangements from the RO to CfD.

7.3 In 2015 and 2016, DECC and the devolved administrations introduced further amendments to close the RO scheme early to some technologies/capacities. These are detailed below.

RO amendments 2015

7.4 DECC and the devolved administrations made a number of amendments to the RO in 2015. These were the consolidation of the RO Orders (for England and Wales), further enhancement to sustainability criteria for biomass, and a reduction in the available ROC rate for solar PV in Northern Ireland.

Consolidation of the RO Orders – England and Wales

7.5 DECC consolidated the Renewables Obligation Order 2009 and the subsequent amendments to this Order into the Renewables Obligation Order 2015. We reissued our primary guidance documents[47] on 1 December 2015 to update all article references to align with the consolidated Order.

Sustainability criteria amendments – England, Wales and Scotland

7.6 The Renewables Obligation Order 2015 and the Renewables Obligation (Scotland) Amendment Order 2015 took effect from 1 December 2015. This legislation introduced further enhancements to the sustainability criteria for biomass stations. The legislative amendments made the following changes for generating stations in England, Scotland and Wales:

- Stations with a TIC greater than or equal to 1MW using solid biomass and/or biogas fuels must meet the sustainability criteria to be eligible for ROCs.

[46] In July 2016 it was announced that DECC would be merged in to a new department for Business, Energy and Industrial Strategy (BEIS). In 2016 it was also announced that the Department of Enterprise, Trade and Investment Northern Ireland (DETINI) would become part of the new Department for Economy (DFE). We have referred to these departments by their previous names where the announcements and legislation were made by those departments, as opposed to the new ones.

[47] See Chapter 8 for a full list of the guidance updates we have issued.

- A greenhouse gas annual averaging mechanism was introduced to allow flexibility for consignments of biomass that do not meet the relevant GHG threshold in a month. This must be averaged across the year and therefore may be below the GHG threshold annually. Until 2020, this is only applicable to post-2013 dedicated biomass stations[48].
- 'Highly biodiverse grasslands' was added to the protected land types in the land criteria.
- The Timber Standard for Heat and Electricity was written into the legislation and the addition that some woody biomass is deemed sustainable when reporting against the land criteria for woody biomass.
- The GHG trajectory until 2025 was tightened, which means stations have to meet a more stringent GHG target in 2020 and 2025 in order to still meet the GHG criteria. The target goes from 79.2gGHG/MJ electricity for stations which are not post-2013 dedicated biomass to 50gGHG/MJ electricity in 2025.
- Revisions were made to the requirement for operators of generating stations to provide annual information to us. Specifically, the addition of a question on the proportion of woody biomass that was composed of hardwood and softwood and a change in the definition for saw logs.

7.7 We have published updates to all relevant guidance documents[49]. These documents apply to England, Wales and Scotland only. DETINI intended to introduce the legislative provisions in line with GB on 1 December 2015 but experienced delays – see the Other RO amendments in 2016 section (paragraph 7.21) for further details.

Solar PV ROC rate reduction – Northern Ireland

7.8 On 1 October 2015, a reduction to the banding level for solar PV stations in NI with a generating capacity of up to 50kW came into effect. From this date, new stations, or additional capacity which does not increase the total installed capacity of the station beyond 50kW, receive 3 ROCS per MWh. A further reduction, to 2 ROCs per MWh, took effect from 1 October 2016.

Removal of 'grandfathering'

7.9 DECC confirmed in December 2015 the removal of 'grandfathering' (whereby accredited stations are guaranteed a set ROC rate for the lifetime of their support under the scheme) for all small-scale solar PV stations in England and Wales with an accreditation date after 22 July 2015, unless they are able to meet certain exception criteria[50]. This policy decision will not affect stations unless the rate available to solar PV changes in the future – see the Proposed solar PV banding change section (paragraph 7.21) for further details.

RO, ROS and NIRO closures in 2015 and 2016

RO Closure (Amendment) Order 2015 – Closure to solar PV stations over 5MW

7.10 The RO and ROS closed to new solar PV generating stations over 5MW TIC from 1 April 2015. The RO Closure (Amendment) Order 2015 introduced this change. Three grace periods were made available for stations that were not able to commission before the closure date of 1 April 2015. Accreditation for large scale solar PV stations remained possible up to 31 March 2016, subject to the grace period conditions being met. The grace periods were:

[48] 'Post-2013 dedicated biomass station' is defined in schedule 2 of the ROO, article 54 of the ROS and article 46 of the NIRO.
[49] These include RO: Sustainability Criteria, RO: Sustainability Reporting, RO: Fuel Measurement and Sampling and RO: Biodiesel and fossil-derived bioliquids guidance
[50] https://www.gov.uk/government/consultations/changes-to-financial-support-for-solar-pv

- Preliminary accreditation grace period: for stations that were granted preliminary accreditation on or before 13 May 2014
- Significant investment grace period: for stations that have made significant financial commitments in relation to a project on or before 13 May 2014
- Grid delay grace period: for stations that experience grid connection delays that are outside of the developer's control.

7.11 Final guidance for applicants wishing to apply for a grace period was published on 13 April 2015[51].

NIRO Closure Order 2015

7.12 The RO Closure (Northern Ireland) Order 2015 came into force on 30 September 2015 and sets out that the NIRO will close to all new non-wind capacity on 31 March 2017. The following grace periods have been made available:

- Grid and/or radar delay grace period: for stations that experience grid connection delays that are outside of the developer's control.
- Preliminary accreditation grace period: for stations using Advanced Conversion Technology (ACT) which have been granted preliminary accreditation by 31 March 2015.
- Enabling financial decisions grace period: for stations using ACT and in relation to which a Notice of Intent was submitted to us by 5 January 2016.

7.13 We published guidance on 19 October 2015 in relation to the enabling financial decisions grace period.

7.14 We published draft guidance for NI generators on the closure of the NIRO and the grace periods available in December 2016, with a view to finalising it in spring 2017.

RO Closure (Amendment) Order 2016

7.15 The Renewables Obligation Closure Etc. (Amendment) Order 2016 closed the RO and ROS schemes early for new small-scale (less than or equal to 5MW) solar PV generating capacity, from 1 April 2016. The following grace periods were made available, allowing accreditation for certain small-scale PV stations up to 31 March 2017:

- Preliminary accreditation grace period: for new stations that have been granted preliminary accreditation on or before 22 July 2015.
- Significant commitment grace period: for stations that have made significant financial commitments in relation to a project on or before 22 July 2015.
- Grid delay grace period: for stations that experience grid connection delays that are outside of the developer's control.

7.16 We published guidance[52] on this early closure and the available grace periods.

Closure of RO to onshore wind

7.17 The Energy Act 2016 amended the Electricity Act 1989 to close the RO schemes for new onshore wind generating capacity in England, Scotland and Wales from 13 May 2016. The amendments introduced five grace periods, each consisting of a different combination of three

[51] https://www.ofgem.gov.uk/publications-and-updates/renewables-obligation-ro-guidance-closure-scheme-large-scale-solar-pv
[52] https://www.ofgem.gov.uk/publications-and-updates/renewables-obligation-closure-scheme-small-scale-solar-pv

grace period conditions being met. The grace periods enable onshore wind generating capacity to be accredited on or after 13 May 2016, and the conditions are:

- Approved development condition: for stations where a grid connection agreement, land rights and the planning permission were in place on or before 18 June 2015[53].
- Grid or radar delay condition: for generating stations that have been subject to grid connection or radar works delays that were not because of a breach by a developer.
- Investment freezing condition: for generating stations where required finance could not be obtained as a result of legislative uncertainty before the Energy Act 2016 became law.

7.18 We published guidance[54] on this early closure and the associated grace periods available.

Closure of NIRO to onshore wind

7.19 The Renewables Obligation Closure Order (Northern Ireland) 2016 closed the NIRO scheme for new large (greater than 5MW) onshore wind generating capacity from 1 April 2016. This Order also introduced five grace periods. Subject to one or more of three specified conditions being met, the grace periods enable large onshore wind generating capacity to be accredited after 1 April 2016.

7.20 Subsequently, the Renewables Obligation Closure (No. 2) Order (Northern Ireland) 2016 closed the NIRO scheme for new small (less than or equal to 5MW) onshore wind generating capacity from 1 July 2016. This Order also introduced five grace periods enabling stations to be accredited after this date, each consisting of a different combination of three grace period conditions being met.

The grace period conditions in both cases were:

- Approved development condition: for stations where a grid connection agreement, land rights and the planning permission were in place on or before the relevant eligibility date[55]
- Grid or radar delay condition: for generating stations that have been subject to grid connection or radar works delays that were not because of a breach by a developer
- Investment freezing condition: for generating stations where required finance could not be obtained as a result of legislative uncertainty before the relevant order was made.

Other RO amendments in 2016

Proposed solar PV banding change

7.21 The government has consulted on proposals for reduced support for small scale solar PV in England and Wales with an accreditation date from 23 July 2015 onwards, unless generating stations qualify for certain exemptions. Please refer to the Consultation on the level of banded support for new solar PV under the Renewables Obligation[56].

[53] http://www.parliament.uk/documents/commons-committees/energy-and-climate-change/Leadsom-to-chair-231115.pdf
[54] https://www.ofgem.gov.uk/publications-and-updates/renewables-obligation-closure-scheme-onshore-wind-england-scotland-and-wales
[55] The 'relevant eligibility date' is 30 September 2015 for non-cluster connecting generating stations and 30 October 2015 for cluster connecting stations.
[56] https://www.gov.uk/government/consultations/consultation-on-the-level-of-banded-support-for-new-solar-pv-under-the-renewables-obligation for more information

Northern Ireland sustainability criteria amendment

7.22 DETINI intended to bring in legislative provisions to introduce further enhancements to the sustainability criteria for biomass stations on 1 December 2015, in line with DECC and the Scottish Government, however they experienced delays. The Renewables Obligation (Amendment) Order (Northern Ireland) 2016 which introduces the changes, came into force on 1 March 2016.

RO exemption for Energy Intensive Industries

7.23 In early 2016 the government announced that it would provide an exemption for eligible Energy Intensive Industries (EIIs) from the indirect costs of the Renewables Obligation (RO) and Feed-in Tariffs (FIT) schemes, to ensure that they have long-term certainty and remain competitive.

7.24 In April 2016 the government published a consultation[57] setting out how this exemption might be implemented in practice. This considered territorial scope, ie the parts of the UK the exemption should cover and which EIIs should be exempt, and looked in detail at the changes that would need to be made to the operation and administration of the RO and the FIT schemes. A final decision on the exemption is yet to be made.

[57] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/513029/EII_condoc_20160401.pdf

8. Implementation and improvement update

Chapter summary

In 2015-16, we made changes to the Renewables and CHP Register to reflect changes to legislation and to our internal procedures. Guidance documents were published or updated and our Operational Excellence programme continued to make improvements for our internal processes and external stakeholders.

Renewables and CHP Register

8.1. During 2015-16, we made significant changes to the Register to reflect legislative changes that were introduced. This included the closure of the RO scheme to onshore wind generating stations and PV generating stations under 5MW. We sought to improve the functionality of the Register for stakeholders by making it compatible with a wider range of internet browsers. We also streamlined the question flow for all accreditation applications where possible, by improving the clarity of questions and removing redundant questions.

Guidance documents

8.2 We regularly publish guidance on aspects of the RO to inform scheme participants of changes in legislation or revised processes.

8.3 Since the last annual report we have published the following new guidance documents:

Guidance:

- Renewables Obligation: Sustainability Criteria (March 2016)[58]
- Renewables Obligation: Sustainability Reporting (March 2016)[59]
- Renewables Obligation: Closure of the scheme to small-scale solar PV (April 2016)[60]
- Submitting data for the Northern Ireland Renewables Obligation: a step-by-step guide (April 2016)[61]
- Renewables Obligation: Closure of the scheme to onshore wind in England, Scotland and Wales (May 2016, updated October 2016)[62]
- Renewables Obligation: Fuel Classification Flow Diagram (June 2016)[63]
- Northern Ireland Renewables Obligation: Closure of the scheme to large onshore wind (greater than 5MW) (June 2016, updated October 2016)[64]
- How to amend an application on the Renewables and CHP Register (October 2016)[65]
- Northern Ireland Renewables Obligation: Closure of the scheme to onshore wind less than or equal to 5MW (October 2016)[66]
- Northern Ireland Renewables Obligation: closure of the scheme (December 2016)[67]

[58] https://www.ofgem.gov.uk/publications-and-updates/renewables-obligation-sustainability-criteria
[59] https://www.ofgem.gov.uk/publications-and-updates/renewables-obligation-sustainability-reporting
[60] https://www.ofgem.gov.uk/publications-and-updates/renewables-obligation-closure-scheme-small-scale-solar-pv
[61] https://www.ofgem.gov.uk/publications-and-updates/submitting-data-northern-ireland-renewables-obligation-step-step-guide
[62] https://www.ofgem.gov.uk/publications-and-updates/renewables-obligation-closure-scheme-onshore-wind-england-scotland-and-wales
[63] https://www.ofgem.gov.uk/publications-and-updates/renewables-obligation-fuel-classification-flow-diagram
[64] https://www.ofgem.gov.uk/publications-and-updates/northern-ireland-renewables-obligation-closure-scheme-large-onshore-wind-5mw
[65] https://www.ofgem.gov.uk/publications-and-updates/how-amend-application-renewables-and-chp-register
[66] https://www.ofgem.gov.uk/publications-and-updates/northern-ireland-renewables-obligation-closure-scheme-onshore-wind-5mw
[67] https://www.ofgem.gov.uk/publications-and-updates/northern-ireland-renewables-obligation-closure-scheme

- Renewables Obligation: closure of the scheme in England, Scotland and Wales (December 2016)[68]

Frequently asked questions:

- Frequently Asked Questions - closure of the Renewables Obligation (RO) to small-scale solar PV (April 2016)[69]
- Renewables Obligation (RO) FAQ (April 2016)[70]
- Renewables Obligation (RO) Output Data FAQ (April 2016)[71]
- Frequently Asked Questions - closure of the Renewables Obligation (RO) to onshore wind in England, Scotland and Wales (May 2016)[72]
- Frequently Asked Questions - closure of the Northern Ireland Renewables Obligation (NIRO) to onshore wind greater than 5MW (June 2016, updated October 2016)[73]
- Frequently Asked Questions – closure of the Northern Ireland Renewables Obligation (NIRO) to onshore wind less than or equal to 5MW (October 2016)[74]

Information notes:

- Factsheet – Closure of the Northern Ireland Renewables Obligation (NIRO) to all non-wind renewable technologies (August 2016, now superseded by guidance)[75]
- Renewables Obligation: Solar PV and Wind Grace Periods Summary (October 2016)[76]

8.4 In addition, since the last annual report we have published the following updates to guidance documents:

- Renewables Obligation: Fuel Measurement and Sampling Guidance (March 2016)[77]
- Guidance for Generators (January 2017)[78]

Operational Excellence

8.5 The output data validation work completed during 2015-16 allowed us to validate output data from large generators against Elexon data and the majority of distribution connected generators against meter reading data provided by Electralink. Building on this success we extended the scope of the project to include large-scale accredited generators in Northern Ireland, via the use of data collected by the Single Electricity Market Operator (SEMO).

8.6 We also entered into an agreement with Scottish Power who now provide us with generation data for their grid connected installations, including hydroelectric and onshore wind

[68] https://www.ofgem.gov.uk/publications-and-updates/renewables-obligation-closure-scheme-england-scotland-and-wales
[69] https://www.ofgem.gov.uk/publications-and-updates/frequently-asked-questions-closure-renewables-obligation-ro-small-scale-solar-pv
[70] https://www.ofgem.gov.uk/publications-and-updates/renewables-obligation-ro-faq
[71] https://www.ofgem.gov.uk/publications-and-updates/renewables-obligation-ro-output-data-faq
[72] https://www.ofgem.gov.uk/publications-and-updates/frequently-asked-questions-closure-renewables-obligation-ro-onshore-wind-england-scotland-and-wales
[73] https://www.ofgem.gov.uk/publications-and-updates/frequently-asked-questions-closure-northern-ireland-renewables-obligation-niro-onshore-wind-5mw
[74] https://www.ofgem.gov.uk/publications-and-updates/frequently-asked-questions-closure-northern-ireland-renewables-obligation-niro-onshore-wind-5mw-0
[75] https://www.ofgem.gov.uk/publications-and-updates/factsheet-closure-northern-ireland-renewables-obligation-niro-all-non-wind-renewable-technologies
[76] https://www.ofgem.gov.uk/publications-and-updates/renewables-obligation-solar-pv-and-wind-grace-periods-summary
[77] https://www.ofgem.gov.uk/publications-and-updates/renewables-obligation-fuel-measurement-and-sampling-guidance-0
[78] https://www.ofgem.gov.uk/publications-and-updates/renewables-obligation-guidance-generators-2

sites, allowing these to be validated. The team conducted a thorough historical analysis of validation and output data for all sites concerned, and initiated a regular monthly validation regime, ensuring that monthly output data submissions are checked against the relevant validation data prior to ROCs being issued. Further information, including protected sums can be found in Chapter 3.

8.7 We began work on designing and scoping bespoke customer satisfaction measurement tools, covering our interactions with scheme participants, with a view to making sure we're providing excellent customer service. The results will be used to identify areas for improvement, areas where we perform well, and areas where more major changes in approach may be required.

8.8 We designed and introduced a new process for chasing 'dormant' applications, those where applicants have not responded to queries for a certain period of time. The new process automated a large proportion of this process, and resulted in a significant time saving for the operations team.

Appendix 1: Renewables Obligation legislation

England and Wales

The Renewables Obligation Order 2009
http://www.legislation.gov.uk/uksi/2009/785/contents/made

The Renewables Obligation (Amendment) Order 2010
http://www.legislation.gov.uk/uksi/2010/1107/contents/made

The Renewables Obligation (Amendment) Order 2011
http://www.legislation.gov.uk/uksi/2011/984/contents/made

The Renewables Obligation (Amendment) Order 2013
http://www.legislation.gov.uk/uksi/2013/768/contents/made

The Renewables Obligation (Amendment) Order 2014
http://www.legislation.gov.uk/uksi/2014/893/contents/made

The Renewables Obligation Order 2015
http://www.legislation.gov.uk/uksi/2015/1947/contents/made

Scotland

The Renewables Obligation (Scotland) Order 2009
http://www.legislation.gov.uk/ssi/2009/140/contents/made

The Renewables Obligation (Scotland) Amendment Order 2010
http://www.legislation.gov.uk/ssi/2010/147/contents/made

The Renewables Obligation (Scotland) Amendment Order 2011
http://www.legislation.gov.uk/ssi/2011/225/contents/made

The Renewables Obligation (Scotland) Amendment Order 2013
http://www.legislation.gov.uk/ssi/2013/116/contents/made

The Renewables Obligation (Scotland) Amendment Order 2014
http://www.legislation.gov.uk/ssi/2014/94/contents/made

The Renewables Obligation (Scotland) Amendment Order 2015
http://www.legislation.gov.uk/ssi/2015/384/contents/made

Applicable to England, Wales and Scotland

The Renewables Obligation Closure Order 2014
http://www.legislation.gov.uk/uksi/2014/2388/contents/made

The Renewables Obligation Closure (Amendment) Order 2015
http://www.legislation.gov.uk/uksi/2015/920/contents/made

The Renewables Obligation Closure Etc. (Amendment) Order 2016
http://www.legislation.gov.uk/ukdsi/2016/9780111142943/pdfs/ukdsi_9780111142943_en.pdf

Northern Ireland

The Renewables Obligation Order (Northern Ireland) 2009
http://www.legislation.gov.uk/nisr/2009/154/contents/made

The Renewables Obligation (Amendment) Order (Northern Ireland) 2010
http://www.legislation.gov.uk/nisr/2010/134/contents/made

The Renewables Obligation (Amendment) Order (Northern Ireland) 2011
http://www.legislation.gov.uk/nisr/2011/169/contents/made

The Renewables Obligation (Amendment) Order (Northern Ireland) 2013
http://www.legislation.gov.uk/nisr/2013/116/contents/made

The Renewables Obligation (Amendment No. 2) Order (Northern Ireland) 2013
http://www.legislation.gov.uk/nisr/2013/174/contents/made

The Renewables Obligation (Amendment) Order (Northern Ireland) 2014
http://www.legislation.gov.uk/nisr/2014/146/contents/made

The Renewables Obligation Closure Order (Northern Ireland) 2015
http://www.legislation.gov.uk/nisr/2015/346/contents/made

The Renewables Obligation (Amendment) Order (Northern Ireland) 2015
http://www.legislation.gov.uk/nisr/2015/287/contents/made

The Renewables Obligation Closure (Northern Ireland) 2016 (DRAFT)
http://www.legislation.gov.uk/nidsr/2016/9780338004642/pdfs/nidsr_9780338004642_en.pdf

Appendix 2: Accredited stations

Table A1: Number and capacity of stations accredited in 2015-16

Generation Technology	England		Wales		Scotland		Northern Ireland		Total	
	Quantity	Capacity (MW)	Quantity	Capacity (MW)	Quantity	Capacity (MW)	Quantity	Capacity (MW)	Quantity	Capacity (MW)
Fuelled	15	95	4	2	3	6	16	21	38	124
Hydro	0	0	0	0	0	0	2	0	2	0
Offshore Wind	1	50	0	0	0	0	0	0	1	50
Onshore Wind	19	263	2	25	17	351	108	34	146	673
Sewage Gas	2	2	0	0	1	0	0	0	3	2
Solar	182	1,026	16	102	7	20	3	5	208	1,153
Tidal stream	0	0	1	0	0	0	0	0	1	0
Sub-Total DNC >50kW	**219**	**1,435**	**23**	**129**	**28**	**377**	**129**	**60**	**399**	**2,001.8**
Fuelled	12	0.39	3	0.11	2	0.07	0	0.00	17	0.57
Hydro	0	0.00	0	0.00	0	0.00	1	0.02	1	0.02
Onshore Wind	0	0.00	0	0.00	0	0.00	8	0.08	8	0.08
Solar	N/A*	N/A*	N/A*	N/A*	N/A*	N/A*	6,299	30.93	6,299	30.93
Sub-Total DNC ≤50kW	12	0.39	3	0.11	2	0.07	6,308	31.03	6,325	31.60
Total	**219**	**1,435**	**23**	**129**	**28**	**377**	**129**	**60**	**6,724**	**2,033**

*These are ineligible under the RO scheme as the FITs scheme is available in Great Britain.

Table A2: Number and capacity of stations accredited from the start of the scheme until the end of 2015-16

Generation Technology	England		Wales		Scotland		Northern Ireland		Total	
	Quantity	Capacity (MW)	Quantity	Capacity (MW)	Quantity	Capacity (MW)	Quantity	Capacity (MW)	Quantity	Capacity (MW)
Fuelled	184	4,702	12	44	24	203	47	48	267	4,998
Hydro	50	22	31	77	147	616	27	4	255	720
Landfill gas	378	767	18	28	39	88	15	19	450	902
Offshore wind	24	4,110	3	720	4	190	0	0	31	5,020
Onshore wind	207	2,166	46	552	198	5,203	405	695	856	8,616
Sewage gas	142	168	16	12	6	7	0	0	164	187
Solar	639	4,622	50	388	9	21	5	9	703	5,039
Tidal stream	0	0	1	0	3	2	1	1	5	4
Wave power	0	0	0	0	4	2	0	0	4	2
Sub-Total DNC >50kW	**1,624**	**16,557**	**177**	**1,822**	**434**	**6,332**	**500**	**776**	**2,735**	**25,487**
Fuelled	26	0.66	3	0.11	2	0.07	1	0.03	32	0.88
Hydro	0	0.00	0	0.00	0	0.00	31	0.52	31	0.52
Onshore wind	3	0.02	0	0.00	1	0.00	437	3.76	441	3.77
Sewage gas	1	0.03	0	0.00	0	0.00	0	0.00	1	0.03
Solar	3	0.01	0	0.00	0	0.00	17,546	93.34	17,549	93.34
Sub-Total DNC ≤50kW	**33**	**0.72**	**3**	**0.11**	**3**	**0.07**	**18,015**	**97.65**	**18,054**	**98.54**
Total	**1,657**	**16,558**	**180**	**1,822**	**437**	**6,332**	**18,515**	**874**	**20,789**	**25,585**

Table A3: Stations with NFFO contracts at the end of 2015-16

Generation Technology	England and Wales (NFFO)		Scotland (SRO)		Northern Ireland (NFFO)		Total	
	Quantity	Capacity (MW)	Quantity	Capacity (MW)	Quantity	Capacity (MW)	Quantity	Capacity (MW)
Hydro	5	0.84	1	0.68	1	0.08	7	1.60
Landfill gas	25	67.57	4	8.73	0	0.00	29	76.30
Offshore wind	1	1.80	0	0.00	0	0.00	1	1.80
Onshore wind	13	88.48	5	50.08	4	20.00	22	158.56
Wave power	0	0.00	1	0.15	0	0.00	1	0.15
Total	**44**	**158.69**	**11**	**59.64**	**5**	**20.08**	**60**	**238.41**

Appendix 3: ROCs issued

Table A4: ROCs issued in 2015-16 by country and generation technology

Technology	ROCs issued				
	England	Wales	Scotland	Northern Ireland	Total
Fuelled	18,585,835	353,949	2,023,605	556,437	21,519,826
Hydro	59,102	188,029	2,518,886	29,397	2,795,414
Landfill gas	3,724,470	127,332	414,225	87,111	4,353,138
Offshore wind	28,964,599	3,908,817	890,420	0	33,763,836
Onshore wind	5,178,918	1,420,792	11,552,031	2,085,852	20,237,593
Sewage gas	600,814	39,598	23,241	0	663,653
Solar	6,380,583	466,840	1,817	248,390	7,097,630
Tidal power	0	0	0	0	0
Wave power	0	0	0	0	0
Total	**63,494,321**	**6,505,357**	**17,424,225**	**3,007,187**	**90,431,090**

Appendix 4: Compliance by licensed suppliers

Table A5: Supplier groups and their licences

Company (Supplier Group)	Licence
British Gas Trading Limited	British Gas Trading Limited
	Electricity Direct (UK) Limited
Co-Operative Energy Limited	Co-Operative Energy Limited
	Energy COOP Limited
Culzean Power Ltd	Holborn Energy Limited
	Barbican Power Limited
	Paddington Power Limited
Dyball Associates	Vavu Power Limited
	Powerq Limited
	Switch Business Gas and Power Ltd
E.ON UK Plc	E.ON Energy Solutions Limited
	E.ON UK Plc
Economy Energy	Economy Energy Trading Limited
	Economy Energy Supply Limited
EDF Energy plc	British Energy Direct Limited
	EDF Energy Customers Plc
	SEEBOARD Energy Limited
ENGIE Power Limited	ENGIE Power Limited
	IPM Energy Retail Limited
Extra Energy Supply Limited	Addito Supply Limited
	Extra Energy Supply Limited
Gilmond Consulting	I Supply Electricity 2 Limited
	I Supply Electricity Limited
	Simply Electricity Limited
	Supply Energy Limited
	I Supply Energy Limited
Opus Energy Limited	Opus Energy Renewables Limited
	Donnington Energy Limited
	Farmoor Energy Limited
	Opus Energy (Corporate) Limited
	Opus Energy Limited
OVO Electricity Limited	OVO Electricity Limited
	ONI Electricity Ltd

Table A5 (continued): Supplier groups and their licences

Company (Supplier Group)	Licence
RWE Npower Plc	Electricity Plus Supply Limited
	Npower Direct Limited
	Npower Limited
	Npower Northern Limited
	Npower Northern Supply Limited
	Npower Yorkshire Limited
	Npower Yorkshire Supply Limited
SSE Energy Supply Limited	South Wales Electricity Limited
	SSE Airtricity Energy Supply Limited
	SSE Energy Supply Limited
Utilisoft Ltd	Silver Energy Supply Limited
	Tailwind Energy Supply Limited
	Mistral Energy Supply Limited
	Tornado Energy Supply Limited
	Cornflower Energy Supply Limited
	Daisy Energy Supply Limited
	Foxglove Energy Supply Limited
	Snowdrop Energy Supply Limited
	Lavender Energy Supply Limited
	Mint Energy Supply Limited
	Rose Energy Supply Limited
	Tulip Energy Supply Limited
	Sunflower Energy Supply Limited
	Marigold Energy Supply Limited
	Bluebell Energy Supply Limited
	Daffodil Energy Supply Limited
Utiliteam	Edgware Energy Limited
	Farringdon Energy Limited
	Covent Energy Limited
Verastar Limited	Sinq Power Limited
	Verastar Limited

Table A6: Summary of compliance by supplier group in 2015-16 (all schemes)

Supplier Group	Total Obligation (ROCs)	Total ROCs presented	Total Payments made by supplier
Avro Energy Limited	395	0	£17,510.35
Axis Telecom Limited	6,666	6,666	£0.00
AXPO UK Limited	188,364	188,364	£0.00
BES Commercial Electricity Limited	135,757	135,757	£0.00
BP Energy Europe Limited	1,804	0	£79,971.32
Bristol Energy Technology & Services (Supply) Limited	144	144	£0.00
British Gas Trading Limited	10,651,501	10,651,501	£0.00
Bulb Energy Ltd	302	62	£10,639.20
Co-Operative Energy Limited	276,847	276,847	£0.00
Corona Energy Retail 5 Limited	34,856	34,856	£0.00
Coulomb Energy Supply Limited	17,280	17,280	£0.00
Dong Energy Power Sales UK Limited	237,370	237,370	£0.00
Dual Energy Direct Limited	129,333	129,333	£0.00
E (Gas and Electricity) Limited	47,587	47,587	£0.00
E.ON UK Plc	11,481,387	11,481,387	£0.00
Economy Energy	66,119	66,119	£0.00
Ecotricity Group Limited	152,041	152,041	£0.00
EDF Energy plc	13,801,690	13,801,690	£0.00
Effortless Energy Ltd	227	227	£0.00
Eneco energy Trade BV	81,985	81,985	£0.00
EPG Energy Limited	9,973	0	£443,884.22
ENGIE Power Limited	2,597,264	2,597,264	£0.00
Extra Energy Supply Limited	527,200	527,200	£0.00
F & S Energy Limited	12,257	12,257	£0.00
First Utility Limited	1,004,852	1,004,852	£0.00
Flow Energy Limited	66,721	55,000	£522,132.75
Future Energy Utilities Ltd	115	0	£5,097.95
Gazprom Marketing & Trading Retail Limited	409,010	409,010	£0.00
GB Energy Supply Limited	65,475	65,475	£0.00
Gilmond Consulting	85,282	85,282	£0.00
Gnergy Limited	4,377	0	£194,032.41
Good Energy Limited	89,834	89,834	£0.00
Green Energy (UK) plc	27,706	27,706	£0.00
Haven Power Limited	4,097,844	4,097,844	£0.00
Hudson Energy Supply UK Limited	512,986	512,986	£0.00
Limejump Energy Ltd	3	3	£0.00
LoCO2 Energy Limited	25,060	25,060	£0.00
MA Energy Limited	23,812	15,312	£379,614.95

Table A6 (continued): Summary of compliance by supplier group in 2015-16 (all schemes)

Supplier Group	Total Obligation (ROCs)	Total ROCs presented	Total Payments
Marble Power Limited	3,754	0	£166,431.62
MVV Environment Services Limited	12,293	12,293	£0.00
NEAS Energy Limited	10	10	£0.00
Octopus Energy Limited	33	33	£0.00
Opus Energy Limited	1,143,031	1,143,031	£0.00
Our Power Energy Supply Limited	2	0	£88.66
OVO Electricity Limited	675,074	675,074	£0.00
Places for People Energy Supplies Limited	988	0	£43,798.04
Power4All Limited	349,566	349,566	£0.00
Robin Hood Energy Limited	7,275	7,275	£0.00
RWE Npower Plc	12,997,235	12,997,235	£0.00
Scottish Power Energy Retail Limited	5,913,668	5,913,668	£0.00
Sembcorp Utilities (UK) Limited	46,174	46,174	£0.00
SmartestEnergy Limited	2,006,978	2,006,978	£0.00
SO Energy Trading Limited	1,485	1,485	£0.00
Spark Energy Supply Limited	126,631	126,631	£0.00
SSE Energy Supply Limited	11,502,557	11,502,557	£0.00
Statkraft Markets GmbH	168	0	£7,447.44
Symbio Energy Limited	189	0	£8,378.37
Tempus Energy Supply Limited	2,529	2,529	£0.00
Total Gas & Power Limited	1,792,627	1,792,627	£0.00
Tradelink Solutions Limited	134	134	£0.00
Utilita Energy Limited	277,254	277,254	£0.00
Verastar Limited	7	0	£310.31
Yu Energy	8,930	0	£399,051.50
Budget Energy Ltd	26,313	25,863	£19,948.50
Click Energy	783	0	£34,710.39
ESB Independent Energy (NI) Ltd	107,217	107,217	£0.00
Firmus Energy Supply Ltd	769	0	£34,089.77
LCC Power Limited	149,129	149,110	£842.27
Open Electric Limited	45	0	£1,994.85
Power NI Energy Ltd	326,477	326,477	£0.00
Vayu Ltd	1,509	0	£66,893.97
Viridian Energy Supply Ltd	87,205	87,205	£0.00
Totals	**84,439,465**	**84,384,727**	**£2,436,868.84**

Table A7: Compliance by licence with the RO (England and Wales)

Licence	RO Obligation (ROCs)	Total ROCs presented	Bioliquid ROCs presented	Banked ROCs presented	Buy-out Payment Made by Supplier	Late Payment Made by Supplier
Avro Energy Limited	387	0	0	0	£17,155.71	£0.00
Axis Telecom Limited	6,448	6,448	0	3	£0.00	£0.00
AXPO UK Limited	175,321	175,321	0	28,278	£0.00	£0.00
BES Commercial Electricity Limited	122,660	122,660	542	9,974	£0.00	£0.00
BP Energy Europe Limited	1,804	0	0	0	£79,971.32	£0.00
Bristol Energy Technology & Services (Supply) Limited	142	142	0	0	£0.00	£0.00
British Gas Trading Limited	9,799,328	9,799,328	27,111	159,059	£0.00	£0.00
Bulb Energy Ltd	293	53	0	0	£10,639.20	£0.00
Co-Operative Energy Limited	265,593	265,593	0	6,938	£0.00	£0.00
Corona Energy Retail 5 Limited	31,411	31,411	0	0	£0.00	£0.00
Coulomb Energy Supply Limited	17,280	17,280	0	3,936	£0.00	£0.00
Dong Energy Power Sales UK Limited	211,219	211,219	0	0	£0.00	£0.00
Dual Energy Direct Limited	115,817	115,817	0	27,827	£0.00	£0.00
E (Gas and Electricity) Limited	46,211	46,211	0	0	£0.00	£0.00
E.ON UK Plc	10,909,451	10,909,451	0	301	£0.00	£0.00
Economy Energy	63,728	63,728	0	0	£0.00	£0.00
Ecotricity Group Limited	144,537	144,537	71	7,968	£0.00	£0.00
EDF Energy plc	12,405,492	12,405,492	520	64,491	£0.00	£0.00
Effortless Energy Ltd	203	203	0	0	£0.00	£0.00
Eneco energy Trade BV	80,273	80,273	0	17,806	£0.00	£0.00
EPG Energy Limited	9,877	0	0	0	£0.00	£439,610.85
ENGIE Power Limited	2,441,848	2,441,848	0	115,641	£0.00	£0.00
Extra Energy Supply Limited	476,991	476,991	131	0	£0.00	£0.00
F & S Energy Limited	10,658	10,658	70	112	£0.00	£0.00

Table A7 (continued): Compliance by licence with the RO (England and Wales)

Licence	RO Obligation (ROCs)	Total ROCs presented	Bioliquid ROCs presented	Banked ROCs presented	Buy-out Payment Made by Supplier	Late Payment Made by Supplier
First Utility Limited	944,618	944,618	0	0	£0.00	£0.00
Flow Energy Limited	62,709	55,000	0	0	£0.00	£343,411.07
Future Energy Utilities Ltd	115	0	0	0	£5,097.95	£0.00
Gazprom Marketing & Trading Retail Limited	372,221	372,221	0	9,893	£0.00	£0.00
GB Energy Supply Limited	57,680	57,680	0	0	£0.00	£0.00
Gilmond Consulting	82,239	82,239	0	5,000	£0.00	£0.00
Gnergy Limited	4,228	0	0	0	£187,427.24	£0.00
Good Energy Limited	85,313	85,313	0	6,217	£0.00	£0.00
Green Energy (UK) plc	26,770	26,770	0	6,692	£0.00	£0.00
Haven Power Limited	3,800,128	3,800,128	0	380,001	£0.00	£0.00
Hudson Energy Supply UK Limited	466,924	466,924	0	0	£0.00	£0.00
Limejump Energy Ltd	3	3	0	0	£0.00	£0.00
LoCO2 Energy Limited	23,521	23,521	0	3,981	£0.00	£0.00
MA Energy Limited	21,495	12,995	0	127	£0.00	£379,614.95
Marble Power Limited	3,754	0	0	0	£50,000.00	£116,431.62
MVV Environment Services Limited	12,293	12,293	0	0	£0.00	£0.00
NEAS Energy Limited	10	10	0	0	£0.00	£0.00
Octopus Energy Limited	33	33	0	0	£0.00	£0.00
Opus Energy Limited	1,049,958	1,049,958	3,586	74,257	£0.00	£0.00
Our Power Energy Supply Limited	0	0	0	0	£0.00	£0.00
OVO Electricity Limited	638,238	638,238	375	10,173	£0.00	£0.00
Places for People Energy Supplies Limited	949	0	0	0	£42,069.17	£0.00
Power4All Limited	307,812	307,812	0	22,626	£0.00	£0.00
Robin Hood Energy Limited	7,077	7,077	0	0	£0.00	£0.00

Table A7 (continued): Compliance by licence with the RO (England and Wales)

Licence	RO Obligation (ROCs)	Total ROCs presented	Bioliquid ROCs presented	Banked ROCs presented	Buy-out Payment Made by Supplier	Late Payment Made by Supplier
RWE Npower Plc	12,248,877	12,248,877	12,097	283,862	£0.00	£0.00
Scottish Power Energy Retail Limited	4,555,883	4,555,883	0	779,588	£0.00	£0.00
Sembcorp Utilities (UK) Limited	46,174	46,174	0	0	£0.00	£0.00
SmartestEnergy Limited	1,875,033	1,875,033	1,643	243,501	£0.00	£0.00
SO Energy Trading Limited	1,419	1,419	0	0	£0.00	£0.00
Spark Energy Supply Limited	118,092	118,092	0	0	£0.00	£0.00
SSE Energy Supply Limited	9,688,512	9,688,512	3,755	63,692	£0.00	£0.00
Statkraft Markets GmbH	2	0	0	0	£88.66	£0.00
Symbio Energy Limited	189	0	0	0	£8,378.37	£0.00
Tempus Energy Supply Limited	2,436	2,436	0	51	£0.00	£0.00
Total Gas & Power Limited	1,665,566	1,665,566	2,694	283,175	£0.00	£0.00
Tradelink Solutions Limited	134	134	0	0	£0.00	£0.00
Utilita Energy Limited	261,458	261,458	0	0	£0.00	£0.00
Verastar Limited	4	0	0	0	£177.32	£0.00
Yu Energy	8,297	0	0	0	£0.00	£370,768.41
Totals	**75,777,136**	**75,731,081**	**52,595**	**2,615,170**	**£401,004.94**	**£1,649,836.90**

Table A8: Compliance by licence with the ROS (Scotland)

Licence	ROS Obligation (ROCs)	Total ROCs presented	Bioliquid ROCs presented	Banked ROCs presented	Buy-out Payment Made by Supplier	Late Payment Made by Supplier
Avro Energy Limited	8	0	0	0	£354.64	£0.00
Axis Telecom Limited	218	218	0	0	£0.00	£0.00
AXPO UK Limited	13,043	13,043	0	0	£0.00	£0.00
BES Commercial Electricity Limited	13,097	13,097	0	0	£0.00	£0.00
Bristol Energy Technology & Services (Supply) Limited	2	2	0	0	£0.00	£0.00
British Gas Trading Limited	852,173	852,173	1,888	0	£0.00	£0.00
Bulb Energy Ltd	9	9	0	0	£0.00	£0.00
Co-Operative Energy Limited	11,254	11,254	0	0	£0.00	£0.00
Corona Energy Retail 5 Limited	3,445	3,445	0	0	£0.00	£0.00
Dong Energy Power Sales UK Limited	26,151	26,151	0	2,613	£0.00	£0.00
Dual Energy Direct Limited	13,516	13,516	0	0	£0.00	£0.00
E (Gas and Electricity) Limited	1,376	1,376	0	0	£0.00	£0.00
E.ON UK Plc	571,936	571,936	0	0	£0.00	£0.00
Economy Energy	2,391	2,391	0	0	£0.00	£0.00
Ecotricity Group Limited	7,504	7,504	0	1,609	£0.00	£0.00
EDF Energy plc	1,396,198	1,396,198	212	458	£0.00	£0.00
Effortless Energy Ltd	24	24	0	0	£0.00	£0.00
Eneco energy Trade BV	1,712	1,712	0	0	£0.00	£0.00
EPG Energy Limited	96	0	0	0	£0.00	£4,273.37
ENGIE Power Limited	155,416	155,416	0	5,078	£0.00	£0.00
Extra Energy Supply Limited	50,209	50,209	105	787	£0.00	£0.00
F & S Energy Limited	1,599	1,599	0	0	£0.00	£0.00
First Utility Limited	60,234	60,234	0	0	£0.00	£0.00

Table A8 (continued): Compliance by licence with the ROS (Scotland)

Licence	ROS Obligation (ROCs)	Total ROCs presented	Bioliquid ROCs presented	Banked ROCs presented	Buy-out Payment Made by Supplier	Late Payment Made by Supplier
Flow Energy Limited	4,012	0	0	0	£0.00	£178,721.68
Gazprom Marketing & Trading Retail Limited	36,789	36,789	0	0	£0.00	£0.00
GB Energy Supply Limited	7,795	7,795	0	0	£0.00	£0.00
Gilmond Consulting	3,043	3,043	0	0	£0.00	£0.00
Gnergy Limited	149	0	0	0	£6,605.17	£0.00
Good Energy Limited	4,521	4,521	0	0	£0.00	£0.00
Green Energy (UK) plc	936	936	0	234	£0.00	£0.00
Haven Power Limited	297,716	297,716	0	0	£0.00	£0.00
Hudson Energy Supply UK Limited	46,062	46,062	0	0	£0.00	£0.00
LoCO2 Energy Limited	1,539	1,539	0	0	£0.00	£0.00
MA Energy Limited	2,317	2,317	0	0	£0.00	£0.00
Opus Energy Limited	93,073	93,073	0	65	£0.00	£0.00
Our Power Energy Supply Limited	2	0	0	0	£88.66	£0.00
OVO Electricity Limited	36,836	36,836	1,180	9,201	£0.00	£0.00
Places for People Energy Supplies Limited	39	0	0	0	£1,728.87	£0.00
Power4All Limited	41,754	41,754	0	0	£0.00	£0.00
Robin Hood Energy Limited	198	198	0	0	£0.00	£0.00
RWE Npower Plc	748,358	748,358	1,374	0	£0.00	£0.00
Scottish Power Energy Retail Limited	1,357,785	1,357,785	0	0	£0.00	£0.00
SmartestEnergy Limited	131,945	131,945	129	32,986	£0.00	£0.00
SO Energy Trading Limited	66	66	0	0	£0.00	£0.00
Spark Energy Supply Limited	8,539	8,539	0	0	£0.00	£0.00
SSE Energy Supply Limited	1,588,744	1,588,744	1,490	0	£0.00	£0.00

Table A8 (continued): Compliance by licence with the ROS (Scotland)

Licence	ROS Obligation (ROCs)	Total ROCs presented	Bioliquid ROCs presented	Banked ROCs presented	Buy-out Payment Made by Supplier	Late Payment Made by Supplier
Statkraft Markets GmbH	166	0	0	0	£7,358.78	£0.00
Tempus Energy Supply Limited	93	93	0	0	£0.00	£0.00
Total Gas & Power Limited	127,061	127,061	0	0	£0.00	£0.00
Utilita Energy Limited	15,796	15,796	0	0	£0.00	£0.00
Verastar Limited	3	0	0	0	£132.99	£0.00
Yu Energy	633	0	0	0	£0.00	£28,283.09
Totals	**7,737,581**	**7,732,473**	**6,378**	**53,031**	**£16,269.11**	**£211,278.14**

Table A9: Compliance by licence with the NIRO (Northern Ireland)

Licence	ROS Obligation (ROCs)	Total ROCs presented	Bioliquid ROCs presented	Banked ROCs presented	Buy-out Payment Made by Supplier	Late Payment Made by Supplier
SSE Energy Supply Limited	225,301	225,301	0	0	£0.00	£0.00
Budget Energy Ltd	26,313	25,863	0	100	£19,948.50	£0.00
Click Energy	783	0	0	0	£34,710.39	£0.00
ESB Independent Energy (NI) Ltd	107,217	107,217	0	0	£0.00	£0.00
Firmus Energy Supply Ltd	769	0	0	0	£34,089.77	£0.00
LCC Power Limited	149,129	149,110	0	33,327	£842.27	£0.00
Open Electric Limited	45	0	0	0	£1,994.85	£0.00
Power NI Energy Ltd	326,477	326,477	0	73,975	£0.00	£0.00
Vayu Ltd	1,509	0	0	0	£66,893.97	£0.00
Viridian Energy Supply Ltd	87,205	87,205	0	177	£0.00	£0.00
Totals	**924,748**	**921,173**	**0**	**107,579**	**£158,479.75**	**£0.00**

Table A10: Suppliers with an obligation who did not meet the 1 June 2016 deadline to submit estimated supply volumes

Supplier Group
E (Gas and Electricity) Limited
F & S Energy Limited

Note: All supplier groups with an obligation met the 1 July 2016 deadline for submitting final supply volumes

Appendix 5: Glossary of terms

A

ACT	Advanced Conversion Technology
AD	Anaerobic digestion
Authority	Gas and Electricity Markets Authority

B

BEIS	Department for Business, Energy and Industrial Strategy

C

CHPQA	Combined Heat and Power Quality Assurance
CfD	Contracts for Difference
CO_2e	Carbon Dioxide equivalent

D

DECC	Department for Energy and Climate Change
Defra	Department of Environment and Rural Affairs
DETINI	Department of Enterprise Trade and Investment Northern Ireland
DfE	Department for the Economy Northern Ireland
DNC	Declared Net Capacity

F

FIT	Feed-in-Tariffs
FMS	Fuel Measurement and Sampling

G

GB	Great Britain
GHG	Greenhouse Gas
GW	Gigawatt

I

ISAE	International Standard on Assurance Engagements

M

MW	Megawatt
MWh	Megawatt hour

N

NFFO	Non-Fossil Fuel Obligation
NFPA	Non-Fossil Fuel Purchasing Agency
NI	Northern Ireland
NI NFFO	Northern Ireland Non-Fossil Fuel Obligation
NIE	Northern Ireland Electricity Networks
NIRO	Northern Ireland Renewables Obligation
NIROC	Northern Ireland Renewables Obligation Certificate
NMO	National Measurements Office

O

Ofgem	Office of Gas and Electricity Markets

P

PES	Public Electricity Suppliers
PV	Photovoltaic

R

Register	Renewables and CHP Register
RO	Renewables Obligation
ROC	Renewables Obligation Certificate
ROO	Renewables Obligation Order
ROS	Renewables Obligation Scotland
RPI	Retail Price Index

S

SRO	Scottish Renewables Obligation
SROC	Scottish Renewables Obligation Certificates

T

TIC	Total Installed Capacity
TWh	Terawatt hour

U

UK	United Kingdom
UREGNI	Utility Regulator Northern Ireland