

Renewables Obligation Annual Report

2013-14

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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 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 & 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 legislation¹ for each obligation. These are known as the RO Orders (ROO).

The scheme obligation period runs from 1 April to 31 March. The obligation level for suppliers is announced before the start of each obligation period by the Department of Energy and Climate Change (DECC). 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 buy-out payment per ROC, or through a combination of both. 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. Its day-to-day functions are performed by its office (Ofgem). E-Serve is the division of Ofgem that delivers environmental and social schemes, including the RO, for the government.

There is a requirement in legislation for us to produce an annual report on the scheme by 1 April following the end of an obligation period. Some of the information in this report is a statutory requirement, but we also include other information that we think is relevant and interesting to scheme stakeholders and the general public.

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

Associated documents

We have published the annual reports for all previous obligation periods on the RO homepage on our website:

<http://www.ofgem.gov.uk/Sustainability/Environment/RenewablObl/Pages/RenewablObl.aspx>

Information for licensed UK electricity suppliers on how to comply with the RO:

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

Information for generators accredited (or who want to become accredited) under the RO:

<https://www.ofgem.gov.uk/environmental-programmes/renewables-obligation-ro/information-generators>

We also have data reports available to download from our Renewables and CHP Register:

<https://www.renewablesandchp.ofgem.gov.uk/>

Contents

Executive summary	6
1. Introduction	8
Purpose of this document and points to note.....	8
Scheme administration.....	9
2. Generators accredited under the RO	10
Stations accredited from the start of the scheme to the end of 2013-14.....	11
Generators accredited in 2013-14.....	17
NFFO generating stations	21
3. ROCs issued and renewable generation.....	23
Historical trends in ROCs issued and renewable generation.....	23
ROCs issued and renewable generation in 2013-14.....	26
Revoked and retired ROCs	34
Carbon emissions	34
4. Biomass sustainability.....	36
Data considerations	36
Annual profiling data.....	37
Monthly data.....	40
Review of annual audit reports	40
5. Compliance by licensed suppliers	42
Information required from suppliers.....	42
Validation and submission of supply volumes	43
Share of obligation across the schemes	44
ROCs presented and payments made by suppliers	46
Redistribution of the buy-out and late payment funds	49
Mutualisation	53
Bioliquid ROCs	54
6. Audits under the RO	55
Audits of generating stations	55
Audits of suppliers	58
7. Changes in legislation	60
RO Amendment 2014.....	60
RO Closure Order	62
Additional amendments in 2015	63

8. Implementation and improvement update 64
Appendix 1: Renewables Obligation legislation 66
Appendix 2: Accredited stations 68
Appendix 3: ROCs issued 71
Appendix 4: Compliance by licensed suppliers 72
Appendix 5: Glossary of terms..... 82

Executive summary

Renewables Obligation 2013-14

This report covers the 2013-14 obligation period (1 April 2013 to 31 March 2014). It includes the renewable generating stations we accredited, the electricity these stations generated, the Renewables Obligation Certificates (ROCs) we issued to them, the sustainability of biomass fuels, compliance with the scheme by licensed suppliers, audits we carried out during the year and upcoming changes to scheme legislation.

62.8 m ROCs issued; renewables form 16% of UK electricity supply

During 2013-14 we issued 62.8 million ROCs. For the first time in the history of the scheme, we issued more ROCs than the total supplier obligation (61.9 million ROCs). This was the result of some extremely windy months between October 2013 and March 2014. Consequently we issued a large number of ROCs to offshore and onshore wind stations during this period.

The electricity output from stations accredited under the scheme was 49.6 TWh in 2013-14. The total electricity supplied in the UK was 304.5 TWh; therefore renewable generation under the RO was equivalent to 16.3% of the UK supply market. This is a significant increase from 11.2% in 2012-13.

The windy conditions accentuated onshore and offshore wind's positions as the dominant technologies under the RO. Like last year, offshore wind received the most ROCs and onshore wind generated the most electricity. Fuelled stations² also continued to provide high output. Between them these three technologies produced 83% of the renewable electricity under the RO and received 86% of the ROCs. Solar PV grew significantly from previous obligation periods and it is now the fourth-largest technology in the RO by accredited capacity.

An equivalent of 24.6 million tonnes of carbon dioxide (CO_{2e}) emissions was avoided from renewable generation under the scheme. This is a 42.7% increase from 17.3 million tonnes last year, in line with the growth in the number of ROCs we issued and the amount of renewable generation.

Compliance by licensed electricity suppliers

All obligated suppliers in 2013-14 complied with their obligations. The number of ROCs we issued during the year meant that suppliers were able to present a large number for compliance. They presented 60.8 million ROCs, which was 98.2% of the total obligation – the highest proportion since the RO began. Conversely, the amount of buy-out and late payments suppliers made was the smallest ever. We redistributed £42.4 million to suppliers. Each ROC was worth £42.72, leading to a scheme value of £2.6 billion. The cost of support in 2013-14 was £54.16 per MWh supplied and the cost of greenhouse gas (GHG) savings under the scheme was £105.38 per tonne (CO_{2e}).

4,068 generating stations accredited

We accredited 4,068 generating stations in 2013-14, a significant increase from the 892 stations we accredited in 2012-13. This was driven by the high number of applications we received from microgenerators (stations 50 kW in capacity or lower) in Northern Ireland, most of which were solar PV. We also made improvements to our procedures that allowed us to process and approve these applications more quickly.

² Fuelled technology refers to stations generating from eligible biomass, bioliquid, energy crops or waste.

We accredited 240 stations above 50 kW in capacity. The majority of these were also solar PV, gaining accreditation before a reduction in support levels on 1 April 2014.

The aggregate capacity of the stations we accredited was 2,836 MW. Solar PV and offshore wind each represented around 1 GW of this, and most of the remainder was onshore wind.

Among the stations we accredited was Gwynt y Mor, which at 570 MW is one of the world's largest offshore wind farms, as well as being the largest station we accredited in 2013-14.

From the start of the scheme in 2002 until the end of 2013-14, we had accredited 7,280 generating stations with a total capacity of 18,925 MW.

Audits under the RO

We carried out audits of generating stations and suppliers in 2013-14 to verify that they are complying with the requirements of the scheme and submitting accurate information to us. We audited 26 generating stations across a range of technology types, including three new enhanced fuel audits. Similarly, we audited 12 licensed suppliers on their supply volume submissions. We rated the majority of both types of audit as good or satisfactory and we are addressing those with lower ratings.

Changes to RO legislation

DECC and the devolved administrations in Scotland and Northern Ireland introduced a number of amendments to RO legislation in 2014. These were mainly around the transition to the RO's successor, Contracts for Difference (CfD), and biomass sustainability. There were also specific amendments for offshore wind in Scotland and solar PV in Northern Ireland. The RO will close to new generating capacity on 31 March 2017 and this is covered in the RO Closure Order, introduced in 2014 and to which we expect further amendments in 2015. This legislation includes several grace periods to allow stations to gain RO accreditation after the closure date in certain circumstances.

1. Introduction

Purpose of this document and points to note

1.1 RO legislation,³ which we collectively refer to as 'the Orders' in this report, puts a requirement on us to produce an annual report for the RO. It says that we must publish a report on the preceding obligation period by 1 April each year. The legislation states that the minimum information the report must include is:⁴

- 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
- Full details of any mutualisation⁵ triggered
- The outcome of any investigations we conducted into suppliers' and generators' compliance with the Orders.

1.2 We can also publish 'any other matters we consider relevant' in the report. We use this to include information such as the number and type of stations we have accredited, the amount of renewable generation, value of the scheme, recent and upcoming changes in legislation, and improvements we have made to our administration of the scheme.

1.3 Unless clear from the context, 'RO' means the three UK obligations – the Renewables Obligation England and Wales (RO), the Renewables Obligation Scotland (ROS) and the Northern Ireland Renewables Obligation (NIRO) – collectively. Similarly, 'ROC' means England and Wales Renewables Obligation Certificates (ROCs), Scottish Renewables Obligation Certificates (SROCs) and Northern Ireland Renewables Obligation Certificates (NIROCs) collectively.

1.4 There are technically three buy-out funds, and three late payment funds, for the RO (England and Wales, Scotland and Northern Ireland). Where we say buy-out fund or late payment fund without specifying the obligation, this means all three collectively. Similarly where we refer to payments without further qualification, this means all of the buy-out and late payments together.

1.5 We downloaded the data to produce this report on 11 November 2014 from the Renewables and CHP Register, which we simply refer to as the Register. Data held on the Register can change, for example we might amend accreditation dates or revoke ROCs that we issued previously. Therefore figures from data downloaded at a later date may vary slightly from those in this report.

³ Appendix 1 contains a full list of current RO legislation.

⁴ Article 57 of the RO and ROS and article 49 of the NIRO list the requirements for the annual report.

⁵ Mutualisation is the provision in legislation for suppliers to cover a shortfall in the buy-out fund through additional payments – Chapter 5 has further details.

Scheme administration

1.6 The Orders define our powers and responsibilities for the RO. These include:

- Accrediting generating stations so they can receive ROCs
- Publishing a list of accredited generating stations (with full and preliminary accreditation)
- Issuing and revoking ROCs
- Establishing and maintaining a register of ROCs
- Monitoring compliance of suppliers and generators with the requirements of legislation
- Adjusting the buy-out price and mutualisation ceiling in line with the Retail Prices Index (RPI) each year
- Receiving buy-out and late payments from suppliers and redistributing these funds.

1.7 We administer the RO directly in Great Britain (ie the RO and ROS). We also administer the NIRO on behalf of the Utility Regulator Northern Ireland (UR). We do this through an Agency Services Agreement,⁶ under which we also carry out the duties listed above for the NIRO. However, UR retains the statutory responsibility for administering the NIRO.

1.8 We recover our costs for administering the RO (including UR's costs) from the buy-out fund. We take our costs for the present scheme year from the previous year's buy-out fund. We published proposed costs for 2014-15 of £3,918,099 on our website⁷ on 1 September 2014. We received no responses during the four-week public comment period, and therefore withdrew this amount from the 2013-14 buy-out fund in October 2014.

⁶ This is possible through section 121 of the Energy Act 2004

⁷ <https://www.ofgem.gov.uk/publications-and-updates/comment-period-2014-15-renewables-obligation-administration-costs>

2. Generators accredited under the RO

Chapter summary

By the end of 2013-14 we had accredited 7,280 stations since the start of the scheme, with a total capacity of 18,925 MW. In 2013-14 we saw a large increase in the number of microgenerators we accredited in Northern Ireland (where there is currently no Feed-in Tariff scheme) - more than 5,000 of the stations accredited are NI microgenerators. We accredited around 1 GW of solar PV capacity in 2013-14, more than three times the capacity we had accredited in previous years combined. We also accredited Gwynt y Mor, one of the world's largest offshore wind farms.

2.1 One of our functions in RO legislation is to accredit renewable generating stations for the scheme. Operators of generating stations apply for accreditation using the Register, where they submit information for us to review.

2.2 In general, a station's accreditation date is the latter of the date the operator made its application to us and the date the station was commissioned. Due to the time the accreditation process takes, a station whose accreditation date is in one obligation period may actually have been approved by us in the following obligation period. The information in this chapter concerns stations with accreditation dates to the end of the 2013-14 obligation period, regardless of when we processed the applications. So for example when we refer to 'a station accredited in March 2014' we mean that the station's accreditation was *effective* from March 2014.

2.3 The RO allows a person who proposes to construct or operate a generating station to apply to us for preliminary accreditation.⁸ Preliminary accreditation gives applicants more certainty about future accreditation at the planning stage. Once we have granted preliminary accreditation, we usually award full accreditation to the station at a later date. However it does not necessarily represent the final details of the station's accreditation, nor does it guarantee that we will issue ROCs to the station. Therefore we have not included any information on stations with preliminary accreditation in this chapter, nor those that have been withdrawn from the scheme.

2.4 The total installed capacity (TIC) of a station is the maximum capacity a station can operate at for a sustained period without damaging itself. The declared net capacity (DNC) is the TIC less the amount of electricity that is consumed by the station.⁹ In this report the capacities we quote are DNC values unless specified otherwise.

2.5 The Feed-in Tariff scheme (FITs) was introduced in Great Britain on 1 April 2010. Since then, microgenerators – wind, solar PV, hydro and anaerobic digestion (AD) stations of 50 kW or lower – have become FITs installations rather than RO stations. Northern Ireland did not introduce a FIT scheme, so microgenerators there are still accredited under the RO. A large majority of the total number of RO accreditations are NI microgenerators, so these are removed from some of the information in this chapter to make the picture clearer for larger generators.

2.6 Fuelled technology refers to stations generating from eligible biomass, bioliquid, energy crops or waste. The capacity of fuelled stations is difficult to specify in certain cases, as some stations burn renewable fuel alongside fossil fuel (co-firing). For example, a station's capacity might be 2 GW, but it is not a 2 GW *renewable* station if only 2% of the fuel it uses is

⁸ Preliminary accreditation and the conditions it is subject to are defined in article 58 of the RO and ROS 2009 Orders and article 50 of the NIRO 2009 Order.

⁹ Article 2 in each of the RO Orders defines TIC and DNC.

renewable. Some stations also burn different proportions of renewable fuel (the biomass fraction) from month-to-month. A further complication is that some fuelled stations did not claim any ROCs in 2013-14 – therefore there is no biomass fraction to use – but we have issued ROCs to them previously and they are still accredited under the scheme. Our methodology for treating the capacity of a fuelled station therefore depends on its circumstances, and is as follows:

- If we issued ROCs to a station in 2013-14, we multiply its average biomass fraction for the year by its capacity. The biomass fraction may be 100%, for example for dedicated biomass stations.
- We did not issue ROCs to some stations in 2013-14, but they are still accredited and have received ROCs previously. In this case, we use the station's biomass fraction from the most recent year it *did* receive ROCs and multiply this by its current capacity.
- There are some stations we did not issue ROCs to in 2013-14, nor at any time since April 2007 (the earliest date for which we have data on the Register), but which remain accredited. For most stations in this category we use the average biomass fraction from 2013-14 for all active stations (28.6%) and multiply this by the station's capacity. For inactive co-firing stations with a capacity of 1 GW or more, we use the average biomass fraction from 2013-14 (0.56%) for active co-firing stations of this size. This is with the exceptions of Drax, Ironbridge and Tilbury, whose average biomass fractions are so high that they would skew the capacities of the inactive stations to an unrealistically high value.

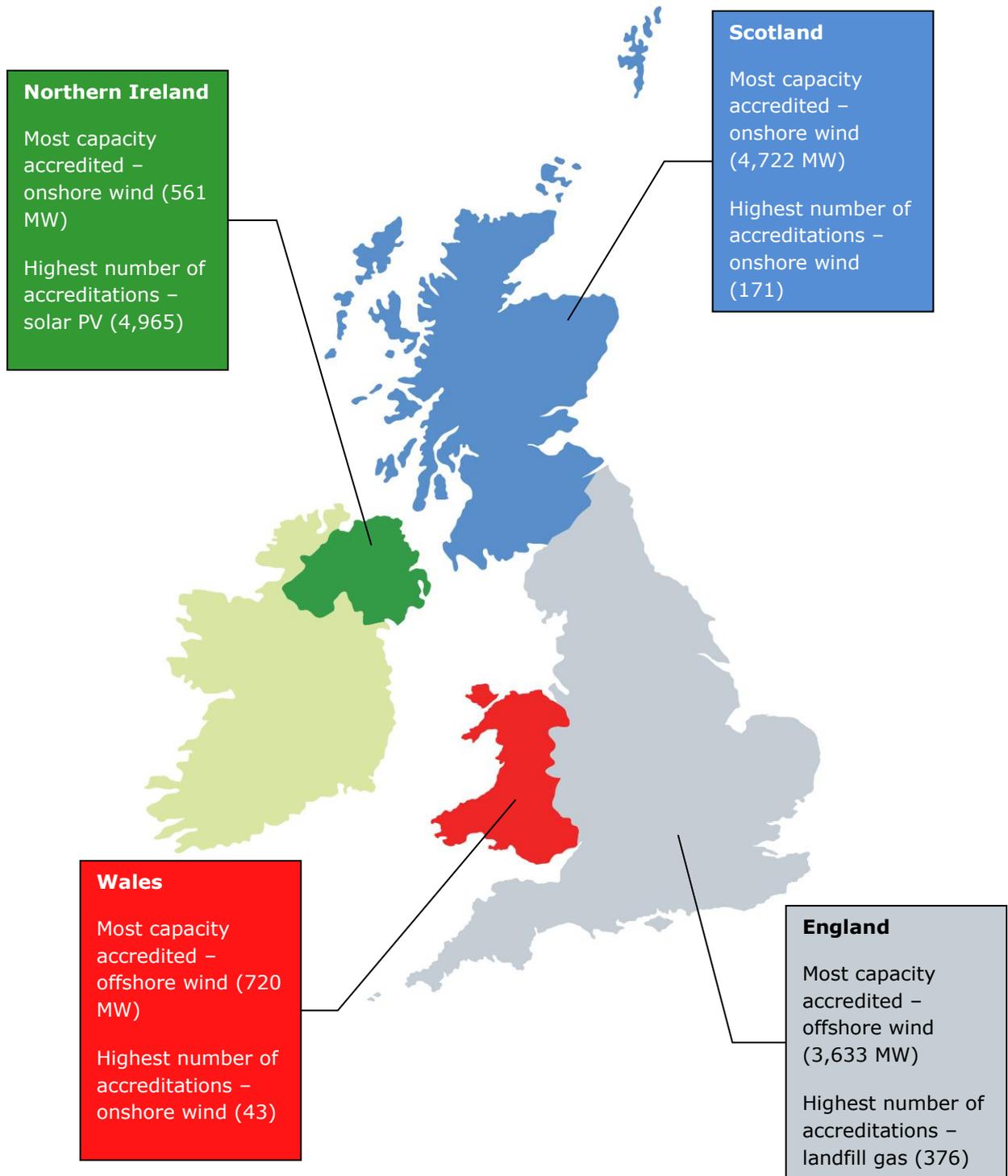
2.7 We have changed this methodology slightly from the last two years, so the total capacity of fuelled stations at the end of 2013-14 is not directly comparable with the figure we reported last year.

Stations accredited from the start of the scheme to the end of 2013-14

2.8 From the data we downloaded on 11 November 2014, there were 7,280 stations accredited under the RO by the end of 2013-14. The combined capacity of these stations was 18,925 MW. As explained in paragraph 2.5, the vast majority of these are microgenerators in Northern Ireland – there are 5,398 of these with a combined capacity of 32.4 MW. Nonetheless, the overall totals still represent a significant increase on the 3,151 accreditations and 16,260 MW we reported last year.

2.9 The technologies with the most accreditations and the highest total capacity vary across each country in the UK, shown in **Figure 1**.

Figure 1: The most prominent renewable technologies in each country in the UK at the end of 2013-14



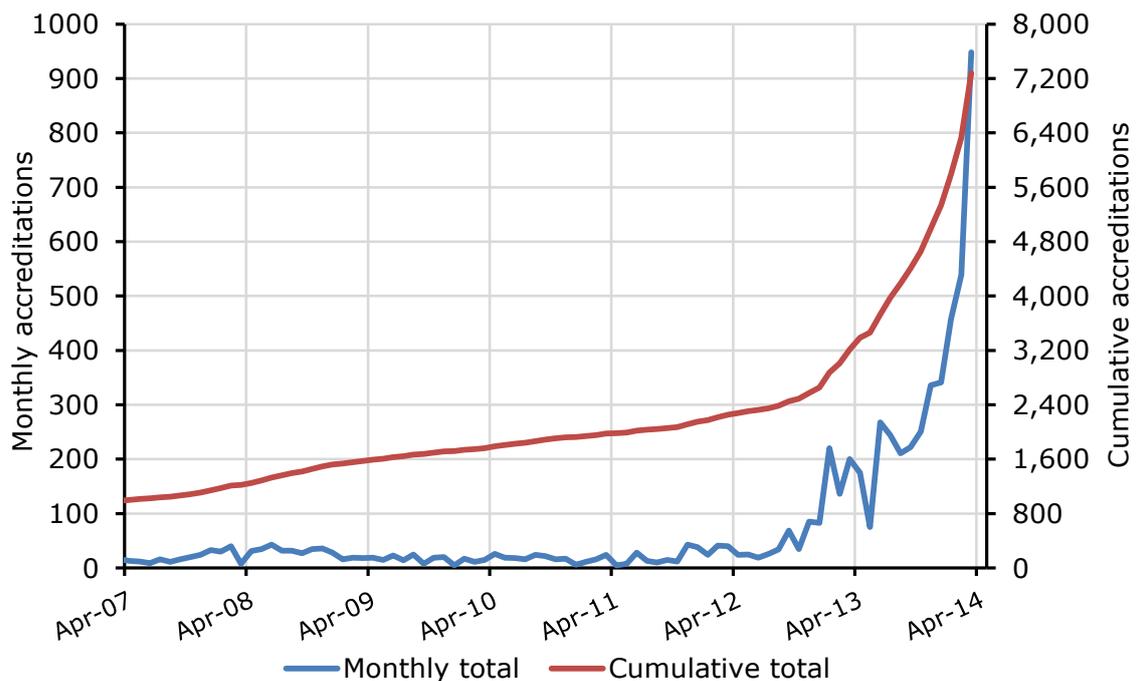
Monthly accreditation activity

2.10 **Figure 2** shows the number of stations we have accredited each month from April 2007 to March 2014. There was a sharp increase in the number of accreditations in 2012-13, but in 2013-14 this accelerated at an even greater rate. There are 948 stations with accreditation dates in March 2014 alone. This is more than the number of stations we accredited in the whole of 2012-13 (892) that we reported last year.

2.11 Although microgenerator support levels have been constant since 2010, from the last quarter of 2013 there was a large increase in the number of accreditation applications we received for NI microgenerators. The overwhelming majority of these (99% of the microgenerators we accredited in NI in 2013-14) were solar PV. This growth in applications is due to a decrease in the cost of solar PV panels, and the microgeneration sector in NI becoming more developed.

2.12 In response to this sharp rise in NI microgenerator applications, we have streamlined our accreditation process so that we can accredit more applications in a shorter amount of time. We also work closely with agents and 'free PV'¹⁰ companies who submit large numbers of applications to us.

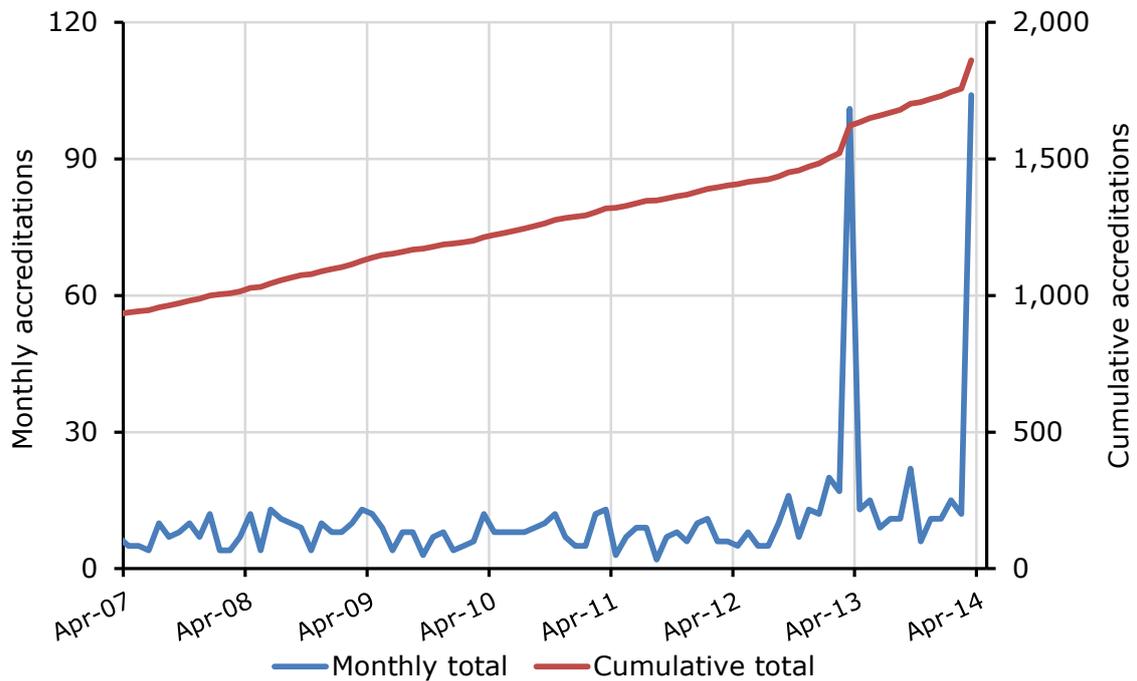
Figure 2: Number of generating stations with RO accreditations commencing since 2007-08



2.13 Microgenerators dominate the accreditation numbers in Figure 2, so **Figure 3** removes them. The number of larger stations we accredit has generally been steady, at around ten per month. The exceptions are in March 2013 and March 2014. The latter was still a very active month for accreditations even after microgenerators are removed. We accredited around 100 stations in each of these months, as operators applied for accreditation before reductions in banding rates (the level of ROC per MWh support) came into effect on 1 April in each year. The majority of the accreditations causing these spikes were solar PV stations.

¹⁰ These are companies who lease a space (normally a rooftop) in a domestic property from the homeowner. They then install solar PV panels in the space and we issue the ROCs for the installation to these companies.

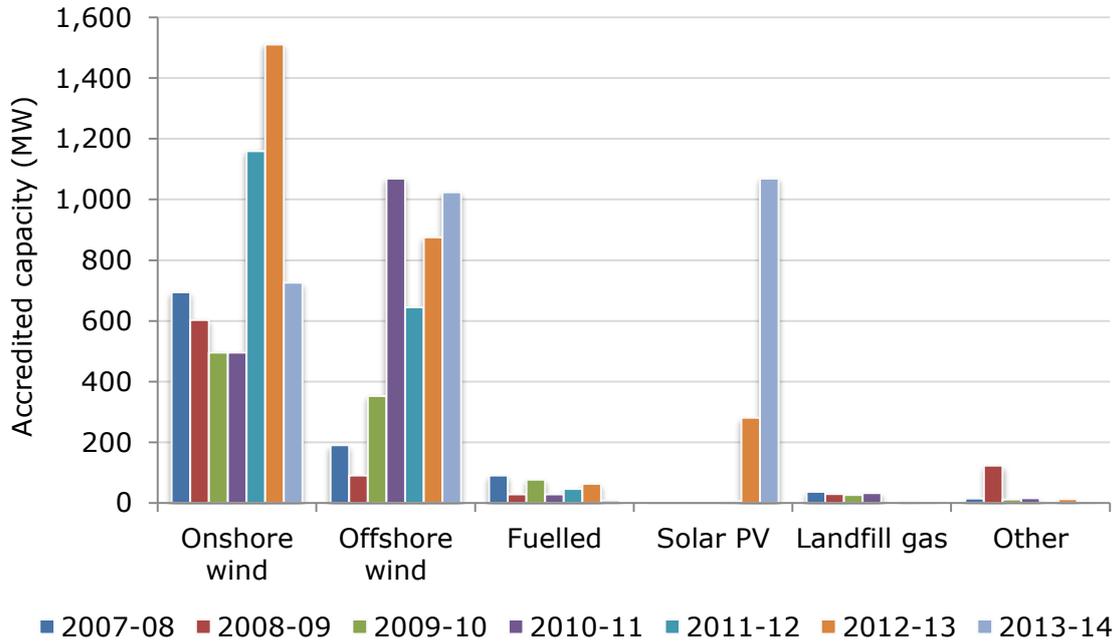
Figure 3: Number of generating stations accredited monthly since 2007-08 (over 50 kW only)



Split by technology

2.14 Landfill gas stations made up a large proportion of accredited capacity in the early years of the RO. In recent years, most of the capacity we have accredited has been onshore and offshore wind stations. 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 – stations such as London Array and Gwynt y Mor have capacities of over 500 MW. In the last two obligation periods we have also seen a dramatic increase in the amount of solar PV capacity we have accredited. Until the end of 2011-12 we had only accredited a cumulative total of 6 MW of solar PV. In 2012-13 and 2013-14, meanwhile, we accredited over 1,300 MW in total. The RO will close to large solar PV stations (greater than 5 MW TIC) from 1 April 2015 – see 7.9 for more details. **Figure 4** shows the capacity of each technology we have accredited since 2007-08.

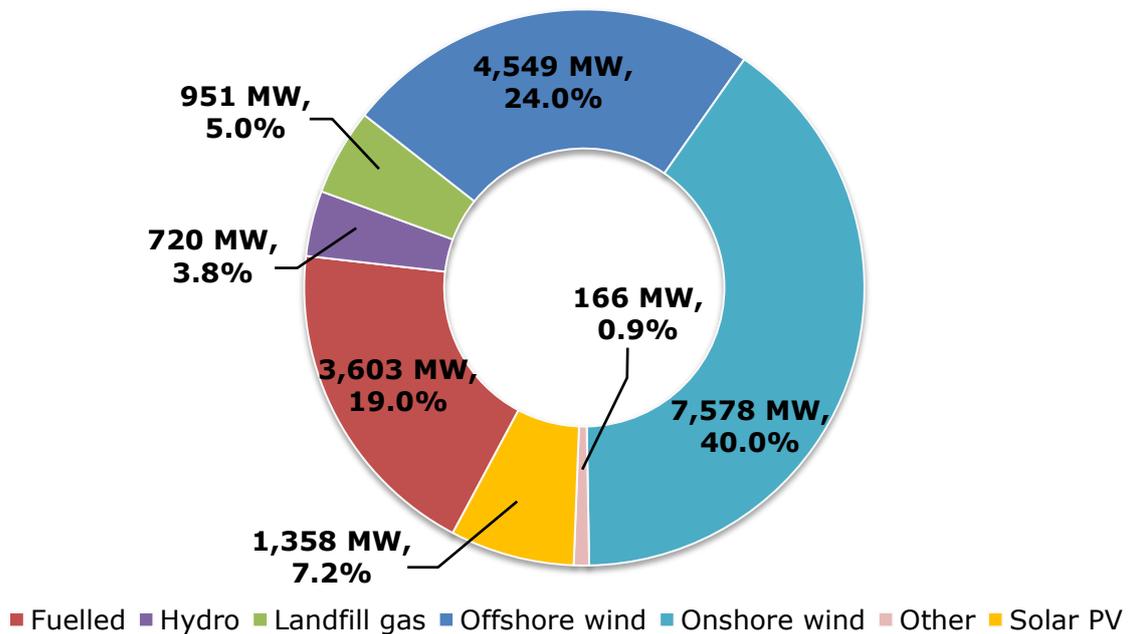
Figure 4: Total capacity accredited by generation technology and obligation period since 2007-08



Other technologies are sewage gas, tidal power, wave power and hydro.

2.15 **Figure 5** summarises the total capacity of each technology that we have accredited from the beginning of the RO until the end of 2013-14. Following the recent growth in solar PV, it is now the fourth-largest technology in the RO by accredited capacity. However it remains a long way behind the largest three technologies: offshore wind, onshore wind and fuelled. Between them, these represent more than 80% of all the capacity accredited under the RO.

Figure 5: Capacity of accredited generating stations by technology type, to the end of 2013-14

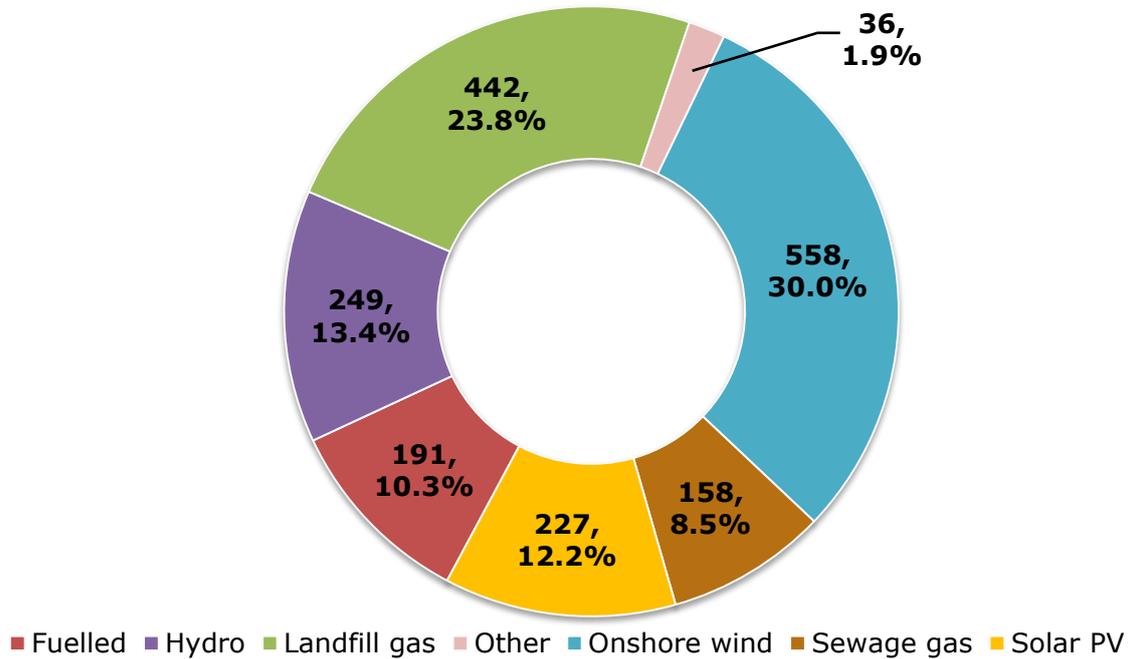


Other technologies are sewage gas (161 MW), tidal power (3 MW) and wave power (2 MW).

2.16 Aside from the microgenerators in Northern Ireland, there are also 21 microgenerators in England and Scotland. These have a combined capacity of 32.6 MW, which is 0.2% of the total. Microgenerators, and therefore solar PV, dominate any summary of the number of accreditations to the end of 2013-14. As such, **Figure 6** summarises the number of stations we have accredited since the start of the scheme excluding microgenerators.

2.17 Despite the removal of microgenerators, the main story compared with last year is the presence of solar PV on this chart, which now comprises 12.2% of the number of non-microgenerators accredited (it was listed under other technologies last year).

Figure 6: Number of generating stations, by technology type, accredited to the end of 2013-14 (excluding microgenerators)



Other technologies are offshore wind (28), tidal power (4) and wave power (4).

Generators accredited in 2013-14

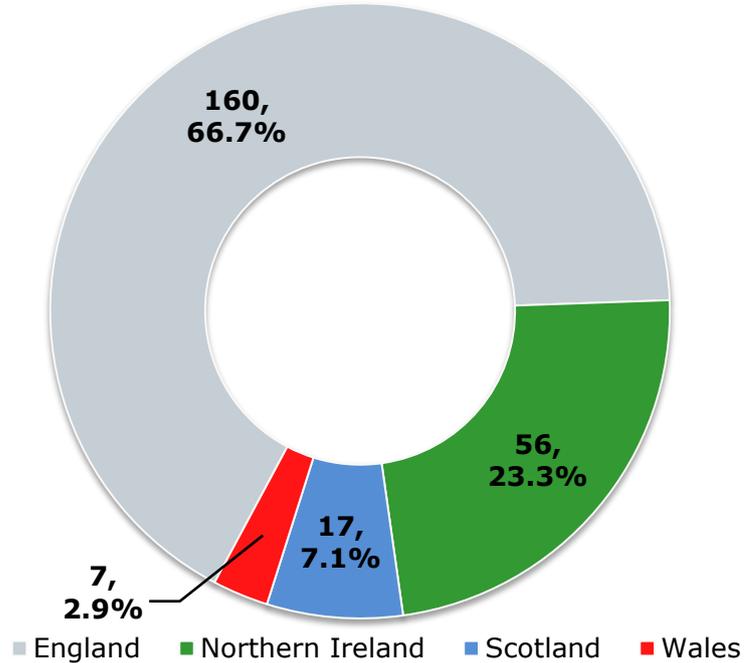
Number, capacity and geographical split of accreditations

2.18 We accredited 4,068 stations in 2013-14. This is more than four times as many as the 892 we reported last year.

2.19 The vast majority – 3,828 – of the stations we accredited were microgenerators. All but one of these were in Northern Ireland (the other was a micro CHP station in England). We therefore accredited 240 stations over 50 kW, a more modest increase from the 186 non-microgenerators we accredited last year.

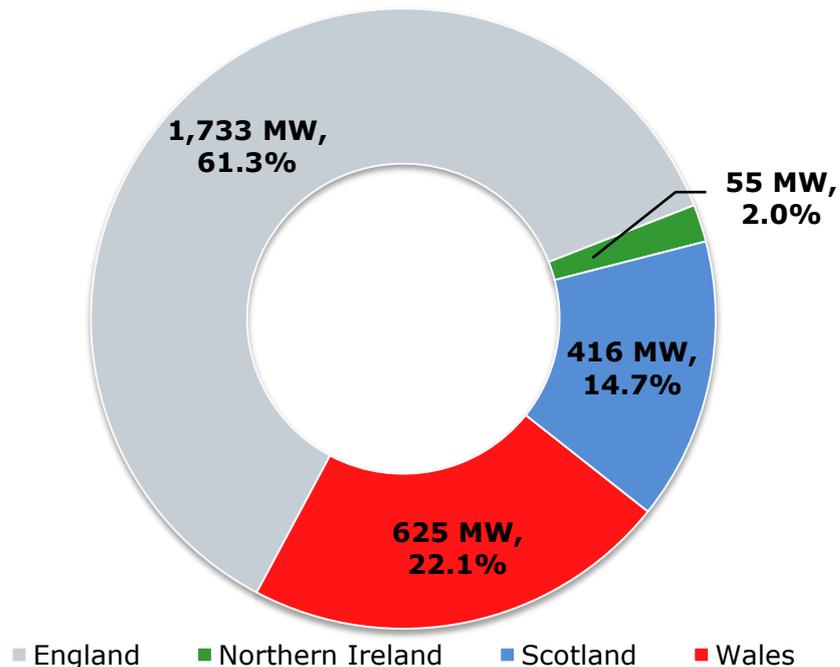
2.20 The dominance of microgenerators is so great this year that the numbers for England, Wales and Scotland will be dwarfed by Northern Ireland in any chart showing the geographical split of accreditations. Therefore **Figure 7** shows the number of accreditations in each country for non-microgenerators only.

Figure 7: Number of accreditations in 2013-14 by country (excluding microgenerators)



2.21 The aggregate capacity of the stations we accredited in 2013-14 was 2,829 MW, up from 2,413 MW last year. As in previous years, the majority of this capacity was in England, though there was a notable increase in the accredited capacity in Wales – 625 MW this year, from 107 MW last year. However most of this is due to a single station, Gwynt y Mor offshore wind farm, which has a capacity of 570 MW. The split by country of capacity we accredited in 2013-14 is shown in **Figure 8**. This includes microgenerators, whose total capacity was 23 MW.

Figure 8: Capacity of generators accredited in 2013-14 by country



Technologies accredited in 2013-14

Number

2.22 Given the number of microgenerators, and the fact that the majority of these are solar PV stations, unsurprisingly solar PV accreditations were the most numerous in 2013-14 among the technology types. However, this is still the case when microgenerators are excluded – 141 of the 240 stations we accredited above 50 kW in capacity were solar PV. Like last year, we accredited a large number (90) of these in March. This was before a reduction in banding rates for stations accredited on or after 1 April 2014. In Great Britain, support for building-mounted solar PV stations reduced from 1.7 to 1.6 ROCs per MWh, with the rate for ground-mounted stations reducing from 1.6 to 1.4 ROCs per MWh. In Northern Ireland, support for building-mounted stations over 250 kW in capacity was reduced from 1.7 to 1.6 ROCs per MWh (support for ground-mounted stations and those 250 kW in capacity or lower remained unchanged).

2.23 Other than onshore wind, of which we accredited 81 stations, we accredited fewer than ten non-microgenerators for each of the other technology types this year.

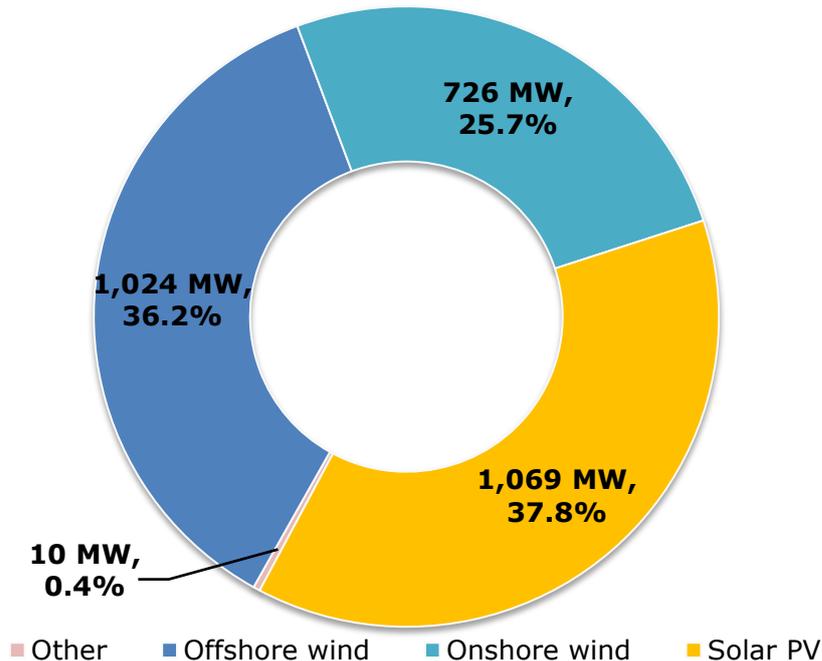
Capacity

2.24 The capacity of the solar PV stations we accredited was 1,069 MW. This is not only far greater than all of the solar PV capacity accredited in previous years put together (we had accredited 289 MW by the end of 2012-13), but also makes it the technology with the most capacity accredited this year. The capacity of these stations was spread from a little over 50 kW to around 23 MW (the capacity of the largest solar PV station we accredited, Broxted Solar Farm).

2.25 Offshore wind was the second-largest by capacity of the technology types we accredited, with 1,024 MW. This is its highest total since 2010-11. We only accredited five stations, but they included the aforementioned Gwynt y Mor, as well as the 374 MW West of Duddon Sands generating station. These have a combined capacity of 944 MW, and are respectively second and fourth in the list of the largest offshore wind farms accredited under the RO to the end of 2013-14.

2.26 Onshore wind had the third-highest capacity of the technologies we accredited this year, with 726 MW. The 2013 ROO Amendments reduced the banding rate for all onshore wind farms in Great Britain, and those in Northern Ireland over 5 MW, accredited from 1 April 2013. Stations accredited from this date receive 0.9 ROCs per MWh generated, previously they received 1 ROC per MWh. This may partly explain why we accredited less than half the capacity of onshore wind farms in 2013-14 than we did in 2012-13. Nonetheless, the capacity accredited was still similar to the obligation periods from 2002-03 to 2010-11.

2.27 We accredited 8.2 MW of fuelled stations and 1.7 MW combined of hydro, landfill gas and sewage gas stations. Together these comprise the other technologies in **Figure 9**, which summarises the technology split of the stations we accredited in 2013-14.

Figure 9: Capacity of generators accredited in 2013-14 by technology

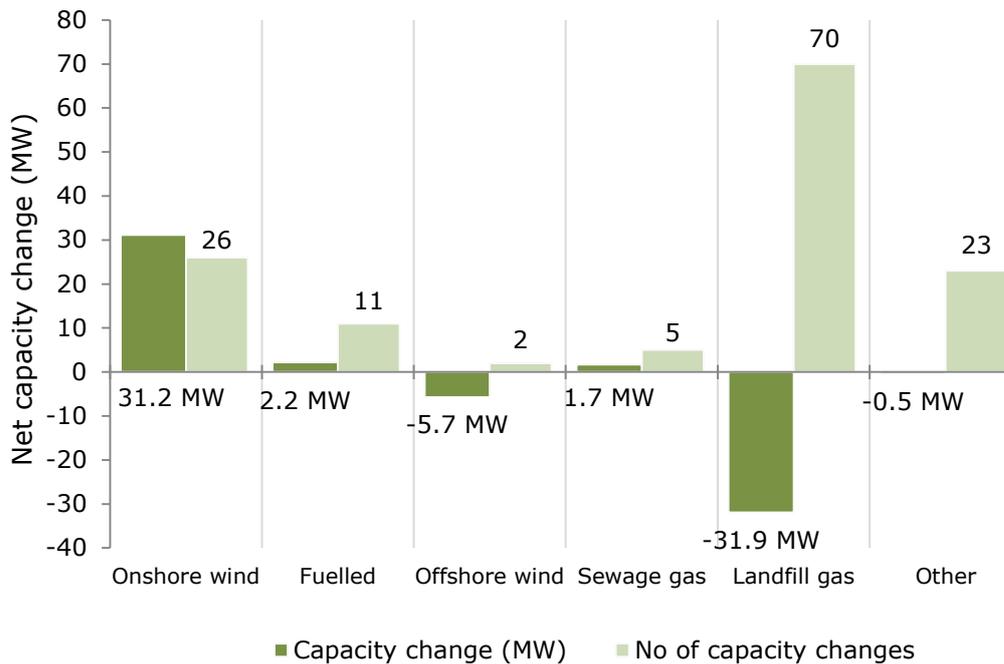
Other technologies are fuelled, hydro, landfill gas and sewage gas

Capacity amendments

2.28 As well as accrediting new stations, we also receive requests from generators to change the details of their stations in some way. Most commonly these are requests to change a station's capacity.

2.29 There were 137 changes in capacity during 2013-14. The net change in capacity across all stations as a result of these was -3.1 MW.

2.30 The number of changes and the net change in capacity for each technology are shown in **Figure 10**. Most of the added capacity during the year came from onshore wind, as stations expanded or replaced existing turbines with more powerful ones. Most of the capacity reductions were from landfill gas stations, as the quality and quantity of available gas have reduced in recent years due to changes in the waste mix (for example some organic waste is now used in anaerobic digestion).

Figure 10: Capacity amendments in 2013-14

NFFO generating stations

2.31 The predecessor schemes to the RO were the Non Fossil Fuel Obligation (NFFO), NI NFFO and Scottish Renewables Obligation (SRO). We refer to these collectively as NFFO. Before the introduction of the RO, they were the government's primary instrument of renewable energy policy.

2.32 NFFO legislation¹¹ 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).

2.33 The PES established the Non Fossil Purchasing Agency (NFFPA) 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 NFFPA became the electricity purchasing body in England and Wales in 2001. NFFPA Scotland, a wholly-owned subsidiary of the NFFPA, has acted as the purchasing body in Scotland since 2006.

2.34 The NFFO and SRO are no longer open to new generators, though their contracts will continue until the last of them expires in 2019. There are however some NFFO stations that are also accredited under the RO. These function in the same way as other RO stations, except that while operating under a NFFO contract, we issue ROCs to the electricity supplier who has purchased the electricity from the station, rather than to the operator of the generating station.

2.35 At the end of 2013-14 there were 95 stations still supported under NFFO contracts, with an aggregate capacity of 328 MW. This is down from 145 stations last year. The reduction is because several contracts have since ended, either through fulfilment of the contract term,

¹¹ 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.

because we have granted economic termination to the contract, or because the NFFO 3 Order expired in August 2013.

3. ROCs issued and renewable generation

Chapter summary

In 2013-14 we issued 62.8 million ROCs to renewable generating stations, the most we have ever issued in an obligation period. This represented 49.6 TWh of renewable generation, equivalent to 16.3% of the total electricity supplied in the UK. Offshore and onshore wind were the dominant technologies, accentuated by several exceptionally windy winter months. Solar PV also grew significantly compared with previous years.

3.1 One of our functions in administering the RO is to issue ROCs to operators of generating stations. ROCs are electronic certificates that we issue based on electricity output figures that generators submit to us using the Renewables and CHP Register.

3.2 Generators must submit output figures to us within two months after the month of generation, though we have discretion to accept the figures after this deadline.¹² For example, they should submit output figures for generation in January before the end of March.

3.3 Once generators have submitted output figures to us, we will issue ROCs to them based on these figures. We will only issue ROCs for RO-eligible renewable output¹³ from each station.

3.4 Banding was introduced in the 2009 RO Orders,¹⁴ which meant different renewable technologies received different support levels for each MWh of electricity they generate. Before this, generators received 1 ROC per MWh regardless of technology type. Banding levels have since been revised in RO Amendment Orders, most notably in 2013. Appendix 6 of our generator guidance¹⁵ contains detailed information on banding, including the rates for each technology.

Historical trends in ROCs issued and renewable generation

3.5 **Figure 11** shows the number of ROCs we have issued in each obligation period since 2007-08 (the stacked columns). It also shows the amount of renewable generation associated with these ROCs (yellow line) and the obligation level (pink columns).

3.6 In 2013-14 we issued 62.8 million ROCs, while the total UK supplier obligation was 61.9 million ROCs. This is the first time in the history of the RO that we have issued more ROCs than the obligation. The main reason for this was the consistently high wind speeds between October 2013 and March 2014, and is discussed in more detail later in this chapter. It also had an effect on supplier compliance, as a large number of ROCs were presented to us by suppliers which led to a relatively small buy-out fund. This is described in Chapter 5.

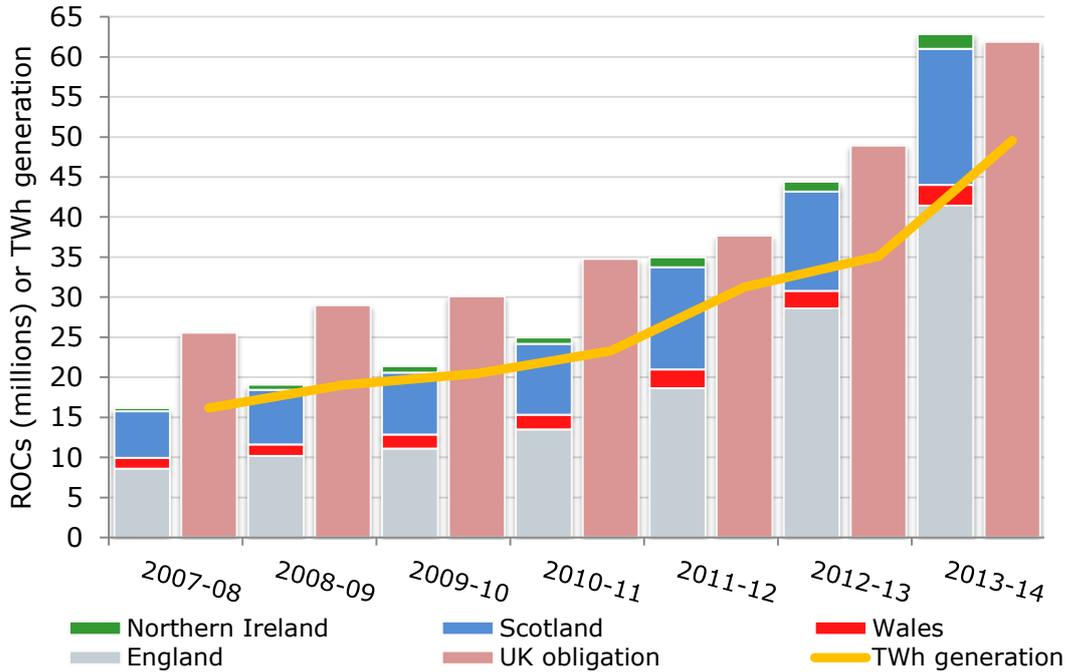
¹² Paragraphs (3) and (4) of article 53 (RO and ROS) and article 45 (NIRO) define this deadline and our discretion to accept late output data.

¹³ As defined in article 2(1) of the Orders. Articles 25 and 26 set out the calculation methodology.

¹⁴ Article 27 of the RO and ROS Orders and article 25 of the NIRO.

¹⁵ <https://www.ofgem.gov.uk/publications-and-updates/renewables-obligation-guidance-generators-2>

Figure 11: ROCs issued, obligation and renewable generation since 2007-08

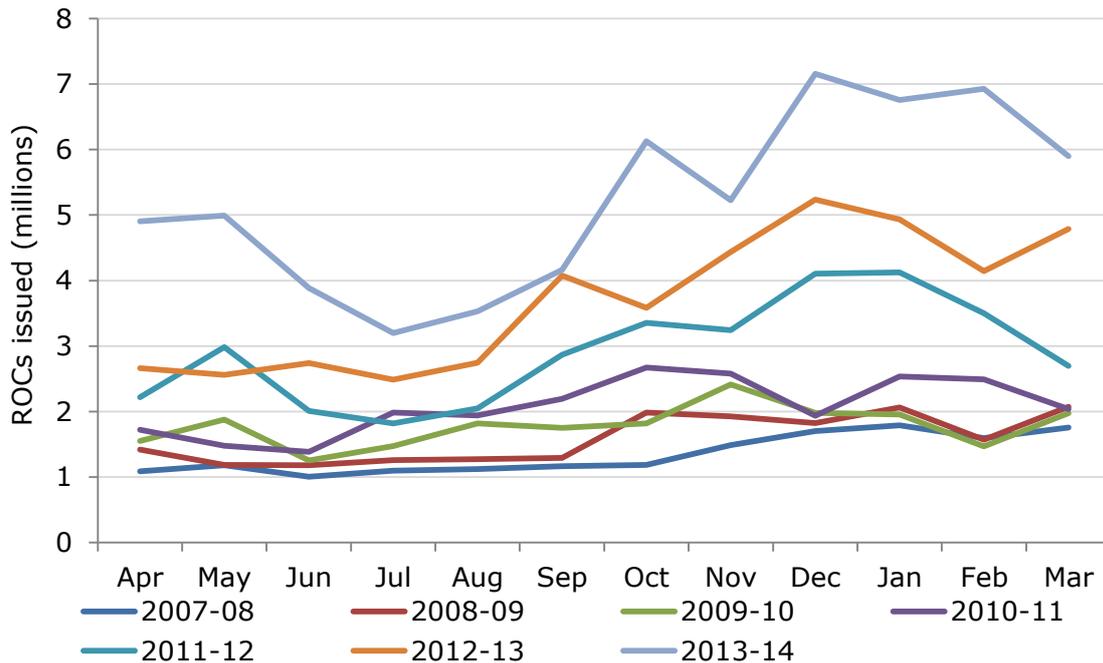


3.7 In 2013-14 the total generation from stations accredited under the RO was 49.6 TWh. Since banding was introduced in 2009, the number of ROCs issued per MWh of renewable generation has increased each year. However this year the figure was the same as it was in 2012-13: 1.27 ROCs per MWh of generation. This suggests that the number of ROCs issued increased from last year at the same rate as the amount of generation. In the previous four years they were diverging, with the number of ROCs we issued increasing more quickly. This is shown in **Table 1**.

Table 1: Average ROCs issued per MWh of generation since the introduction of banding

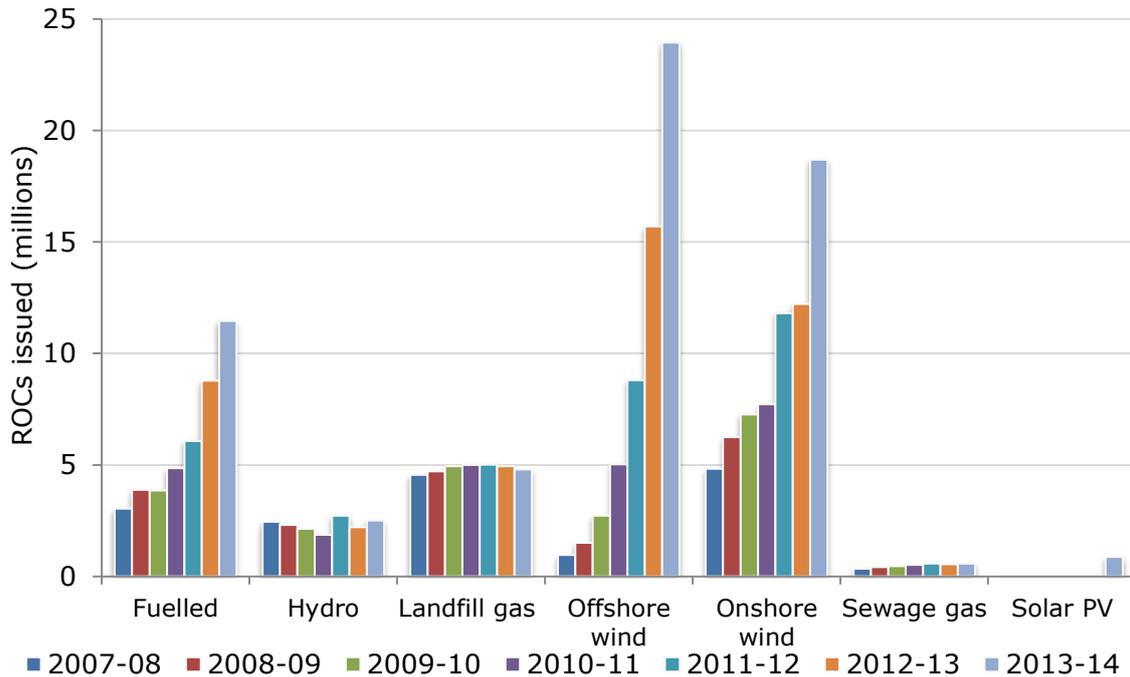
Obligation period	Average ROCs issued/MWh of generation
2009-10	1.04
2010-11	1.07
2011-12	1.12
2012-13	1.27
2013-14	1.27

3.8 **Figure 12** shows how many ROCs we issued for each month of each obligation period since 2007-08. It is immediately obvious how many more ROCs we issued in 2013-14 than previously, given how far above every other obligation period the line sits. For context, before the start of 2013-14 there had only ever been one instance where we had issued more than five million ROCs in a month (December 2012). In 2013-14, we issued five million ROCs or more every month from October onwards. Indeed December, January and February were each above or close to seven million ROCs.

Figure 12: Monthly issue of ROCs since 2007-08

These figures do not include ROCs that we issue annually rather than monthly, but these are lower than 0.1% of the total.

3.9 **Figure 13** groups technology types together and shows how many ROCs we have issued to each since 2007-08. The most striking feature here is the increase in ROCs issued to offshore and onshore wind. While for offshore the rapid rate of growth is a continuation of an existing trend, onshore only saw a modest increase from 2011-12 from 2012-13. However the year-on-year growth from 2012-13 to 2013-14 for both offshore and onshore wind was very similar, at around 53%. Solar PV makes its first appearance in this chart thanks to the large amount of capacity we accredited near the end of 2012-13 (described in last year's annual report). Previously we only issued small numbers of ROCs to solar PV stations. The steady growth in the number of ROCs we issued to fuelled stations continued. This was mainly due to existing stations increasing the amount of biomass used – either alongside fossil fuels (co-firing), or by converting units or an entire station to only use biomass – rather than new stations coming online. This followed the 2013 RO Amendments, which introduced new conversion and tiered co-firing bands for supporting biomass and energy crops. Meanwhile the numbers of ROCs we issued to hydro, landfill gas and sewage gas stations remained flat. This is unsurprising given how little capacity we have accredited in recent years for these technologies (see Chapter 2).

Figure 13: Annual issue of ROCs by generation technology since 2007-08

Tidal and wave power are not included here as they have only received around 25,000 ROCs between them since 2007-08.

ROCs issued and renewable generation in 2013-14

3.10 We issued 62,819,706 ROCs in 2013-14, which corresponds to 49,550,267 MWh of renewable generation. The number of ROCs we issued increased by 41.5% from last year, with renewable generation increasing by 41.2%.

3.11 The amount of electricity supplied in the UK in 2013-14 by licensed suppliers was 304.5 TWh (see Chapter 5 on supplier compliance for more details). Therefore the 49.6 TWh of renewable generation represented 16.3% of the total UK supply. Including the 2.6 TWh generated by FITs installations,¹⁶ this figure rises to 17.1%. This is a significant increase from last year's figure, including generation from FITs installations, of 11.7%.

Country summary

3.12 **Table 2** summarises the picture across each country in the UK in 2013-14.

¹⁶ Figure from the 2013-14 FITs annual report: <https://www.ofgem.gov.uk/publications-and-updates/feed-tariff-fit-annual-report-2013-14>

Table 2: ROCs issued and renewable generation across the UK in 2013-14

England	Wales	Scotland	Northern Ireland
ROCs issued			
41,416,478	2,594,846	16,954,990	1,853,392
Renewable generation (MWh)			
29,816,617	2,325,271	15,775,412	1,632,966
Technology with the highest generation/issued the most ROCs			
Offshore wind	Onshore wind	Onshore wind	Onshore wind
22,197,765 ROCs	1,271,765 ROCs	11,577,545 ROCs	1,576,703 ROCs
11,888,693 MWh	1,271,765 MWh	11,588,906 MWh	1,472,035 MWh
Totals			
ROCs issued		Renewable generation	
62,819,706		49,550,267	

Some onshore wind stations in Northern Ireland received more than 1 ROC per MWh. Hence the number of ROCs issued to these stations was higher than the figure for generation in MWh. Conversely in Scotland, some onshore wind stations received lower than 1 ROC per MWh (specifically stations accredited in 2013-14 which got 0.9 ROCs per MWh). In Wales all onshore wind stations received 1 ROC per MWh, so the numbers are the same.

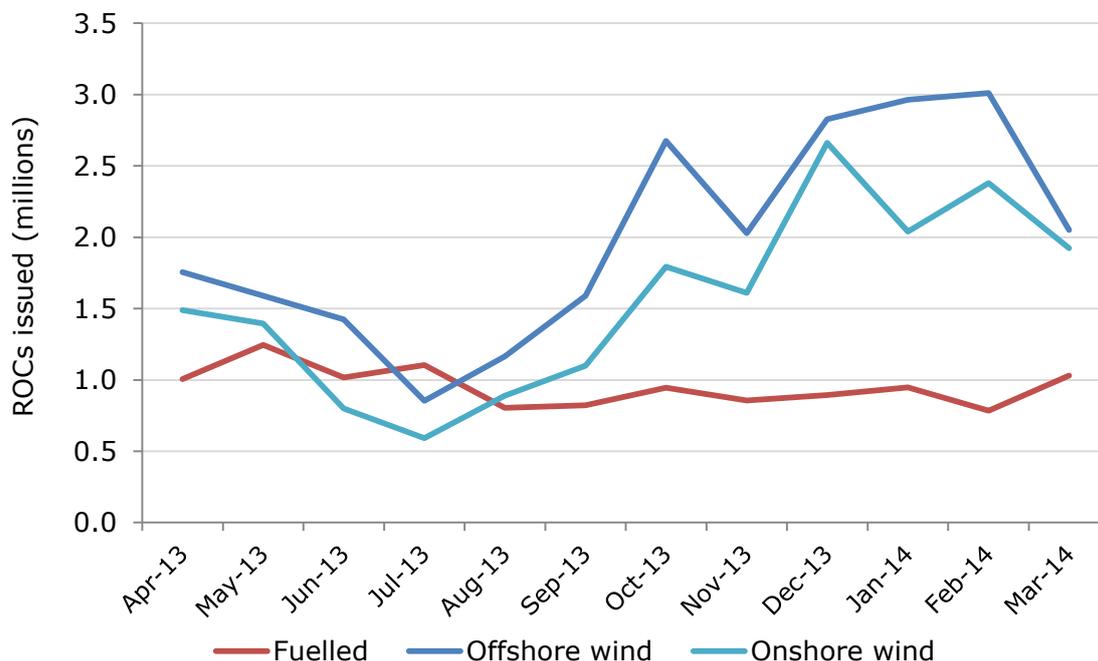
3.13 The percentages of ROCs issued and renewable generation in each country are shown in **Table 3**. These percentages are very similar to those from last year, suggesting that while the quantities of ROCs issued and generation increased significantly, the mix across the UK remained essentially the same. As with last year, England is the only country to have a greater share of the ROCs issued than of generation. This is because of the amount of offshore wind and fuelled stations (such as those using dedicated biomass or anaerobic digestion) that received more than 1 ROC per MWh.

Table 3: Percentage share of ROCs issued and generation per country

Country	Share of ROCs issued	Share of generation
England	65.9%	60.2%
Wales	4.1%	4.7%
Scotland	27.0%	31.8%
Northern Ireland	3.0%	3.3%

Technology summary

3.14 Fuelled, onshore and offshore wind remained the dominant technologies in 2013-14. Between them they comprised 83% of the generation under the RO and received 86% of the ROCs. The number of ROCs we issued per month to these technologies is shown in **Figure 14**. Here the seasonal variation for wind is clear, with the winter bias exaggerated compared with a typical year because of the strong winds in 2013-14. There is also a drop in the number of monthly ROCs issued to fuelled stations after July. This is due to the closure of Tilbury Power Station, which stopped claiming ROCs in August 2013. We issued between 300,000 and 500,000 ROCs to Tilbury each month from April to July 2013.

Figure 14: Monthly variation in ROCs issued (fuelled, onshore wind, offshore wind)

3.15 The extent of the windy winter 2013-14 is made clear in **Table 4**. This compares the load factors (the amount of electricity generated as a proportion of the theoretical maximum) in 2013-14 with the three previous years, for offshore and onshore wind. With the exception of November, which was typical, each month's load factor was well above average.

Table 4: Wind load factors in 2013-14 compared with the previous three years

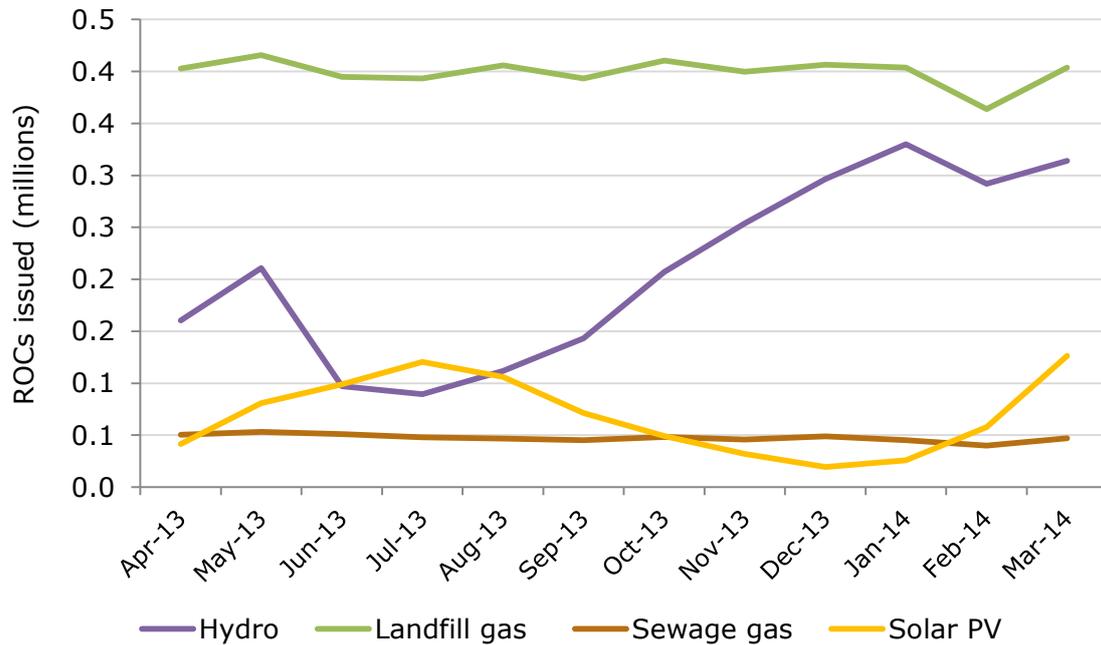
	Average last three years (2010-13, %)	Average 2013-14 (%)	Average last three years (2010-13, %)	Average 2013-14 (%)
	Onshore		Offshore	
October	28.0	32.1	36.9	51.8
November	30.2	27.7	37.6	38.6
December	31.6	45.6	40.3	54.4
January	31.2	36.0	36.2	53.4
February	29.3	47.1	35.5	59.8
March	22.5	32.5	26.7	37.5

These figures are based on the ROCs we have issued to stations over 50 kW in capacity.

3.16 The other technologies under the RO receive far fewer ROCs each month and so are shown, on a different scale, in **Figure 15**. Wave and tidal power are excluded as they only received around 9,700 ROCs between them – too few to be noticeable on this scale. This also used to be the case with solar PV, but with the large amount of capacity we have accredited recently it is now included. There is a clear seasonal variation for solar PV, with a peak during the summer as expected. Hydro follows a similar pattern to the wind technologies, with an exaggerated winter peak. This is because the winter of 2013-14 was also extremely rainy, as well as windy.¹⁷ Output from sewage and landfill gas stations was typically stable throughout the year.

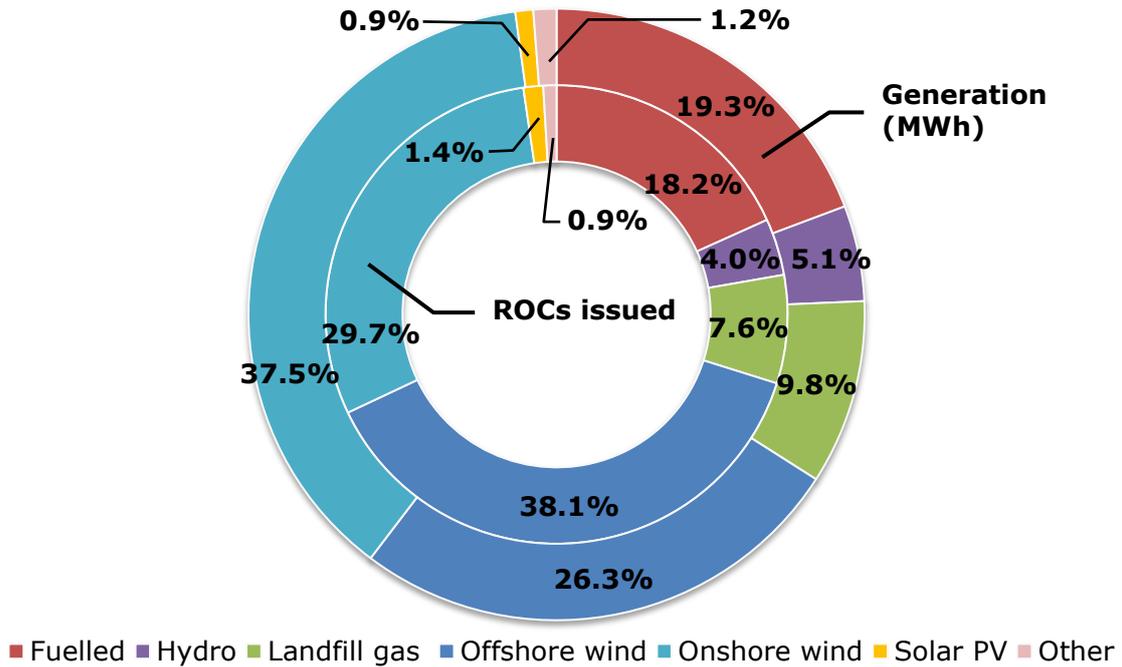
¹⁷ <http://www.metoffice.gov.uk/climate/uk/summaries/2014/winter>

Figure 15: Monthly variation in ROCs issued (hydro, landfill gas, sewage gas, solar PV)



3.17 **Figure 16** shows the technology split, across the UK as a whole, of ROCs issued and generation. The picture is not greatly different to last year. Though offshore and onshore wind generated significantly more electricity and therefore received more ROCs, the figures for several other technologies (fuelled, hydro, solar PV) also grew. Therefore the share of offshore and onshore wind only grew by a few percent. As in Figure 13, solar PV is now a large enough technology to be represented on this chart. We issued around 867,000 ROCs to solar PV stations in 2013-14, which generated approximately 464 GWh. These figures are greater than the totals for the previous six obligation periods combined (around 48,000 ROCs and 37 GWh respectively between 2007-08 and 2012-13). The other effect of the growth of most technologies is that landfill gas' share has come down from last year. This is unsurprising, as we have accredited very few landfill gas stations in recent years and it is not a technology that varies with the weather. Therefore its electrical output and the number of ROCs it has received have remained steady in recent years (see Figure 13).

Figure 16: ROCs issued and generation by technology in 2013-14 (UK-wide)

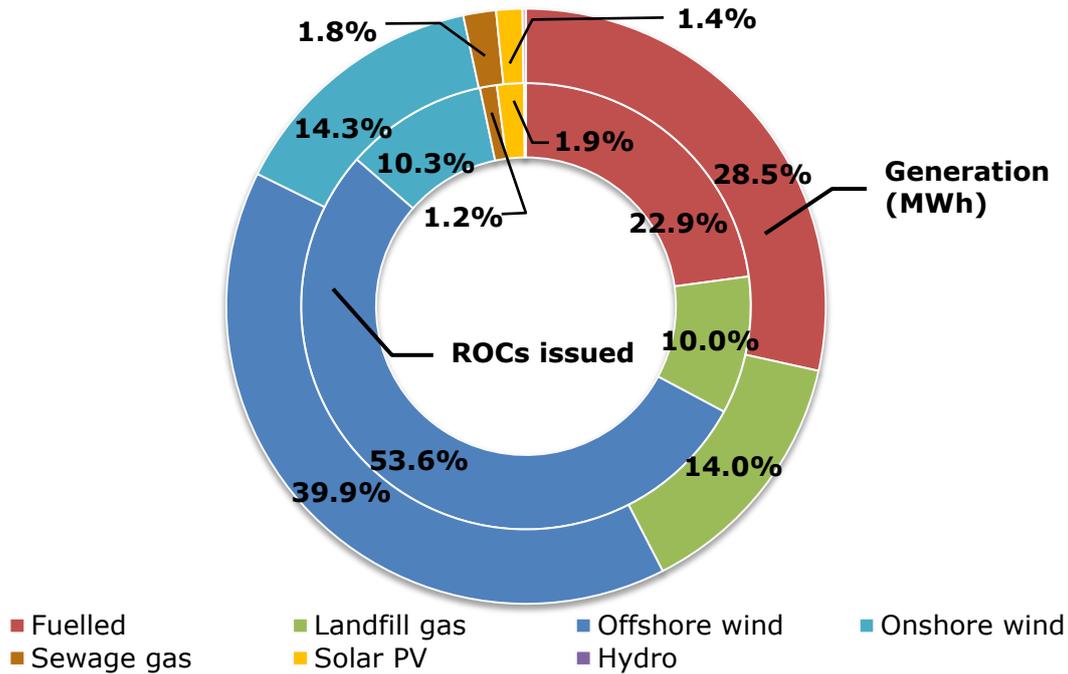


Other technologies are sewage gas, tidal power and wave power.

3.18 Most of the UK’s offshore wind capacity is in England. Therefore the vast majority of offshore wind generation is from stations in England, and they receive most of the ROCs¹⁸ (England has over 90% of the UK totals in both respects). Otherwise the situation in England compared with last year is similar to the UK as a whole, with small increases for offshore wind, onshore wind, fuelled and solar PV, and a reduction in the proportion of ROCs issued and generation for landfill gas. **Figure 17** summarises the technology split in England.

¹⁸ Though we accredited Gwynt y Mor offshore wind farm in Wales in 2013-14, it did not claim any ROCs.

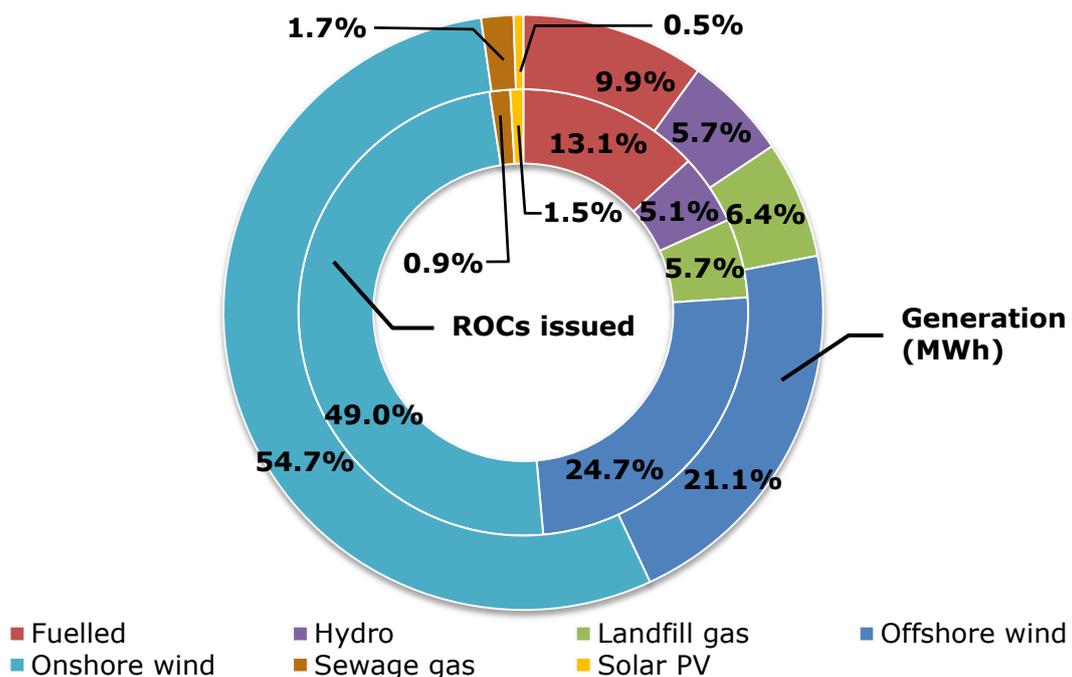
Figure 17: ROCs issued and generation by technology in 2013-14 (England)



Hydro stations received 0.1% of the ROCs issued in England and represented 0.2% of the renewable generation. These proportions are too small to be seen in the chart.

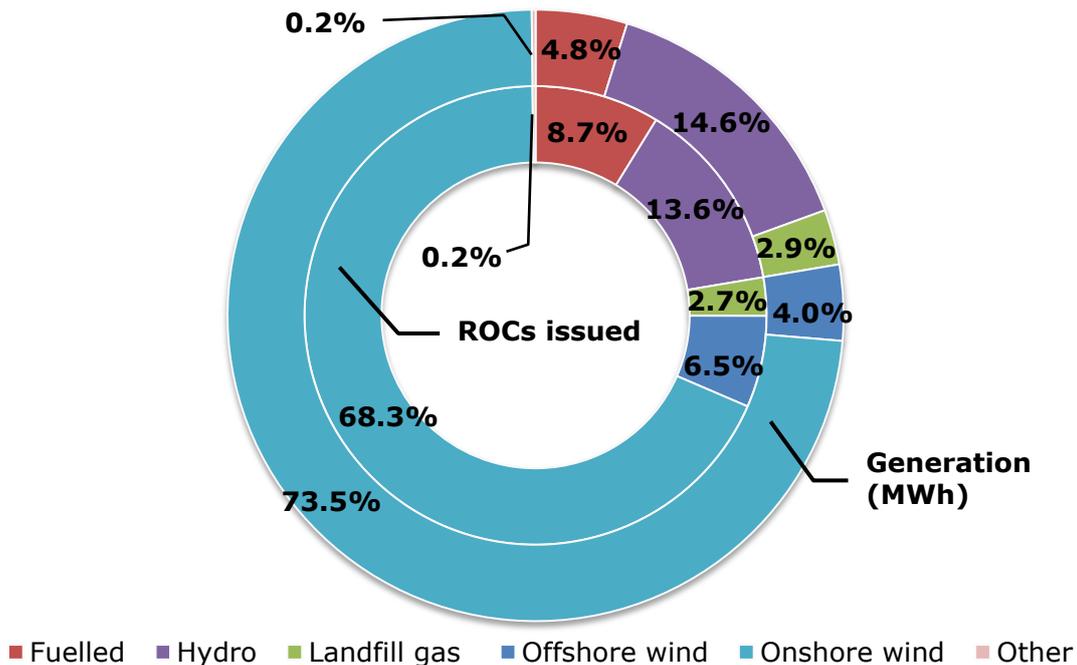
3.19 Onshore wind remains the dominant technology in Wales, and it had a greater share of the ROCs and generation in 2013-14 than it did last year. As well as the windy conditions over the winter, this is likely to be due to the extra 100 MW of onshore wind capacity we accredited in 2012-13. This increased Wales' onshore wind capacity by around 25%. Wales' technology breakdown is shown in **Figure 18**.

Figure 18: ROCs issued and generation by technology in 2013-14 (Wales)



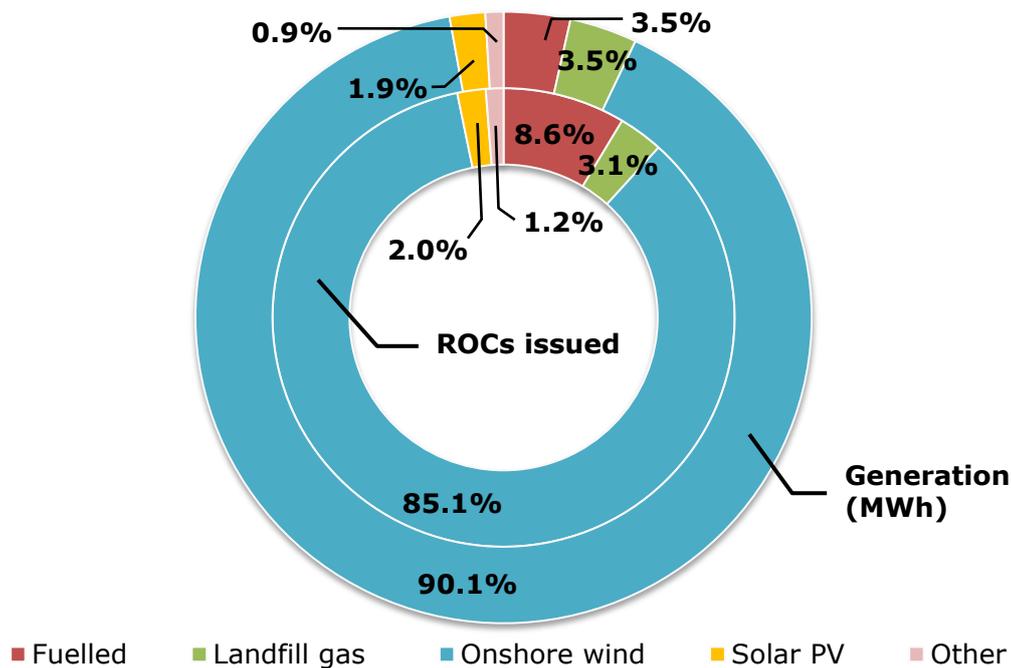
3.20 The share of renewable generation and ROCs issued in Scotland is summarised in **Figure 19**. More than 60% of the ROCs issued to, and generation from, UK onshore wind were to stations in Scotland. Consequently onshore wind is also the dominant technology within Scotland, with over two-thirds of the generation and ROCs issued. Indeed, onshore wind is even more dominant in Scotland than it was last year, especially as offshore wind and fuelled stations only contribute relatively small amounts there. The growth in solar PV elsewhere in the UK has not been seen in Scotland either; we only issued around 850 ROCs to Scottish solar PV stations and they generated about 400 MWh. Most of the UK’s hydro capacity is in Scotland though, reflected in the generation and ROC issue figures (over 90% of the UK totals).

Figure 19: ROCs issued and generation by technology in 2013-14 (Scotland)



Other technologies are sewage gas, solar PV, tidal power and wave power.

3.21 Renewable generation and ROCs issued to stations in Northern Ireland are summarised in **Figure 20**. Like last year, and to an even greater extent than in Scotland and Wales, onshore wind is the dominant technology in NI. There was also a large growth, relative to previous volumes, in solar PV. In 2013-14 we issued around 37,000 ROCs to solar PV stations in NI, which generated 30.4 GWh. This was driven by the large increase in the volumes of solar PV microgenerators in NI that we have accredited in the last couple of years, discussed in Chapter 2 (indeed, all of the ROCs we issued for solar PV generation in NI were to stations under 50 kW). For comparison, from 2007-08 to 2012-13 we issued around 12,200 ROCs to NI solar PV stations, with 12.2 GWh of generation.

Figure 20: ROCs issued and generation by technology in 2013-14 (Northern Ireland)

Other technologies are hydro and tidal power.

Revoked and retired ROCs

3.22 Sometimes we revoke ROCs if, for example, we find that the output data on which we issued ROCs is inaccurate. We may discover such inaccuracies through our own investigations or through audits of generating stations (see Chapter 6).

3.23 We cannot revoke ROCs if they have already been presented to us for compliance by a supplier. In this situation we will withhold an equivalent number of ROCs from the station in the future instead.¹⁹

3.24 We normally revoke a very small proportion of the ROCs we issue during an obligation period. This year we revoked 53,380 ROCs.

3.25 The registered holder of a ROC may voluntarily retire it on the Register at any time. Retired ROCs can no longer be used for compliance with the RO.

3.26 During 2013-14, 448 ROCs were retired by their holders.

Carbon emissions

3.27 The Department for Environment, Food and Rural Affairs (Defra) publishes conversion factors for greenhouse gas reporting on its website.²⁰ 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 transmission and distribution. From this, we can

¹⁹ Article 41A of the RO and ROS and article 37A of the NIRO (introduced in the 2010 RO Amendment Orders).

²⁰ <http://www.ukconversionfactorscarbonsmart.co.uk/LandingPage.aspx>

calculate a figure for the amount of GHG emissions saved from renewable generation under the scheme.

3.28 The GHG conversion factor for 2013-14 is 0.497 kgCO_{2e}/kWh²¹, marginally higher than last year's value of 0.493. When multiplied through by the 49.6 TWh of renewable generation under the RO, this gives an approximate saving of GHG emissions for the obligation period of 24.6 million tonnes CO_{2e}. This is an increase of 42.7% from last year's 17.3 million tonnes, in line with the rate of growth of renewable generation in the same period.

3.29 Our calculation of the cost of reducing carbon emissions due to the RO in 2013-14, derived from the value of the scheme, is in Chapter 5.

²¹ We reached this figure by adding the generation and transmission and distribution factors to reach overall values for UK electricity in 2013 and 2014 (0.48357 and 0.53748 kgCO_{2e}/kWh respectively). The value for the 2013-14 obligation period is 75% of the 2013 value plus 25% of the 2014 value.

4. Biomass sustainability

Chapter summary

In 2013-14 there was a significant increase in the amount of solid biomass that fuelled stations used for electricity generation. Stations sourced most of this additional biomass from outside of Great Britain and Ireland. At the same time, stations have been using lower amounts of energy crops each year since 2011-12, and reduced their use of bioliquid since 2012-13.

4.1 Every month operators report to us on sustainability criteria set out in legislation.²² These criteria are:

- The land criteria – whether the land from which the biomass was sourced (ie at the forest, farm or plantation) meets the requirements of the legislation.
- The life-cycle GHG emissions associated with the biomass. For biogas and solid biomass this is in grams of GHG per megajoule (MJ) of electricity. For bioliquids it is as a percentage emissions saving against the relevant fossil fuel comparator.

4.2 The information the operators need to report differs depending on the fuel state and in some cases the DNC of the generating station:

- All stations using bioliquid fuels must report land use and GHG information to us. We will not issue any ROCs if the operator has reported that the criteria have not been met or the information is unknown. They must also get independent verification of this information annually.
- Stations using solid biomass and biogas only need to report this information to us if the station has a DNC above 50 kW. The sustainability criteria for solid biomass and biogas are not linked to ROCs issued. Therefore we will issue ROCs regardless of whether or not the operator reports the criteria have been met. Operators were not required to verify their information annually for 2013-14.

4.3 All operators of generating stations with a DNC over 50kW must provide information annually on the sustainability of their biomass (except for biomass that is waste or wholly-derived from waste). This is known as annual profiling data, and includes information such as biomass type, mass/volume and country of origin.

4.4 The full set of sustainability information we received from operators in 2013-14 is in a separate dataset on our website.²³

Data considerations

4.5 RO legislation²⁴ states that the reported information must be provided to the best of an operator's knowledge and belief. This includes the annual profiling data as well as the monthly information on land use and GHG criteria for solid biomass and biogas.²⁵

²² More information on land and GHG criteria is in chapters 4 and 5 of our sustainability criteria guidance: <https://www.ofgem.gov.uk/publications-and-updates/renewables-obligation-sustainability-criteria-guidance-0>

²³ <https://www.ofgem.gov.uk/publications-and-updates/biomass-sustainability-dataset-2013-14>

²⁴ Article 54 of the RO and ROS 2009 Orders (as amended) and article 46 of the NIRO 2009 Order (as amended).

4.6 Stations using bioliquids are subject to an annual sustainability audit,²⁶ so the information they provide on the sustainability criteria has been independently verified. In some cases bioliquid sustainability information relating to these audit reports is yet to be finalised and is subject to change. Data from stations that have not provided a bioliquid audit report for 2013-14 is included in this chapter and the accompanying dataset.

4.7 Waste (and biomass derived from waste) is exempt from the requirement to report annual profiling data, so the profiling data presented in this chapter is not representative of all biomass used. But information from monthly reported data does represent all biomass used, including waste.

4.8 If an operator using solid biomass or biogas to generate electricity has reported 'unknown', or that the sustainability criteria have not been met, they must provide a reason for this. These reasons, along with any additional comments made by the operator, are in the accompanying sustainability dataset.

Annual profiling data

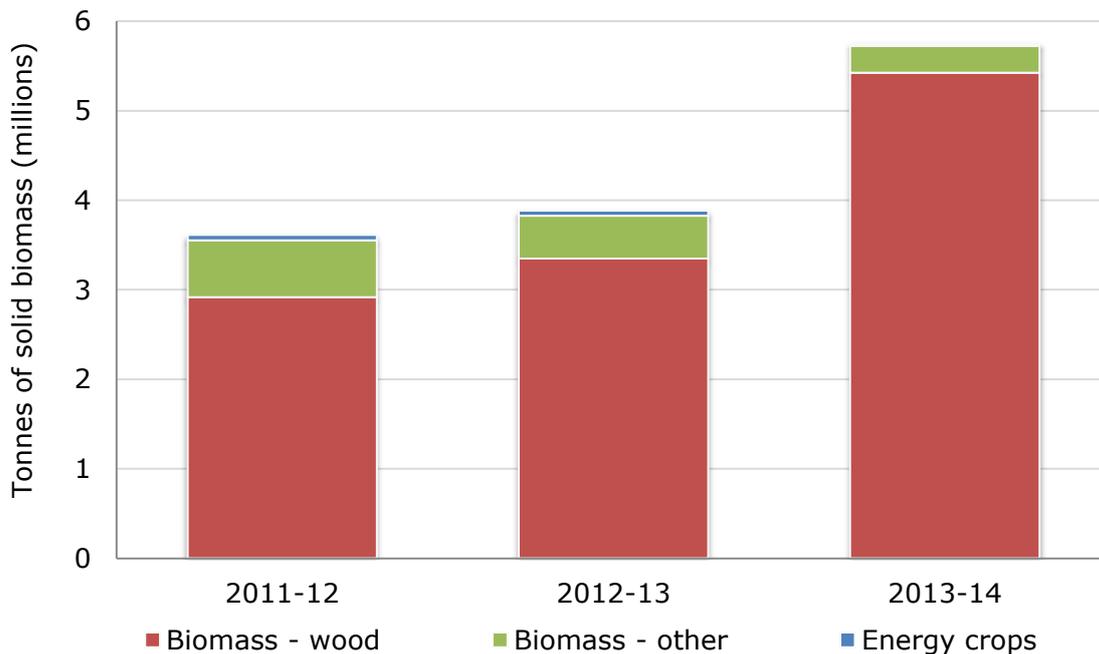
4.9 There was a significant fall this year in the quantity of bioliquid stations used to generate electricity. This decreased from 60.8 million litres²⁷ in 2012-13 to 41.9 million litres in 2013-14, a reduction of 31%. The decrease coincided with the introduction of the bioliquid cap in the 2013 RO Amendments (see 5.48).

4.10 The total quantity of solid biomass used increased, from 3.9 million tonnes in 2012-13 to 5.7 million tonnes in 2013-14. The increase was largely in the use of wood or wood-derived biomass (3.3 million tonnes in 2012-13 compared to 5.4 million tonnes in 2013-14, an increase of 62.1%). This is summarised in **Figure 21**.

²⁵ We have reviewed this data to ensure operators answered questions as required by legislation, but it has not been verified independently.

²⁶ This requirement for annual audit reports comes from article 54A in the RO and ROS and article 46A of the NIRO (as changed by the 2011 Amendment Orders).

²⁷ Operators often report the quantity of bioliquids they have used as a mass in kg or tonnes. For our calculations we convert the mass to a volume by using generic density values of 0.8 kg/litre for oils and 1 kg/litre for aqueous liquid.

Figure 21: Types of solid biomass and used from 2011-12 to 2013-14

Biomass – other includes peanut/peanut-derived, lignobond, palm kernel expeller, sunflower/sunflower-derived, cocoa husk residue, shea, oat (including oat derivatives) and straw.

4.11 Stations increased their use of energy crops from 2009-10 until 2011-12, when total usage peaked at just over 60,000 tonnes. By 2013-14, this decreased to around 26,000 tonnes – a reduction of 56% from the 2011-12 peak.²⁸ When the RO Amendment Order came into force in April 2013, it introduced a number of changes that reduced the incentive for stations to use energy crops.²⁹ All stations that used energy crops sourced them from GB and Ireland.

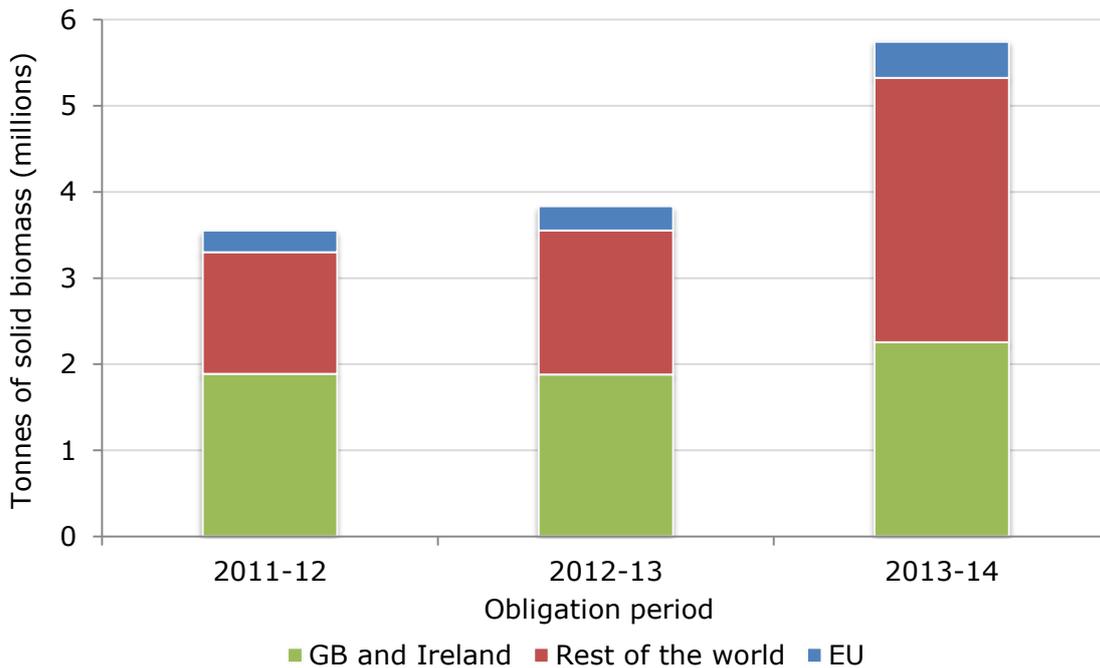
4.12 Stations used approximately 21.5 million m³ of biogas for electricity generation in 2013-14, compared to 7.2 million m³ in 2012-13. However, as only four biogas reports included a quantity in 2012-13 compared to 29 in 2013-14, this increase is mainly a result of more complete data rather than increased biogas use. Almost 100% of the feedstock for producing biogas in 2013-14 was sourced from GB and Ireland.

4.13 Sources of solid biomass over the last three obligation periods are shown in **Figure 22**. It shows there was a 50% increase in the total volume of solid biomass used in 2013-14 compared with 2012-13. Stations sourced 79% more biomass from overseas in 2013-14 compared to 2012-13. More than half of the total solid biomass (~3 million tonnes) came from the USA and Canada. In addition, the quantity of solid biomass sourced from GB and Ireland increased by 20%. All stations that used energy crops sourced them from GB and Ireland.

²⁸ Some stations have not provided the necessary evidence to demonstrate that their energy crops fully meet the criteria, and have instead reported these fuels as biomass. The full dataset contains details.

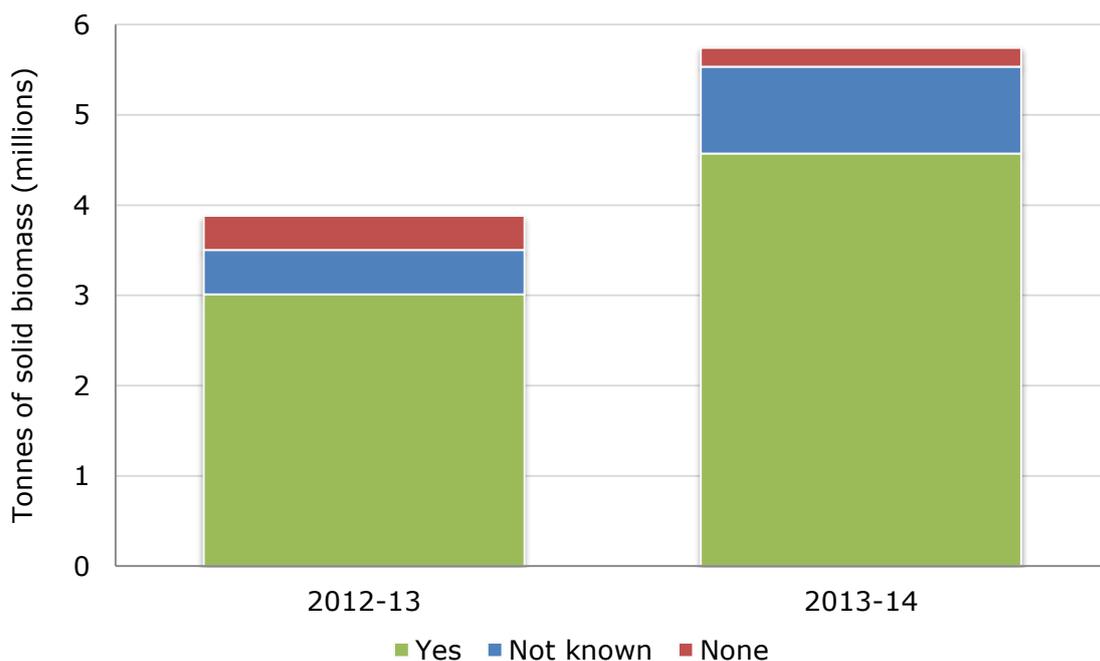
²⁹ Further information on energy crops is in chapter 2 and appendices 3 and 4 of our fuel measurement and sampling guidance: <https://www.ofgem.gov.uk/publications-and-updates/renewables-obligation-fuel-measurement-and-sampling-guidance-0>

Figure 22: Source of solid biomass used from 2011-12 to 2013-14



4.14 The total mass of solid biomass fuels sourced using recognised environmental quality assurance schemes in 2012-13 and 2013-14 is shown in **Figure 23**. Operators may make use of voluntary schemes as one form of evidence to demonstrate compliance with the RO sustainability criteria. Many of the schemes encourage certain standards of environmental and social sustainability. The proportion of fuel covered by such schemes has remained relatively stable, increasing from 78% to 80%. The dataset that accompanies this chapter provides full details on all environmental quality assurance schemes reported.

Figure 23: Solid biomass sourced using a recognised environmental quality assurance scheme



4.15 Of the 89 bioliquid fuels, 26 are listed as being from a recognised scheme, while 23 reported unknown and 40 reported none.

Monthly data

4.16 The monthly data that generating stations submit to us includes details of whether the biomass used to generate the electricity has met, or is exempt from, the land and GHG criteria. A station generating electricity from solid biomass or biogas can also report 'unknown' against these criteria and still be eligible for ROCs. Where we refer to a 'fuel' in this chapter in the context of monthly data, this refers to a single reported instance of monthly fuel consumption. A station using one type of fuel for a full year therefore reports twelve 'fuels' for the purposes of monthly data.

4.17 In 2013-14 stations used 652 bioliquid fuels for generation.³⁰ Of these, 488 (75%) were exempt from meeting the land criteria, and none were exempt from meeting the GHG criteria. There were nine bioliquid fuels that stations reported as unknown for land use and GHG criteria, therefore we issued no ROCs for generation from these fuels.

4.18 When an operator reports the GHG emissions of a bioliquid, they must report it as a saving against the fossil fuel comparator. The current threshold for bioliquid stations is 35%. The average GHG emissions saving from bioliquids reported to us in 2013-2014 was 86.2%, while the lowest was 59.1%³¹ - well above the threshold.

4.19 Stations used 687 solid fuels for generation in 2013-14. Of these, 295 met the land criteria, 265 were exempt and 127 were unknown. There were 275 of these fuels that met the GHG criteria, whilst 266 were exempt and the remaining 150 were reported as unknown.

4.20 For solid fuels with reported GHG emissions, the emissions threshold is 79.2 grams of GHG per MJ of electricity. The average value reported by operators was 28.5 grams and the highest reported was 62.8 grams - again well within the threshold.

4.21 Stations used 600 gaseous fuels for generation in 2013-14. Of these, 315 were exempt from meeting the land criteria, 201 were unknown or not applicable and the remaining 84 met the land criteria. Of these, operators reported values on the GHG criteria for 21 of these fuels, whilst 330 were exempt and the remaining 249 unknown or not applicable. The average GHG value reported for gaseous fuels was 36.5 grams of GHG per MJ of electricity, though as so few of these fuels included a reported GHG figure it is unlikely that this average is representative of the picture across all gaseous fuels.

4.22 As sustainability criteria are currently not linked to whether we issue ROCs for solid biomass and biogas fuels, the data is less complete than for bioliquids. However we anticipate that in the future ROC issue will be linked to sustainability criteria and so a lot of stations have already been improving their sustainability data collection.

Review of annual audit reports

4.23 If an operator uses bioliquids, then to be eligible for ROCs they must submit an annual audit report from an independent auditor. The report must be undertaken and written to the International Standard on Assurance Engagements (ISAE) 3000 standard. If a generator does not submit an audit report to us, or if the audit report concludes that we have issued ROCs for

³⁰ Some certificate claims have multiple fuel contributions for the same generation month.

³¹ Excluding fuels which did not meet the threshold and so received no ROCs.

generation from unsustainable bioliquids, then the legislation provides actions we can take. These include postponing, revoking or withholding ROCs (although we cannot revoke ROCs if they have already been presented for compliance by a supplier - see 3.23).

4.24 The 2013-14 obligation period is the third year we have reviewed the independent audit reports relating to bioliquid generation. Operators presented 37 audit reports to us in 2013-14. We have reviewed these reports and agreed with the auditor's findings that all bioliquids either met, or were correctly exempt from meeting, the land and GHG criteria. The number of reports is down from 45 that we reviewed in 2012-13. For many smaller stations, the revenue received from the sale of ROCs does not merit the cost of the audit and so they have stopped claiming ROCs on generation from bioliquids.

5. Compliance by licensed suppliers

Chapter summary

All licensed suppliers complied with their obligations in 2013-14. They presented 60.8 million ROCs for compliance, the largest ever proportion of the obligation met through ROCs (98.2%). This led to the smallest amounts we have ever redistributed to suppliers from the buy-out and late payment funds; £42.4 million. Each ROC was worth £42.72 and the value of the scheme was £2.6 billion.

5.1 Under the RO, every supplier must demonstrate that it sources a proportion of the electricity it supplies to UK customers from renewable sources. This proportion, or obligation level, is set by the secretary of state and published by the Department of Energy and Climate Change (DECC) six months before each obligation period begins.³²

5.2 In 2013-14 suppliers in England, Wales and Scotland had to present 0.206 ROCs per MWh of electricity supplied to customers, and suppliers in Northern Ireland needed 0.097 ROCs per MWh. DECC announced these obligation levels on 28 September 2012.³³

5.3 A supplier can meet its obligation by presenting ROCs, making a buy-out payment for each ROC it cannot present, or through a combination of both.

5.4 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 average Retail Prices Index (RPI)³⁴ from the previous calendar year. For 2013-14 we announced a price of £42.02 per ROC³⁵ – an increase of 3.2% from the 2012-13 value of £40.71.

5.5 The total obligation across all suppliers is the obligation level (ROCs per MWh) multiplied by the total amount of electricity supplied (MWh). In 2013-14 the total supply was 296.5 TWh to customers in Great Britain, and 8.0 TWh in Northern Ireland. Using the obligation levels in 5.2, this gave a total obligation of 61.9 million ROCs. This is an increase of 12.9 million (26.5%) from the total obligation of 48.9 million ROCs in 2012-13.

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 by 31 October, by either:
 - Presenting ROCs to us by 1 September

³² Article 12 of the Orders defines these calculations to set the obligation.

³³ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/65530/6527-calculating-renewables-obligation-2013-14.pdf

³⁴ RPI from the Office for National Statistics: <http://www.ons.gov.uk>

³⁵ <https://www.ofgem.gov.uk/publications-and-updates/renewables-obligation-buy-out-price-and-mutualisation-ceiling-2013-14>

- 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 Bank of England base rate.³⁶

Suppliers can meet their obligations through any of these methods, or through a combination of them.

5.7 Some licensed suppliers supplied no electricity in 2013-14 and so did not have an obligation. Therefore suppliers with an obligation under the RO are not the complete group of licensed suppliers in the UK. A list of electricity supply licences in Great Britain is on our Licensing website,³⁷ the equivalent list for Northern Ireland is on the Utility Regulator Northern Ireland (UR)'s website.³⁸

Validation and submission of supply volumes

5.8 Appendix 5 of our document *Renewables Obligation: Guidance for Licensed Electricity Suppliers*³⁹ 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 Elexon⁴⁰ for supply in Great Britain, and from Northern Ireland Electricity Transmission and Distribution (NIE)⁴¹ for supply in Northern Ireland.

5.9 Last year we obtained data from Elexon and NIE to validate supply volumes after the suppliers had submitted them. Where we identified a material difference between the figure presented by a supplier and that recorded by Elexon or NIE, we asked the supplier for an explanation and to revise its figures if appropriate.

5.10 This year we took this process a step further. We proposed to the suppliers that we would obtain the Elexon and NIE reports upfront, *before* the suppliers submitted their figures. We would then send extracts of these reports to each supplier, which would indicate their supply volumes. Suppliers could then accept the figures, or explain any variance to us before submitting their figures. We called this the central reporting approach.

5.11 We also took the opportunity to update Appendix 5 of our supplier guidance to include greater clarity on the definition of supply, additional guidance for reporting supply to customers directly connected to the transmission network, and more prescriptive guidance for reporting supply in Northern Ireland. We published a revised draft of Appendix 5 for public comment on 3 April 2014, alongside a proposal for the central reporting approach.

5.12 The comments we received on these proposals were positive. So we published the new version of our supplier guidance on 27 May 2014.³⁹ We also implemented the central reporting approach in time for the submission of final supply volumes, by sending Elexon/NIE report extracts to the suppliers on 12 June 2014.

³⁶ This is defined in article 44 of the RO and ROS and article 41 of the NIRO.

³⁷ <https://epr.ofgem.gov.uk/Document>

³⁸ <http://www.uregni.gov.uk/electricity/licences/>

³⁹ <https://www.ofgem.gov.uk/publications-and-updates/renewables-obligation-guidance-licensed-electricity-suppliers-may-2014>

⁴⁰ <http://www.elexon.co.uk/>

⁴¹ <http://www.nie.co.uk/>

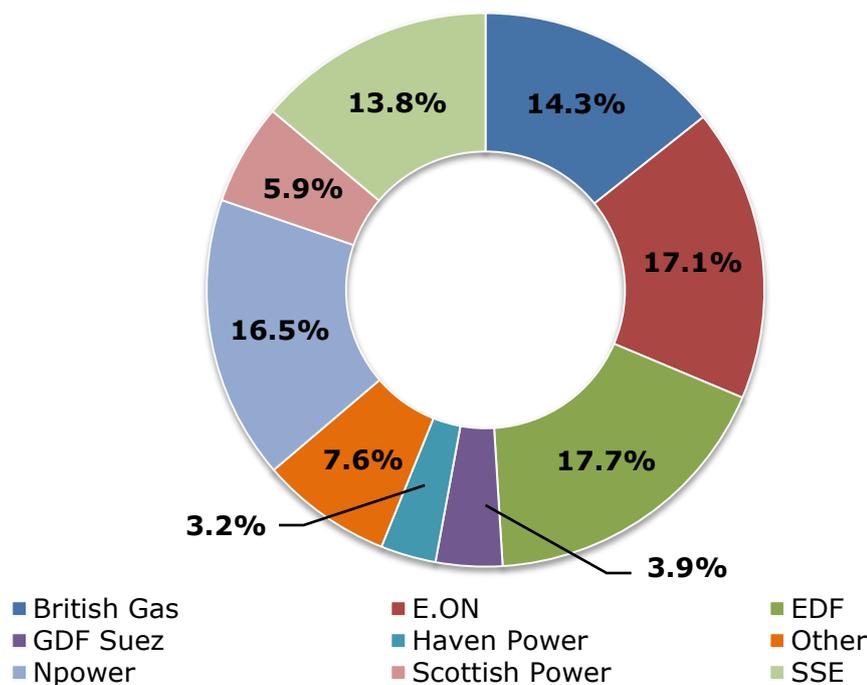
5.13 Including those who revised their initial figures when we found they were incorrect, eight licensees⁴² (out of 58 who had obligations) submitted their final supply volumes after the 1 July deadline. Appendix 4 contains their names. There were also six licensees who submitted their estimated figures to us after the 1 June deadline. They are also listed in Appendix 4.

Share of obligation across the schemes

5.14 **Figure 24, Figure 25** and **Figure 26** show how each obligation was split between supplier groups.⁴³ In these charts each supplier group with a share above 2% is shown individually, and those suppliers with a share below 2% are grouped together under 'Other'.

5.15 In England and Wales, shown in Figure 24, the big six suppliers (British Gas, E.ON, EDF, Npower, Scottish Power and SSE) shared 85.3% of the obligation between them. This has reduced from 87.5% last year. Individually each of the big six has a slightly lower share than last year, other than Scottish Power. Haven Power now has a large enough share to appear on its own in this chart, having been included under other suppliers last year.

Figure 24: Proportion of obligation under the RO (England and Wales) by supplier group

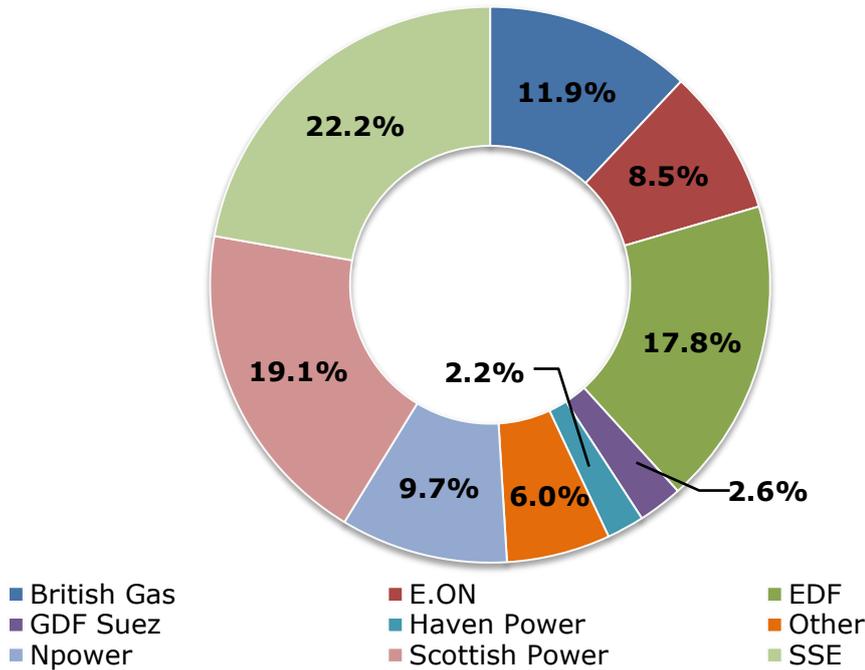


5.16 In Scotland, shown in Figure 25, the big six shared 89.3% of the obligation. Again this is slightly lower than last year, down from 91%. Notably SSE and Scottish Power both had a smaller share compared with last year, down by 3% and 8.5% (of the Scottish obligation) respectively. Conversely EDF's share grew by 9.8%, from 8.0% last year.

⁴² A licensee is an entity that supplies electricity and incurs an 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, Wales and Scotland.

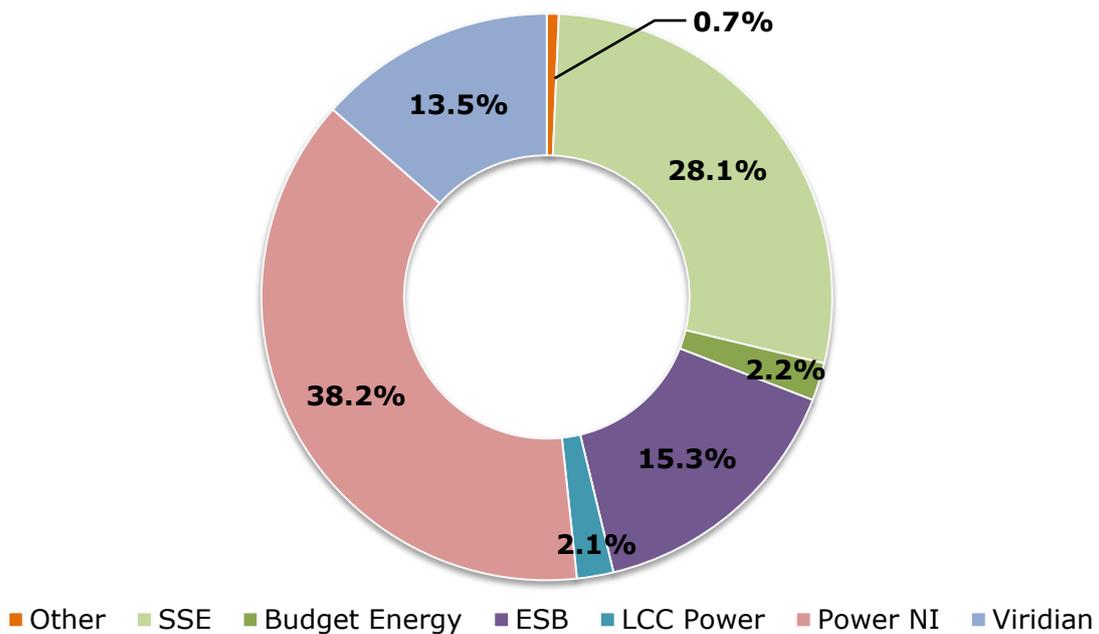
⁴³ A list of supplier groups and their licences is in Appendix 4.

Figure 25: Proportion of obligation under the ROS (Scotland) by supplier group



5.17 The Northern Ireland market comprises a group of suppliers which is almost completely different from that in Great Britain, other than SSE which owns the SSE Airtricity licence. Compared with last year, Budget Energy and LCC Power now each have more than 2% of the obligation, having been grouped with other suppliers in 2012-13. Power NI and ESB have a slightly lower share than last year, SSE a slightly bigger share and Viridian’s share is about the same. The obligation share in NI is shown in Figure 26.

Figure 26: Proportion of obligation under the NIRO (Northern Ireland) by supplier group



ROCs presented and payments made by suppliers

5.18 Suppliers had a total of 100 obligations across the three Orders. To meet their obligations, suppliers have the choice of presenting ROCs, making payments, or a combination of both. Across the schemes:

- Suppliers met 53 of the 100 obligations by presenting the full amount of ROCs. Of these 25 were on the RO, 25 on the ROS and three on the NIRO.
- Suppliers met 27 obligations entirely through payments. Of these 14 were on the RO, ten were on the ROS and three on the NIRO.
- Suppliers met 20 obligations through a combination of payments and ROCs. Of these 11 were on the RO, seven on the ROS and two on the NIRO.

ROCs presented

5.19 Across the obligations, suppliers presented 60.8 million ROCs to us for compliance in 2013-14. This is an increase of 16 million ROCs, or 35.7%, on the 44.8 million they presented in 2012-13.

5.20 Suppliers met 98.2% of the total UK obligation of 61.9 million ROCs by presenting ROCs to us, and so only met 1.8% by making payments. This is the highest ever proportion of the obligation met by presenting ROCs, and is a significant increase even on last year's 91.5% (previously the highest proportion). This is a result of the large number of ROCs we issued, described in Chapter 3.

5.21 There were 17 supplier groups who did not present any ROCs towards their obligations, representing 0.5% of the UK obligation. This is a lower proportion than we have seen previously. Furthermore, there were 13 suppliers who presented ROCs for the first time in 2013-14. Four of these were new entrants to the supply market, while the other nine had previously met their obligations entirely through payments. This is probably because of the larger-than-usual number of ROCs available in the market.

5.22 Of the 62.8 million ROCs we issued during 2013-14, around 2.4 million were not presented for compliance by suppliers. These will be available for suppliers to present next year, and are known as banked ROCs. After 2014-15 they cannot be presented.⁴⁴ This is by far the highest total of banked ROCs that has ever been carried over into the next obligation period since the scheme began. Again this is due to the large number of ROCs we issued in 2013-14.

5.23 **Table 5** summarises the obligations and ROCs presented by suppliers across the schemes.

⁴⁴ ROCs can only be carried forward for one obligation period as stated in article 13 of the Orders. This is why, in any obligation period, the number of ROCs presented for compliance is unlikely to match the number we have issued.

Table 5: ROCs presented towards each UK obligation in 2013-14

	RO	ROS	NIRO	UK total
Electricity supplied (MWh)	268,827,109	27,680,345	8,016,885	304,524,339
Obligation (ROCs)	55,378,383	5,702,153	777,638	61,858,174
ROCs presented	54,596,449	5,431,769	729,032	60,757,250
No. of licensees with an obligation	50	42	8	100
Percentage of obligation met by ROCs	98.6%	95.3%	93.7%	98.2%

Payments made

5.24 Suppliers who chose to make buy-out payments paid a total of £40.1 million into the buy-out funds by the legislative deadline of 31 August.

5.25 Across the schemes, five suppliers covering eight obligations⁴⁵ did not meet the deadline for making buy-out payments. Instead they complied with their obligations by making late payments, totalling £6.2 million. All late payments the suppliers made were for obligations in Great Britain. There were no late payments for Northern Ireland. All of these suppliers made their late payments by the legislative deadline of 31 October.

5.26 **Table 6** summarises the payments suppliers made towards each UK obligation in 2013-14.⁴⁶ Full tables of how all suppliers met their obligations are in Appendix 4.

⁴⁵ Three of the suppliers met their obligations through late payments in both England and Wales **and** Scotland; the remaining GB suppliers had to make late payments towards their England and Wales obligations only.

⁴⁶ For previous obligation periods see the relevant RO annual reports on our website.

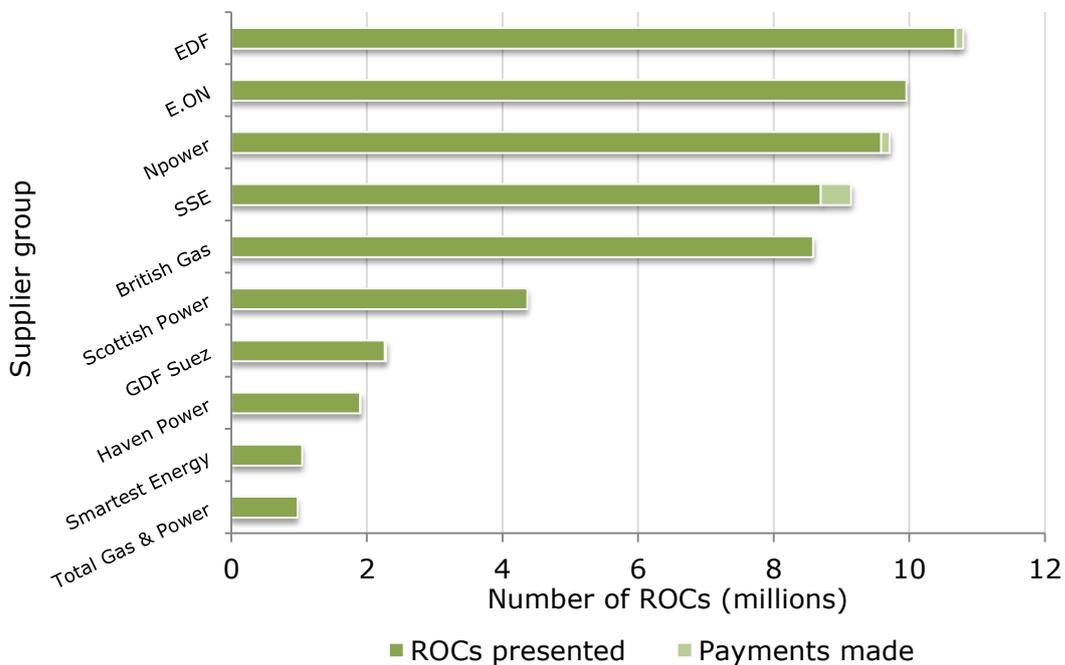
Table 6: Payments made towards each UK obligation in 2013-14

	RO	ROS	NIRO	UK total
Buy-out payments made	£26,713,829.98	£11,359,812.86	£2,042,424.12	£40,116,066.96
Late payments made	£6,168,455.55	£1,735.00	£0.00	£6,170,190.55

Compliance summary and historical trends

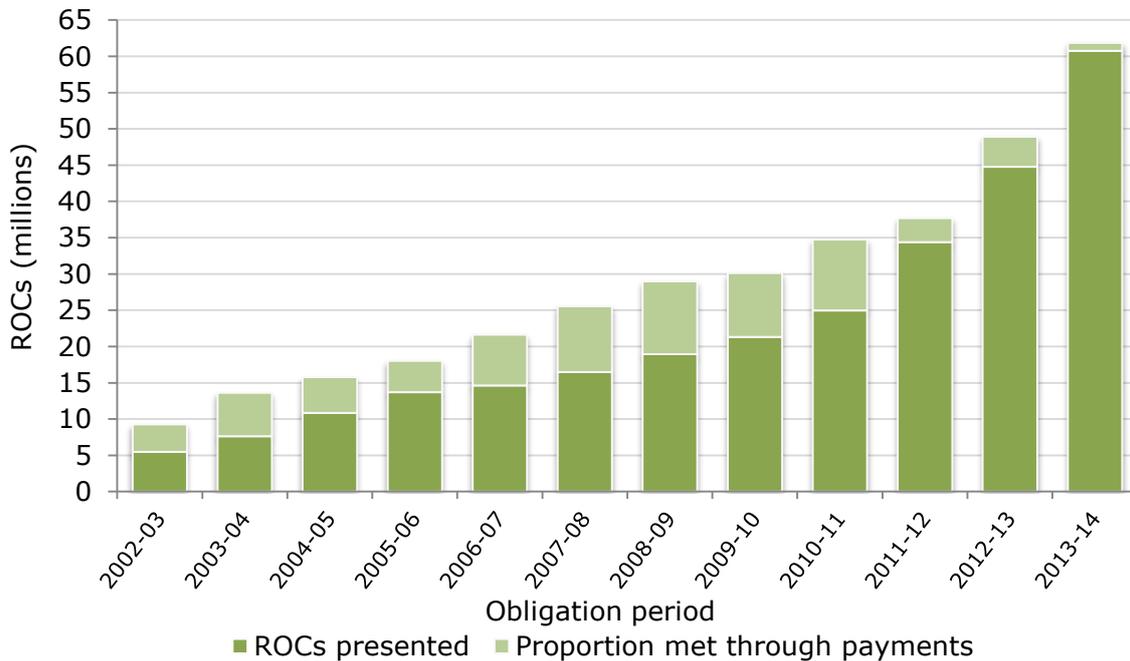
5.27 **Figure 27** shows how the UK’s ten largest supplier groups met their obligations, ie the proportions of ROCs presented and payments made by each. The proportions met through ROCs are in dark green, the proportions of payments in light green.

Figure 27: How the ten largest supplier groups met their obligations



Here the figures shown are the total obligations across all licenses owned by the supplier groups.

5.28 **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 lighter green sections in the columns represent the proportion of the obligation met through payments each year. The proportion of the obligation met through ROCs in 2013-14 was a marked increase even over the two previous obligation periods, which themselves were both over 90%.

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

5.29 We redistribute the buy-out and late payment funds to suppliers using the single recycling mechanism. We do this by paying out the aggregate of the buy-out funds across the three obligations to suppliers, in proportion to the amount of ROCs each supplier presented across the three schemes. For example, a supplier who presents 3% of the total ROCs across the three obligations will get back 3% of the amounts we redistribute from the buy-out and late payment funds. This is the case regardless of where a supplier had obligations, so a supplier who only has an obligation in England and Wales will still receive part of the Scotland and Northern Ireland payment funds.

5.30 We redistributed £36.2 million from the buy-out funds this year. We withdrew the £3.9 million scheme administration costs described in 1.8, and accounted for interest accrued on buy-out payments while in our accounts, before making the redistribution payments. We made these payments on 14 October 2014, in advance of the legislative deadline of 1 November.

5.31 We redistributed £6.2 million in late payments, on the same basis as the buy-out funds (though without the withdrawal of administration costs) on 13 November 2014. This was well in advance of the legislative deadline of 1 January 2015.

5.32 From Table 6, we collected £1,735 in late payments towards obligations in Scotland. However we did not redistribute this money as legislation requires⁴⁷ that we will not redistribute any late payment fund if it totals less than £50,000. This money will be added to next year's ROS buy-out fund instead.

5.33 **Table 7** summarises the redistribution payments we made for the 2013-14 obligation period. Full tables of redistribution payments are in Appendix 4.

⁴⁷ Article 46(4) (b) of the ROS 2009.

Table 7: Summary of redistribution payments for 2013-14

	RO	ROS	NIRO	UK total
Buy-out payments	£24,106,873	£10,251,167	£1,843,148	£36,201,188
Late payments	£6,171,656	£0	£0	£6,171,656
Totals	£30,278,529	£10,251,167	£1,843,148	£42,372,844

5.34 The combined sum we redistributed to suppliers from the buy-out and late payment funds was approximately £42.4 million. As suppliers presented 60.8 million ROCs, this means the recycle value of a ROC for 2013-14 – the amount suppliers received back for each ROC they presented – was £0.70. When added to the buy-out price of £42.02, the total worth of a ROC for this obligation period was £42.72.

5.35 The amount we redistributed and the recycle value were both by far the lowest since the start of the scheme. This is a consequence of the large number of ROCs we issued, and that suppliers presented to us for compliance, which led to a small buy-out fund.

5.36 **Table 8** summarises the ROC recycle value and support per MWh supplied since 2008-09.

Table 8: Determination of ROC recycle value since 2008-09

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
Buy-out and late payments redistributed	£352,651,576	£323,668,318	£358,308,373	£123,116,772	£164,420,029	£42,372,844
ROCs presented	18,948,878	21,337,205	24,969,364	34,404,733	44,773,499	60,757,250
Recycle value per ROC	£18.61	£15.17	£14.35	£3.58	£3.67	£0.70
Worth of a ROC	£54.37	£52.36	£51.34	£42.27	£44.38	£42.72
Average ROCs issued/MWh	1.00	1.04	1.07	1.12	1.27	1.27
Support per MWh supplied	£54.37	£54.45	£54.93	£47.34	£56.36	£54.25

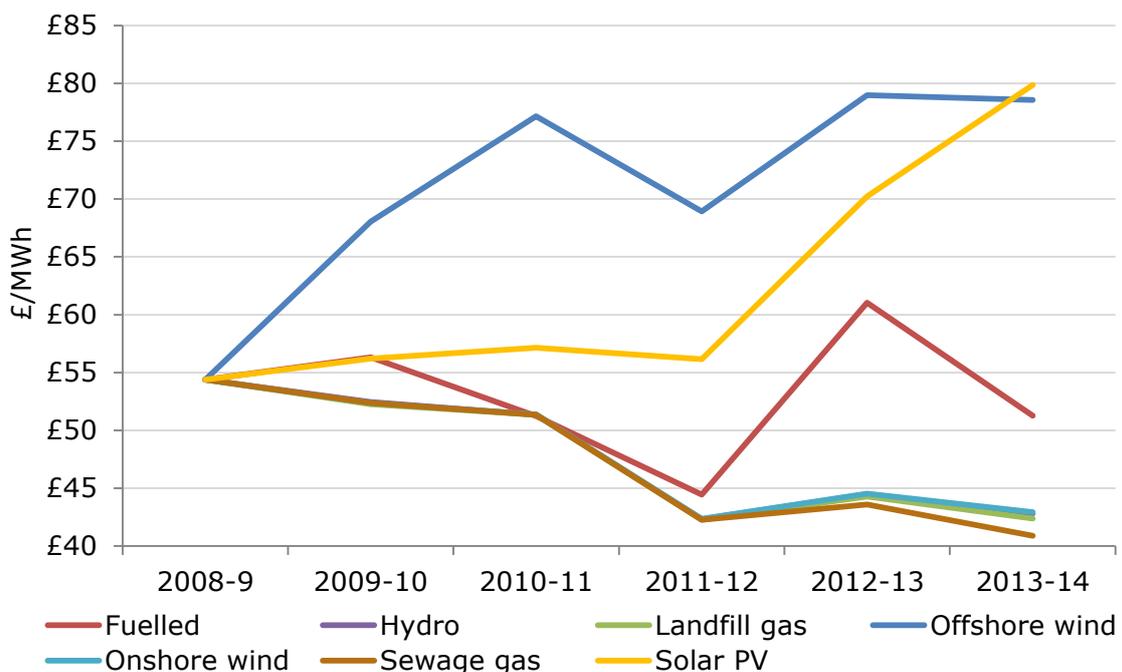
5.37 The total value of the scheme in an obligation period is the worth of a ROC multiplied by the number of ROCs presented for compliance by suppliers. For 2013-14, suppliers presented 60.8 million ROCs each worth £42.72, giving a scheme value of £2.6 billion.

5.38 The average number of ROCs issued per MWh (from Table 1) multiplied by the worth of a ROC gives the support (in £) per MWh supplied for an obligation period. These are shown in the bottom row of Table 8. This year the value has decreased to £54.25 from £56.36 last year.

As discussed in 3.7, the number of ROCs issued per MWh was unchanged from 2012-13 to 2013-14, while the worth of a ROC is lower for the reasons described in this chapter. Therefore the support per MWh went down.

5.39 The support in £ per MWh can also be broken down by technology, as in **Figure 29**. The chart begins in 2008-09, before banding, when all technologies received 1 ROC per MWh generated. In the years since, the support for hydro, sewage gas, landfill gas and onshore wind has steadily decreased. This was initially the case for fuelled stations as well, though Tilbury Power Station's biomass conversion in late 2011 (for which it received 1.5 ROCs per MWh) pushed the support level up for 2012-13, before falling back down again in 2013-14 after Tilbury closed. The two technologies for which the support level has generally increased are offshore wind and solar PV. This is due to the large increases in the capacity of each we have accredited in recent years, as well as the fact that most of this capacity has received more than 1 ROC per MWh. Another interesting feature is the dip in support for all technologies from 2010-11 to 2011-12. As the number of ROCs per MWh for each technology remained the same or increased in the same period, this was instead because of the sharp drop in the worth of a ROC. This is clear from Table 8. This effect is also visible to a lesser extent from 2012-13 to 2013-14, though most technologies also saw no growth in ROCs received per MWh, other than offshore wind and (in particular) solar PV.

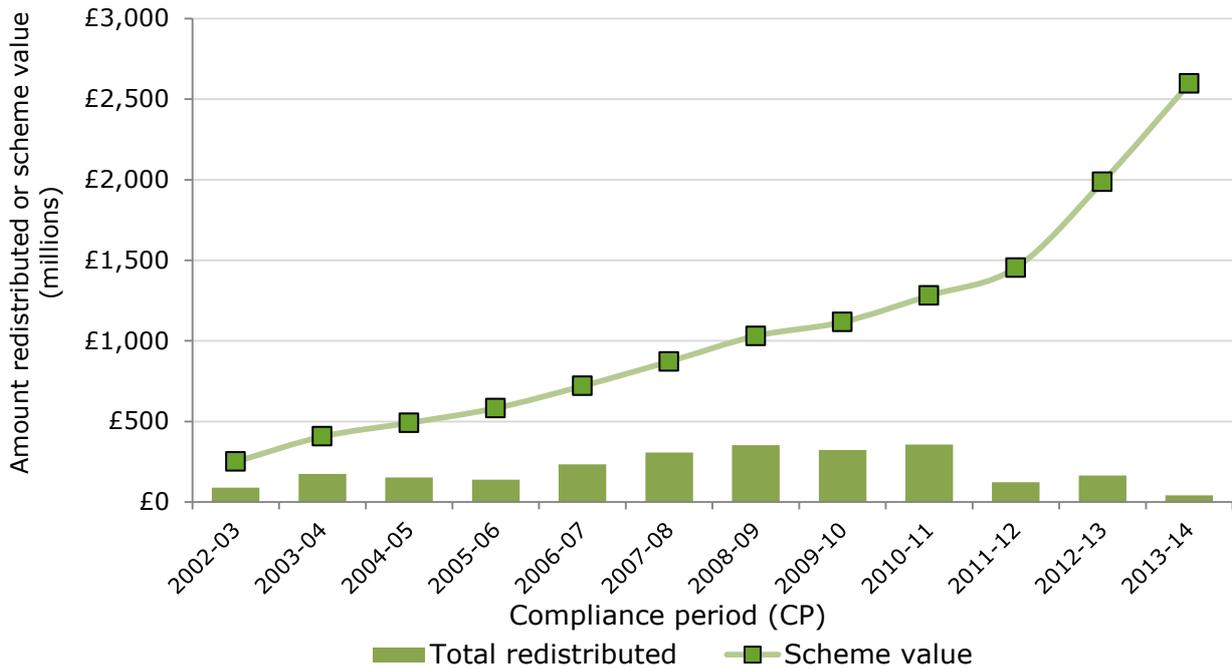
Figure 29: Support per MWh for each technology since 2008-09



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

5.40 **Figure 30** shows the amounts we have redistributed each year, and the growth in value of the scheme, since its introduction in 2002. Most notable here are the accelerated growth in the value of the scheme since 2011-12 and the small amount redistributed in 2013-14, relative to earlier obligation periods.

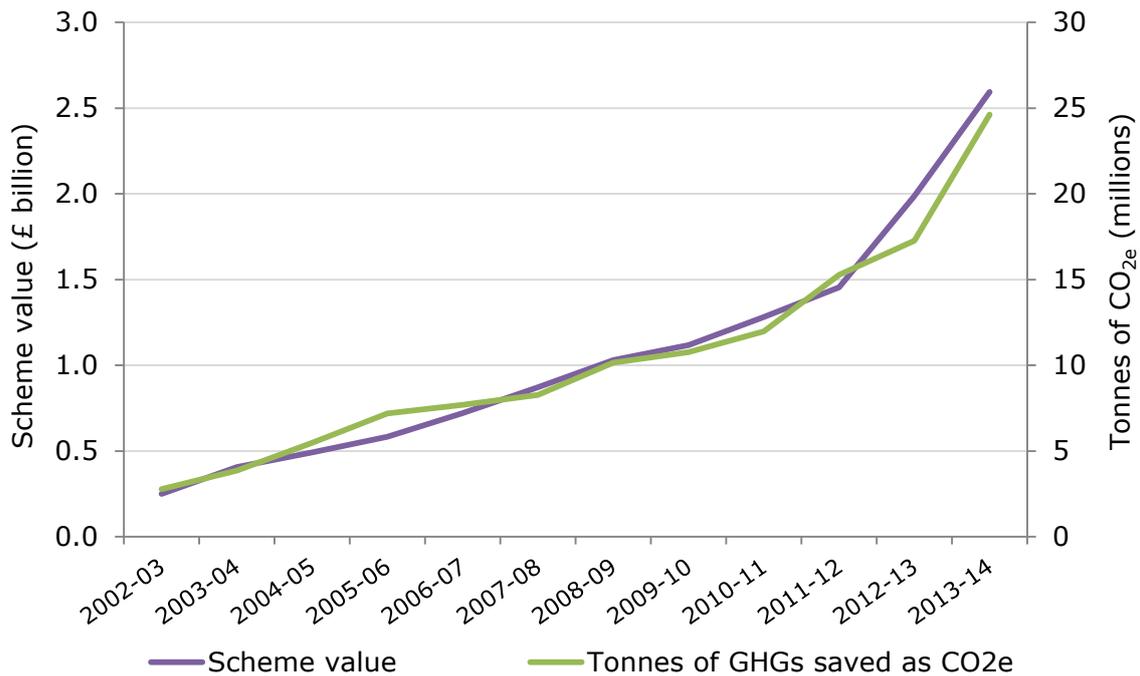
Figure 30: Total payments redistributed to suppliers and scheme value since 2002-03



Carbon emissions

5.41 Using the scheme value of £2.6 billion and the estimated GHG emissions saved under the scheme of 24.6 million tonnes (as explained in 3.28), the cost of GHG emissions saved in 2013-14 was £105.38 per tonne (CO_{2e}). This is around £10 per tonne lower than last year, as the amount of CO_{2e} saved increased more sharply than the value of the scheme.

5.42 We have used the methodology outlined from 3.27 to 3.28, 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

5.43 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 legislation⁴⁸ is designed to account for this. Mutualisation is triggered above a certain amount of shortfall, known as a relevant shortfall.⁴⁹ Mutualisation does not apply in Northern Ireland.

5.44 If mutualisation is triggered by a relevant shortfall, 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 each year before the start of the obligation period. We adjust this in the same way as the buy-out price, in line with the average RPI from the previous calendar year.

5.45 The mutualisation ceilings for 2013-14 were approximately £253.1 million in England and Wales and £25.3 million in Scotland. We published these in February 2013.⁵⁰

5.46 Mutualisation payments are redistributed to suppliers on the same basis as the buy-out and late payment funds, using the single recycling mechanism. Though mutualisation does not apply in Northern Ireland, NI suppliers will receive a share of any mutualisation funds from the RO and ROS.

5.47 Mutualisation was not triggered in 2013-14, nor in any other obligation period to date.

⁴⁸ Mutualisation is described in articles 48 – 52 of the RO and ROS 2009.

⁴⁹ Schedules 3 of the RO and ROS Orders specify the amount of relevant shortfall for obligation periods up to 2015-16.

⁵⁰ <https://www.ofgem.gov.uk/publications-and-updates/renewables-obligation-buy-out-price-and-mutualisation-ceiling-2013-14>

Bioliqid ROCs

5.48 The 2013 RO Amendments introduced⁵¹ a cap on the amount of ROCs from electricity generated from bioliqid that suppliers can present towards their obligations. This cap limits suppliers to meeting 4% of an obligation using bioliqid ROCs that qualify under the cap. There are some ROCs that we issue for generation from bioliquids, but are exempt from the cap. Details of the exemptions are in section 4.5 of our supplier guidance document.³⁹

5.49 The 2013-14 obligation period was the first to which the bioliqid cap applied. Across the UK obligations, there were three suppliers who presented qualifying bioliqid ROCs. They presented 143,498 between them, 0.23% of the total obligation of 61.9 million. These ROCs came from five different stations. We issued around 150,000 qualifying bioliqid ROCs in 2013-14, so suppliers will present the remaining ~7,000 next year as banked ROCs.

5.50 Using ROC codes on the Register, we can identify ROCs which are issued for generation from bioliquids, but are exempt from the bioliqid cap. We issued around 31,000 of these in 2013-14, of which suppliers presented 21,011 to us for compliance.

⁵¹ The bioliqid cap was introduced in the 2013 amendments which apply to article 13 of the 2009 Orders.

6. Audits under the RO

Chapter summary

We continued our programme of technical audits of generators in 2013-14. Our authorised representatives carried out 26 audits across a range of technology types, including three new enhanced fuel audits. Similarly we audited 12 licensed suppliers on their supply volume submissions. We rated the majority of both types of audit as good or satisfactory.

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, non-fraudulent data when claiming ROCs. Each year we carry out a number of audits on generating stations to verify this.

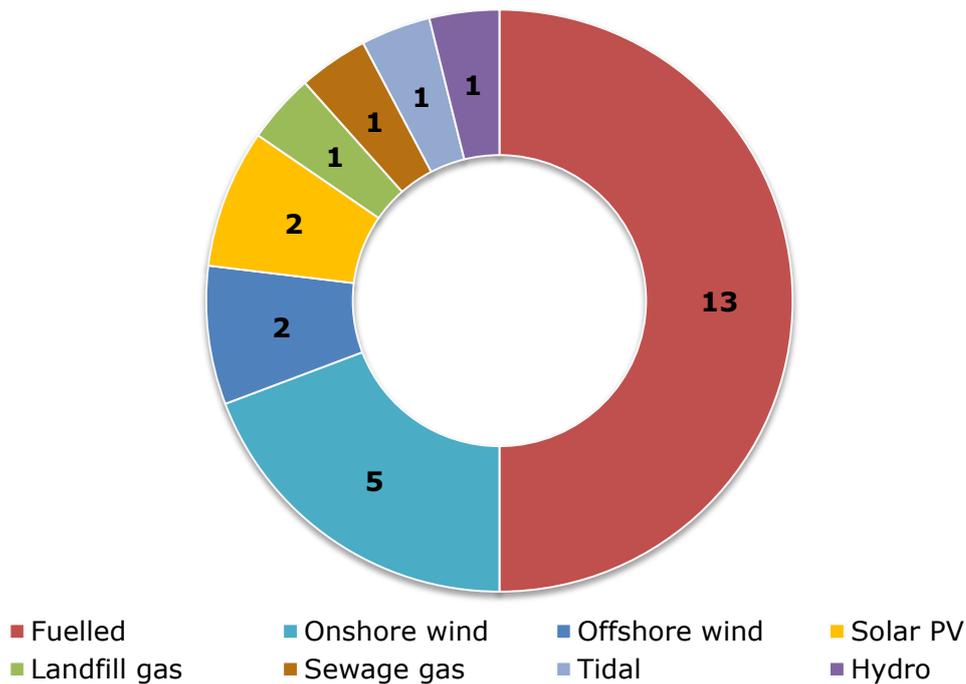
6.2 The objectives of our generator audit programme are:

- To verify output data submissions (based on which we issue ROCs)
- To assure accreditation information is correct
- To detect fraud and non-compliance
- To deter the fraudulent or careless submission of inaccurate data
- To detect departures from good practice

6.3 The generating stations that we select for audit are a mixture of those we have specific concerns about and those we select as random or representative examples of a particular class of generator (for example of technology type or capacity).

2013-14 generator audits

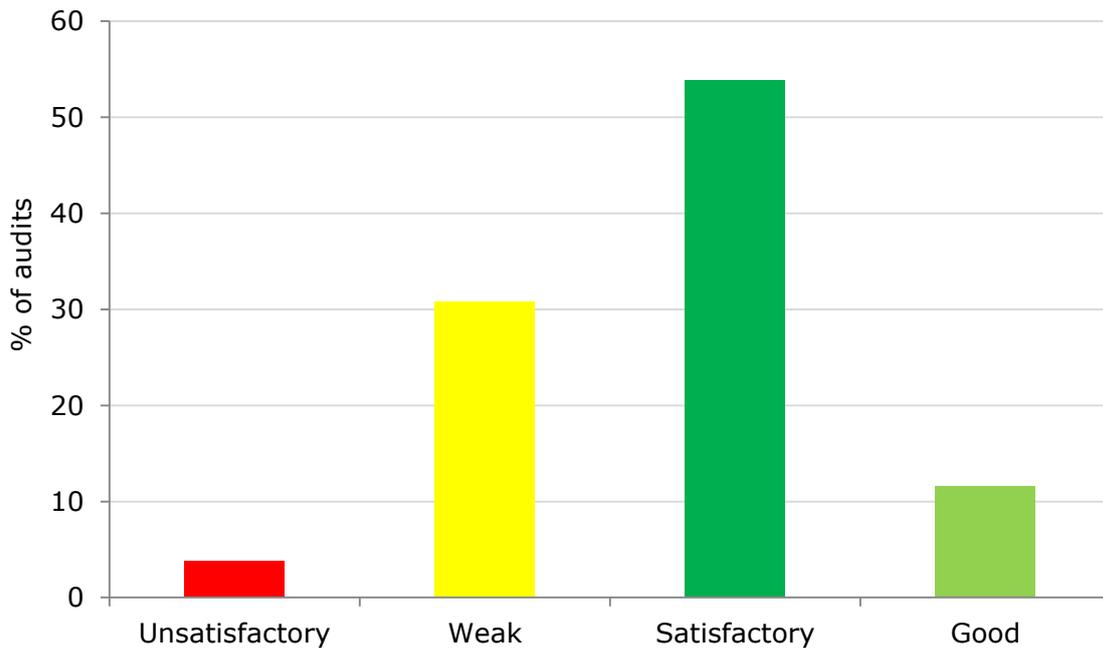
6.4 In 2013-14 we contracted Black and Veatch to carry out 26 technical audits of generating stations. **Figure 32** shows the breakdown of the different technologies by number of audits.

Figure 32: Technologies audited in 2013-14

6.5 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)

6.6 We rated the majority of the audits carried out in 2013-14 as satisfactory. Some, however, revealed irregularities that called into question the accuracy of the information in the accreditation application, the number of ROCs that the station received, departures from agreed procedures for fuel measurement and sampling (FMS), or failures to report modifications at the station. We did not identify any instances of deliberate fraud. **Figure 33** shows a breakdown of the 2013-14 generator audit assurance ratings.

Figure 33: Generator audit assurance ratings in 2013-14

6.7 This year we extended the audit programme to include enhanced fuel audits of three fuelled stations. These audits included in-depth examinations of the fuels used at each station and their FMS procedures. All three of these audits resulted in good or satisfactory ratings and we plan to carry out more enhanced fuel audits in future. The inclusion of the enhanced fuel audits also meant that a high proportion (50%, as in Figure 32) of the generator audits we carried out in 2013-14 were of fuelled stations.

6.8 For one tidal station, the auditor found that the commissioning date was incorrect. This meant that the station was given an incorrect banding, so it had been receiving 3 ROCs per MWh rather than 5 ROCs per MWh. The operator has since amended the station's accreditation application, it is now receiving the correct number of ROCs per MWh and we back-issued the outstanding ROCs the station was owed.

6.9 Of the 26 stations audited, 19 had either a DNC or a TIC which was incorrect in their application, and for seven stations both the DNC and TIC were incorrect. This is the most common issue we have identified in the audit programme to date. Another common issue is incorrect meter details in accreditation applications. Our auditors found this at 63% of the stations audited in 2013-14.

6.10 In 29% of the audits, most of which we rated as unsatisfactory or weak, the auditors found that the stations had over-claimed on ROCs. Reasons for this included parasitic loads not being measured appropriately, errors in output data and inaccuracies in sustainability information. We have since revoked, or are in the process of revoking, all of these over-claimed ROCs. When we revoke ROCs this means that suppliers are not able to present them for scheme compliance. As such they do not receive any money for these ROCs from the redistribution of the buy-out and late payment funds, nor are they included in the overall value of the scheme. If we identify ROCs for revocation that suppliers have already presented for compliance, we are not allowed to revoke them (see 3.23) but we withhold future ROCs from issue to the generating station instead.

6.11 **Table 9** lists the most common issues identified in the 2013-14 generator audits.

Table 9: Issues identified during 2013-14 generator audits

Types of issue reported	No. of instances
TIC or DNC figures incorrect on accreditation application	26
Meter details incorrect on accreditation application	21
Commissioning date incorrect in accreditation application	11
Requested documents not provided at audit	10
Other application discrepancies, eg post code incorrect	8
Schematic diagram submitted for accreditation application inaccurate	7
Incorrect certificate issue	7
Best practice relating to record keeping or data submission not followed (no impact on certificate claims)	6
No evidence provided that meter is of approved type	5
Errors in reporting generation figures	4
Input electricity misreported or not reported/deducted	4
Errors in reported fuel use/gross calorific value data (fuelled stations)	4
FMS procedures not followed/approved by us	4
Electrical meter calibration out of date	4

6.12 Following the completion of each audit site visit, the auditor sends us a report. We review these reports, and once we have approved them, we issue them to the generating stations. We ask the operators to rectify all problems, and make sure that they do. In a few instances, we temporarily suspend the issue of ROCs while we wait for the stations to send us information or take corrective action. We have closed most of the audits from 2013-14, including the one station we rated as unsatisfactory, but some remain open while we wait for the operators to carry out actions.

Audits of suppliers

6.13 Given the large financial sums in the RO and the critical importance of suppliers reporting accurate supply volumes for us to determine their obligations, we carry out an annual programme of supplier audits. As in 2012-13, we contracted Grant Thornton UK LLP to perform the audits for 2013-14.

6.14 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
- To detect departures from good practice

6.15 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 2013/14 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 (see 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.

6.16 We audited 12 supply licences in 2013-14. Two of the audits were on suppliers operating two licences from the same premises, hence our auditors carried out ten site visits.

6.17 We rated five of the licensees as good, six as satisfactory and one as weak.

6.18 The auditors found no major problems with supply figures, but there were some discrepancies in supplier procedures. This included some suppliers who were not managing their Register accounts appropriately. There were instances where users who no longer worked for the suppliers still had access to the account and instances where passwords were being shared between users. 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.

6.19 Most of these findings were minor and none prevented the audited suppliers from meeting the legislative deadlines for compliance with the RO.

7. Changes in legislation

Chapter summary

DECC and the devolved administrations in Scotland and Northern Ireland introduced a number of amendments in 2014. These were mainly around the transition to the RO's successor, Contracts for Difference (CfD), and sustainability. The RO will close to new generating capacity in 2017 and this is covered in the RO Closure Orders, which include a number of grace periods.

RO Amendment 2014

7.1 DECC, the Scottish government and the Department of Enterprise, Trade and Investment Northern Ireland (DETINI) made a number of amendments to the RO, ROS and NIRO in 2014. These were the transition from the RO to Contracts for Difference (CfD), enhanced sustainability criteria for the use of biomass under the RO, two new offshore wind bands under the ROS and changes to solar PV under the NIRO.

The transition from the RO and ROS to CfD

7.2 CfD is a new scheme which opened to accreditation applications in October 2014 and which will replace the RO once it closes to new generating capacity in 2017. During the transition between the CfD scheme opening to applications and the RO closing to new capacity, developers will have a one-off choice of scheme between the RO and CfD. The transition proposals are detailed in DECC's government response.⁵² The key points that affect stations are:

- New generating stations have a one-off choice of scheme between the RO and CfD. The same generating capacity cannot get support under both schemes.
- RO-accredited generating stations that add more capacity of 5 MW or over will be able to choose whether to accredit this additional capacity under the RO or CfD. Stations with capacity in both the RO and CfD will be known as dual-scheme facilities.
- RO-accredited biomass co-firing stations can choose to transfer to CfD if they convert to dedicated biomass. This choice is available for the whole station or for individual generation units. Stations with multiple units that convert only some of those units to dedicated biomass under CfD will become dual-scheme facilities.
- RO-accredited offshore wind stations can add phases of turbines, which are not yet registered under the RO, under CfD to become RO-CfD phased projects.

7.3 National Grid is the organisation responsible for assessing eligibility for stations applying for CfD. We will work closely with them to ensure applicants have not tried to apply for both schemes with the same generating capacity.

7.4 CfD will not be introduced in Northern Ireland until 2016. DETINI expects to consult on its transition proposals in early 2015.

⁵²https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/289078/Transition_and_Grace_Periods_Government_Response_-_12_Mar_2014.pdf

RO, ROS and NIRO sustainability decisions

7.5 Legislative amendments published on 1 April 2014 made various changes to the scheme as a result of DECC's consultation⁵³ on solid biomass and biogas sustainability. These were:

- Generating stations with a DNC of more than 50 kW have to report against improved sustainability criteria. This includes sustainable forest management criteria for feedstocks that are virgin wood or made from virgin wood, and criteria for excreta produced by animals.
- Revisions to the requirement for operators of generating stations to provide annual information to us. Some requirements have been removed and further detail will be required for certain fuel types (eg wood fuel). This also affects bioliquid fuels.
- Generating stations with a TIC of 1 MW or more using solid biomass or biogas must provide us with an annual independent audit report to verify the monthly information they have submitted to us. The updated requirements of the independent audit report also affect operators using bioliquid fuels.
- There are new reporting rules for binders used in biomass
- The introduction of sustainability forest management criteria to replace the land criteria for wood fuel
- From April 2014 to April 2020 there are two different GHG thresholds. A more stringent target has been set for 'post-2013 dedicated biomass station',⁵⁴ with all other biomass generating stations remaining on the standard threshold. DECC intends that from April 2020 all biomass stations will have to meet the same threshold.

7.6 The Scottish government and DETINI have implemented the same biomass sustainability amendments for the ROS and NIRO as DECC has for the RO.

Additional ROS and NIRO proposals

7.7 The Scottish Government introduced two new bands for offshore wind:

- A band at 2.5 ROCs per MWh for projects using demonstration turbines
- A band at 3.5 ROCs per MWh for projects using floating turbines

7.8 DETINI has amended the ROC banding levels for ground-mounted solar PV stations in NI with TIC above 250 kW. Stations accredited in 2014-15 will receive 1.6 ROCs per MWh, those accredited in 2015-16 will receive 1.5 ROCs per MWh and stations accredited in 2016-17 will receive 1.4 ROCs per MWh.

⁵³https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/231102/RO_Biomass_Sustainability_consultation_-_Government_Response_22_August_2013.pdf

⁵⁴ 'Post-2013 dedicated biomass station' is defined in article 54 of the RO and ROS and article 46 of the NIRO. It was introduced in the 2014 RO Amendment Orders.

RO Closure Order

RO Closure Order 2014

7.9 The RO and ROS will close to new capacity on 31 March 2017. In anticipation of this, DECC has introduced a number of grace periods via the RO Closure Order which came into force on 9 September 2014. Operators that are successful in their grace period application will have the opportunity to get accredited under the RO after the closure date. The grace periods are:

- Enabling financial decisions grace period: a 12- or 18-month (depending on technology) grace period for projects that can demonstrate evidence of substantial financial decisions and investments, where the project was scheduled to commission on or before 31 March 2017
- Radar or grid connection delay grace period: a 12-month grace period to address radar and grid connection delays, where the project was scheduled to commission on or before 31 March 2017
- Signed investment contracts grace period: a 12-month grace period for projects which have signed investment contracts, in case these contracts fall away or are terminated under certain circumstances
- Dedicated biomass cap grace period: 18-month grace period for projects allocated a place within the 400MW dedicated biomass cap⁵⁵
- An 18-month grace period for Scottish offshore wind stations using test, demonstration or floating wind turbines

7.10 The window for applying for the enabling financial decisions grace period has now closed. Stations can apply for the rest of these grace periods from 1 April 2017.

RO Closure (Amendment) Order 2015

7.11 DECC has confirmed that the RO and ROS will close to solar PV generating stations over 5 MW TIC from 1 April 2015. The RO Closure (Amendment) Order 2015 will introduce this change. We expect this amendment to contain three grace periods for large-scale solar PV stations that are not accredited under the RO before 31 March 2015:

- Preliminary accreditation grace period: for stations that have been granted preliminary accreditation on or before 13 May 2014
- Significant investment grace period: for stations that have made significant investments in projects 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

7.12 Operators will be able to apply for these grace periods from 1 April 2015 until 31 March 2016.

⁵⁵ This is a non-legislative cap on new dedicated biomass introduced by DECC in August 2013 to provide information to the government and the market on the number of upcoming projects. Projects must notify DECC to gain a place in the cap which, if breached, may trigger a further consultation on support for new projects.

Additional amendments in 2015

7.13 DECC, the Scottish government and DETINI intend to introduce additional amendments to sustainability criteria in 2015. These are:

- Formally linking sustainability criteria to the issue of ROCs for solid biomass and biogas stations with a TIC of 1 MW or over
- Alterations to the annual profiling information that operators of generating stations using wood fuel must submit to us
- Introduction of a GHG averaging mechanism to allow flexibility for consignments of biomass that do not meet the relevant GHG threshold in a month, to be averaged across the year and therefore may be below the GHG threshold annually.
- Some wood fuel will be deemed as sustainable when reporting against the sustainable forest management criteria (Timber Standard). These wood fuels are arboriculture residues and trees being removed from areas for ecological reasons and will therefore be classed as meeting the sustainable forest management criteria.
- Addition of highly biodiverse grasslands to the list of protected land types in the land criteria

7.14 In addition, DETINI has undertaken a review of small-scale banding levels. Following its consultation,⁵⁶ it has confirmed that there will be a stepped reduction in banding level for solar PV stations up to 50 kW in capacity. The first reduction, to 3 ROCs per MWh, will take effect from 1 October 2015. The second reduction, to 2 ROCs per MWh, will take effect from 1 October 2016.

⁵⁶ http://www.detini.gov.uk/niro_small_scale_banding_review_consultation_2015_cepa_link_-2.pdf?rev=0

8. Implementation and improvement update

Chapter summary

In 2013-14 we updated the Renewables and CHP Register and a number of guidance documents for scheme participants, to reflect changes in legislation and to our processes. We also ran a Continuous Improvement Programme to enable us to validate the information submitted to us and to reduce the length of the accreditation queue.

Renewables and CHP Register

8.1 During 2013-14 we did a project to improve the Accreditation, Output Data, Compliance and Certificates modules in our Register. To reflect legislative changes introduced in 2013, we amended the compliance module to remove the cap on co-fired ROCs and introduce the bioliquid cap (see 5.48). We introduced the GHG threshold for post-2013 dedicated biomass stations on the fuel measurements grid for sustainability reporting. We also created a new report to give generating station operators a summary of fuels and sustainability characteristics of their stations. As a result of legislative changes, we updated the banding rates for NIRO PV and we introduced new technology options for the ROS (*Offshore wind - floating turbines* and *Offshore wind – test and demonstration*).

Guidance documents

8.2 Sometimes we publish new or updated guidance on aspects of the RO, typically to reflect changes in legislation or revised processes for scheme participants.

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

- Guidance for suppliers (May 2014)⁵⁷
- Renewables and CHP Register user guide (May 2014)⁵⁸
- Guidance for generators (June 2014)⁵⁹
- FMS guidance (June 2014)⁶⁰
- Sustainability criteria guidance (June 2014)⁶¹
- Sustainability audit guidance (June 2014)⁶²
- Biodiesel and fossil-derived bioliquids guidance (July 2014)⁶³

⁵⁷ <https://www.ofgem.gov.uk/publications-and-updates/renewables-obligation-guidance-licensed-electricity-suppliers-may-2014>

⁵⁸ <https://www.ofgem.gov.uk/publications-and-updates/renewables-and-chp-register-user-guide-may-2014>

⁵⁹ <https://www.ofgem.gov.uk/publications-and-updates/renewables-obligation-guidance-generators-2>

⁶⁰ <https://www.ofgem.gov.uk/publications-and-updates/renewables-obligation-fuel-measurement-and-sampling-guidance-0>

⁶¹ <https://www.ofgem.gov.uk/publications-and-updates/renewables-obligation-sustainability-criteria-guidance-0>

⁶² <https://www.ofgem.gov.uk/publications-and-updates/renewables-obligation-sustainability-audit-guidance-operators-and-auditors-0>

⁶³ <https://www.ofgem.gov.uk/publications-and-updates/renewables-obligation-biodiesel-and-fossil-derived-bioliquids-guidance-july-2014>

Continuous Improvement Programme (CIP)

8.4 As part of the Continuous Improvement Programme we have put procedures in place to check the output data from generators against Elexon data. We also put in place further validation of suppliers' supply volumes using Elexon data, continuing the work we began last year. The process is described in 5.8 to 5.12. Our aims in doing this were to get greater assurance on the accuracy of supply volumes and to reduce the risk of misreporting for suppliers. This proved successful in 2013-14 – there were no supplier enforcement cases relating to the RO, and we rated all but one of the twelve suppliers we audited as satisfactory or good (described in Chapter 6).

8.5 We are also working on validating additional output data using data from Electralink,⁶⁴ following a successful pilot project.

8.6 We are working on improvements to reduce the length of the accreditation application queue. This project includes revamping procedures and improving supporting information for applicants. The queue is already reducing in length. We are also developing the application database so that it is easier for both applicants and our administration staff to use.

8.7 We are working on developing management information that will help to continually improve the administration of the RO scheme. This uses new software to better extract and manipulate data from databases.

⁶⁴ <http://www.electralink.co.uk/electralink>

Appendix 1: Renewables Obligation legislation

England and Wales

The Renewables Obligation Order 2009 for England and Wales

<http://www.legislation.gov.uk/uksi/2009/785/contents/made>

The Renewables Obligation (Amendment) Order 2010 for England and Wales

<http://www.legislation.gov.uk/uksi/2010/1107/contents/made>

The Renewables Obligation (Amendment) Order 2011 for England and Wales

<http://www.legislation.gov.uk/uksi/2011/984/contents/made>

The Renewables Obligation (Amendment) Order 2013 for England and Wales

<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>

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>

Applicable to England, Wales and Scotland

The Renewables Obligation Closure Order 2014

<http://www.legislation.gov.uk/uksi/2014/2388/contents/made>

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>

Appendix 2: Accredited stations

Table A1: Number and capacity of stations accredited in 2013-14

Technology	England		Wales		Scotland		Northern Ireland		Total	
	Quantity	Capacity (MW)	Quantity	Capacity (MW)	Quantity	Capacity (MW)	Quantity	Capacity (MW)	Quantity	Capacity (MW)
Non-microgenerators:										
Fuelled	3	5.81	0	0.00	0	0.00	5	2.43	8	8.24
Hydro	0	0.00	0	0.00	0	0.00	2	0.12	2	0.12
Landfill Gas	0	0.00	0	0.00	1	0.48	0	0.00	1	0.48
Offshore wind	3	446.80	1	570.24	1	7.00	0	0.00	5	1,024.04
Onshore wind	17	287.74	0	0.00	15	408.47	49	29.38	81	725.59
Sewage gas	2	1.10	0	0.00	0	0.00	0	0.00	2	1.10
Solar PV	135	991.72	6	54.58	0	0.00	0	0.00	141	1,046.30
Sub-totals	160	1,733.17	7	624.82	17	415.95	56	31.93	240	2,805.87
Microgenerators:										
Fuelled	1	0.01	0	0.00	0	0.00	0	0.00	1	0.01
Hydro	0	0.00	0	0.00	0	0.00	1	0.00	1	0.00
Onshore Wind	0	0.00	0	0.00	0	0.00	28	0.30	28	0.30
Solar PV	0	0.00	0	0.00	0	0.00	3,798	22.99	3,798	22.99
Sub-totals	1	0.01	0	0.00	0	0.00	3,827	23.29	3,828	23.29
Total	161	1,733.18	7	624.82	17	415.95	3,883	55.22	4,068	2,829.17

Microgenerators are stations with a DNC of 50 kW or lower

Table A2: Number and capacity of stations accredited from the start of the scheme until the end of 2013-14

Technology	England		Wales		Scotland		Northern Ireland		Total	
	Quantity	Capacity (MW)	Quantity	Capacity (MW)	Quantity	Capacity (MW)	Quantity	Capacity (MW)	Quantity	Capacity (MW)
Non-microgenerators:										
Fuelled	149	3,416.62	7	41.91	18	129.22	17	14.76	191	3,602.51
Hydro	50	22.44	31	77.17	148	616.24	20	3.34	249	719.19
Landfill gas	376	814.26	18	31.18	40	93.40	8	12.17	442	951.00
Offshore wind	21	3,633.20	3	720.24	4	195.48	0	0.00	28	4,548.92
Onshore wind	176	1,775.44	43	519.13	170	4,722.36	169	557.50	558	7,574.44
Sewage gas	137	141.23	16	12.73	5	6.66	0	0.00	158	160.62
Solar PV	219	1,270.45	7	58.44	1	0.63	0	0.00	227	1,329.52
Tidal power	0	0.00	0	0.00	3	2.20	1	1.20	4	3.40
Wave power	0	0.00	0	0.00	4	2.39	0	0.00	4	2.39
Sub-Total	1,128	11,073.63	125	1,460.79	393	5,768.58	215	588.98	1,861	18,891.98
Microgenerators:										
Fuelled	13	0.22	0	0.00	0	0.00	2	0.06	15	0.28
Hydro	0	0.00	0	0.00	0	0.00	18	0.32	18	0.32
Onshore wind	3	0.02	0	0.00	1	< 0.01	413	3.50	417	3.51
Sewage gas	1	0.03	0	0.00	0	0.00	0	0.00	1	0.03
Solar PV	3	0.01	0	0.00	0	0.00	4,965	28.48	4,968	28.48
Sub-Total	20	0.27	0	0.00	1	0.00	5,398	32.36	5,419	32.63
Total	1,148	11,073.90	125	1,460.79	394	5,768.58	5,613	621.34	7,280	18,924.61

Microgenerators are stations with a DNC of 50 kW or lower

Table A3: Stations with NFFO contracts at the end of 2013-14

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	8	1.81	2	1.53	1	0.08	11	3.42
Landfill gas	47	136.88	6	13.44	0	0.00	53	150.32
Offshore wind	1	1.80	0	0.00	0	0.00	1	1.80
Onshore wind	19	101.00	6	51.38	4	20.00	29	172.38
Wave power	0	0.00	1	0.15	0	0.00	1	0.15
Total	75	241.49	15	66.50	5	20.08	95	328.06

Appendix 3: ROCs issued

Table A4: ROCs issued in 2013-14 by country and technology type

Technology	ROCs issued				
	England	Wales	Scotland	Northern Ireland	Total
Fuelled	9,471,641	340,979	1,482,955	159,073	11,454,648
Hydro	55,384	131,692	2,304,696	18,498	2,510,270
Landfill gas	4,130,012	148,287	457,712	57,927	4,793,938
Offshore wind	22,197,765	639,806	1,095,911	0	23,933,482
Onshore wind	4,253,972	1,271,765	11,577,545	1,576,703	18,679,985
Sewage gas	502,355	38,172	29,962	0	570,489
Solar PV	805,349	24,145	854	36,844	867,192
Tidal power	0	0	5,137	4,347	9,484
Wave power	0	0	218	0	218
Total	41,416,478	2,594,846	16,954,990	1,853,392	62,819,706

Appendix 4: Compliance by licensed suppliers

Table A5: Supplier groups and their licences

Supplier group	Supply licences
Better Business Energy Limited	Better Business Energy Limited
	KAL-Energy Limited
British Gas Trading Limited	British Gas Trading Limited
	Electricity Direct (UK) Limited
E.ON Energy Limited	E.ON Energy Limited
	E.ON UK Plc
	Economy Power Limited
EDF Energy plc	British Energy Direct Limited
	EDF Energy Customers Plc
	SEEBOARD Energy Limited
GDF Suez Marketing Limited	GDF Suez Marketing Limited
	IPM Energy Retail Limited
Gilmond Consulting	I Supply Electricity 2 Limited
	Simply Electricity Limited
	I Supply Electricity Limited
	I Supply Energy Limited
	Supply Energy Limited
Opus Energy Limited	Donnington Energy Limited
	Farmoor Energy Limited
	Opus Energy (Corporate) Limited
	Opus Energy Limited
	Opus Energy Renewables Limited
OVO Electricity Limited	OVO Electricity Limited
	ONI Energy
RWE Npower Plc	Electricity Plus Supply Limited
	Npower Direct Limited
	Npower Limited
	Npower Northern Limited
	Npower Northern Supply Limited
	Npower Yorkshire Limited
SSE Energy Supply Limited	Npower Yorkshire Supply Limited
	South Wales Electricity Limited
	SSE Energy Supply Limited
Tradelink Solutions Limited	SSE Airtricity Energy Supply Limited
	LoCO2 Energy Limited
Utilisoft Limited	Tradelink Solutions Limited
	Altitude Energy Supply Limited

Table A5: Supplier groups and their licences

Supplier group	Supply licences
	Jetstream Energy Supply Limited
	Lightning Energy Supply Company Limited
	Sirocco Energy Supply Limited
Utiliteam	Angel Energy Limited
	Holborn Energy Limited
	Barbican Power Limited
	Marble Power Limited
	Paddington Power Limited
	Regent Power Limited
ESB Independent Energy NI Limited	Electricity Supply Board
	ESB Independent Energy NI Limited (t/a Electric Ireland)

Table A6: Summary of compliance by supplier group in 2013-14 (all schemes)

Supplier group	Total obligation (ROCs)	Total ROCs presented	Total payments made by supplier	Total redistributed to supplier	% of funds
Addito Supply Limited.	31	0	£1,302.82	£0.00	0.0%
Axis Telecom Limited	1,732	0	£72,778.64	£0.00	0.0%
AXPO UK Limited	58,843	58,843	£0.00	£41,037.00	0.1%
BES Commercial Electricity Limited	58,702	58,700	£84.04	£40,936.00	0.1%
BP Power Trading Limited	329	0	£13,824.58	£0.00	0.0%
British Gas Trading Limited	8,578,939	8,578,939	£0.00	£5,983,066.00	14.1%
VPI Immingham LLP	39,554	0	£1,662,059.08	£0.00	0.0%
Dong Energy Power Sales UK Limited	35,980	35,980	£0.00	£25,090.00	0.1%
Dual Energy Direct Limited	64,933	64,933	£0.00	£45,282.00	0.1%
E.ON Energy Limited	9,955,582	9,955,582	£0.00	£6,943,151.00	16.4%
Economy Energy Trading Limited	31,359	376	£1,301,905.66	£261.00	0.0%
Ecotricity Group Limited	61,903	61,903	£0.00	£43,170.00	0.1%
EDF Energy plc	10,796,822	10,681,976	£4,825,828.92	£7,449,750.00	17.6%
Eneco energy Trade BV	18,123	14,656	£145,683.34	£10,219.00	0.0%
Energy Data Company	12,350	0	£518,947.00	£0.00	0.0%
Extra Energy Supply Limited	28	0	£1,176.74	£0.00	0.0%
F & S Energy Limited	232	232	£0.00	£161.00	0.0%
First Utility Limited	255,363	250,000	£225,353.26	£174,351.00	0.4%
Flow Energy Limited	18,940	0	£795,858.80	£0.00	0.0%
Gazprom Marketing & Trading Retail Limited	303,668	297,702	£250,691.32	£207,620.00	0.5%
GDF Suez Marketing Limited	2,282,411	2,264,193	£765,520.36	£1,579,076.00	3.7%
Gilmond Consulting	22,692	0	£953,517.84	£0.00	0.0%

Table A6: Summary of compliance by supplier group in 2013-14 (all schemes)

Supplier group	Total obligation (ROCs)	Total ROCs presented	Total payments made by supplier	Total redistributed to supplier	% of funds
Gnergy Limited	24	0	£1,008.48	£0.00	0.0%
Good Energy Limited	38,461	38,461	£0.00	£26,821.00	0.1%
Green Energy (UK) Limited	16,745	16,745	£0.00	£11,675.00	0.0%
Haven Power Limited	1,900,713	1,899,556	£48,617.14	£1,324,775.00	3.1%
Hudson Energy Supply UK Limited	71,632	70,000	£68,576.64	£48,817.00	0.1%
MA Energy Limited	19,750	1,862	£755,818.46	£1,297.00	0.0%
Opus Energy Limited	668,162	668,162	£0.00	£465,981.00	1.1%
OVO Electricity Limited	165,041	165,001	£1,680.80	£115,072.00	0.3%
Power 4 All Limited	263,552	263,552	£0.00	£183,803.00	0.4%
PX Holding Ltd	13,136	13,136	£0.00	£9,160.00	0.0%
RWE Npower Plc	9,707,752	9,586,037	£5,114,464.30	£6,685,422.00	15.8%
Scottish Power Energy Retail	4,363,882	4,363,882	£0.00	£3,043,428.00	7.2%
Sembcorp Utilities (UK) Limited	74,644	0	£3,137,013.51	£0.00	0.0%
SmartestEnergy Limited	1,041,885	1,041,885	£0.00	£726,622.00	1.7%
Spark Energy Supply Limited	58,144	0	£2,443,210.88	£0.00	0.0%
SSE Energy Supply Limited	9,140,947	8,695,244	£18,728,440.06	£6,064,176.00	14.3%
Statkraft Markets GmbH	105	0	£4,412.10	£0.00	0.0%
Symbio Energy LLP	145	0	£6,092.90	£0.00	0.0%
The Co-operative Energy Limited	123,911	123,911	£0.00	£86,415.00	0.2%
Total Gas & Power Limited	975,194	975,194	£0.00	£680,112.00	1.6%
Utilita Energy Limited	56,620	0	£2,399,965.72	£0.00	0.0%
Budget Energy Limited	16,802	0	£706,020.04	£0.00	0.0%
ESB Independent Energy NI Limited	119,121	119,121	£0.00	£83,075.00	0.2%
Firmus Energy Supply Limited	4,768	0	£200,351.36	£0.00	0.0%
LCC Power Limited	16,115	15,865	£10,505.00	£11,062.00	0.0%
Power NI	297,012	270,727	£1,104,495.70	£188,807.00	0.4%
Vayu Limited	501	0	£21,052.02	£0.00	0.0%
Viridian Energy Supply Limited	104,894	104,894	£0.00	£73,154.00	0.2%
Totals	61,858,174	60,757,250	£46,286,257.51	£42,372,844	

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	Buy-out payment redistributed to supplier	Late payment redistributed to supplier
Addito Supply Limited	27	0	0	0	£0.00	£1,134.71	£0	£0
Axis Telecom Limited	1,705	0	0	0	£71,644.10	£0.00	£0	£0
AXPO UK Limited	58,843	58,843	0	1,553	£0.00	£0.00	£23,347	£5,977
BES Commercial Electricity Limited	53,170	53,168	0	0	£84.04	£0.00	£23,290	£5,962
BP Energy Europe Limited	329	0	0	0	£13,824.58	£0.00	£0	£0
British Gas Trading Limited	7,898,231	7,898,231	0	2,700	£0.00	£0.00	£3,403,899	£871,442
VPI Immingham	39,554	0	0	0	£1,662,059.08	£0.00	£0	£0
Dong Energy Power Sales UK Limited	34,639	34,639	0	0	£0.00	£0.00	£14,275	£3,654
Dual Energy Direct Limited	58,834	58,834	0	0	£0.00	£0.00	£25,763	£6,595
E.ON Energy Limited	4,995,196	4,995,196	0	0	£0.00	£0.00	£2,093,968	£536,082
E.ON UK Plc	4,474,381	4,474,381	0	915	£0.00	£0.00	£1,856,146	£475,197
Economy Energy Trading Limited	31,205	376	0	0	£1,295,434.58	£0.00	£149	£38
The Renewable Energy Company Limited	59,193	59,193	0	2,035	£0.00	£0.00	£24,561	£6,288
British Energy Direct Limited	781,886	781,886	0	0	£0.00	£0.00	£329,633	£84,390
EDF Energy Customers Plc	8,997,126	8,997,126	0	61,645	£0.00	£0.00	£3,908,696	£1,000,676
Eneco energy Trade BV	16,948	13,481	0	0	£145,683.34	£0.00	£5,815	£1,488
Energy Data Company Limited	12,350	0	0	0	£518,947.00	£0.00	£0	£0
Extra Energy Supply Limited	24	0	0	0	£0.00	£1,008.63	£0	£0
F & S Energy Limited	217	217	0	0	£0.00	£0.00	£92	£23
First Utility Limited	240,203	240,203	0	0	£0.00	£0.00	£99,193	£25,394
Flow Energy Limited	18,210	0	0	0	£765,184.20	£0.00	£0	£0

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	Buy-out payment redistributed to supplier	Late payment redistributed to supplier
Gazprom Marketing & Trading Retail Limited	274,392	274,392	0	3,042	£0.00	£0.00	£118,120	£30,240
GDF Suez Marketing Limited	2,135,602	2,117,384	0	6,960	£765,520.36	£0.00	£898,372	£229,995
I Supply Energy Limited	21,828	0	0	0	£917,212.56	£0.00	£0	£0
Gnergy Limited	24	0	0	0	£1,008.48	£0.00	£0	£0
Good Energy Limited	36,603	36,603	0	4,225	£0.00	£0.00	£15,260	£3,906
Garsington Energy Limited	16,297	16,297	0	1,799	£0.00	£0.00	£6,643	£1,700
Haven Power Limited	1,777,495	1,777,495	0	1,308	£0.00	£0.00	£753,694	£192,955
Hudson Energy Supply UK Limited	63,297	63,297	0	0	£0.00	£0.00	£27,774	£7,110
MA Energy Limited	18,915	1,862	0	0	£90,000.00	£630,731.76	£738	£189
Opus Energy (Corporate) Limited	345,155	345,155	0	9,874	£0.00	£0.00	£149,548	£38,286
Opus Energy Limited	267,007	267,007	0	0	£0.00	£0.00	£115,560	£29,585
OVO Electricity Limited	157,702	157,702	0	0	£0.00	£0.00	£65,468	£16,760
Power4All Limited	230,761	230,761	0	0	£0.00	£0.00	£104,570	£26,771
Coulomb Energy Supply Limited	13,136	13,136	0	22	£0.00	£0.00	£5,212	£1,334
Electricity Plus Supply Limited	372,337	367,394	0	0	£207,704.86	£0.00	£152,965	£39,161
Npower Direct Limited	463,453	457,300	0	0	£258,549.06	£0.00	£193,069	£49,428
Npower Limited	6,506,788	6,420,250	138,956	99,378	£3,636,326.76	£0.00	£2,709,778	£693,738
Npower Northern Supply Limited	1,572,230	1,551,357	0	0	£877,083.46	£0.00	£653,045	£167,188
Npower Yorkshire Supply Limited	241,663	238,455	0	0	£134,800.16	£0.00	£94,630	£24,226
Scottish Power Energy Retail Limited	3,274,904	3,274,904	0	0	£0.00	£0.00	£1,731,474	£443,279

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

Licence	RO obligation (ROCs)	Total ROCs presented	Bioliqid ROCs presented	Banked ROCs presented	Buy-out payment made by supplier	Late payment made by supplier	Buy-out payment redistributed to supplier	Late payment redistributed to supplier
Wilton Energy Limited	74,644	0	0	0	£0.00	£3,137,013.51	£0	£0
SmartestEnergy Limited	960,142	960,142	754	10,782	£0.00	£0.00	£413,392	£105,833
Spark Energy Supply Limited	54,064	0	0	0	£2,271,769.28	£0.00	£0	£0
SSE Energy Supply Limited	7,657,011	7,345,854	0	14,948	£13,074,817.14	£0.00	£3,363,380	£861,068
Statkraft Markets GmbH	2	0	0	0	£84.04	£0.00	£0	£0
Symbio Energy LLP	145	0	0	0	£6,092.90	£0.00	£0	£0
Co-Operative Energy Limited	119,529	119,529	0	4,794	£0.00	£0.00	£49,164	£12,586
Total Gas & Power Limited	894,399	894,399	3,265	24,618	£0.00	£0.00	£386,931	£99,059
Utilita Energy Limited	56,587	0	0	0	£0.00	£2,398,566.94	£0	£0
Totals	55,378,383	54,596,449	142,975	250,598	£26,713,829.98	£6,168,455.55	£23,817,614	£6,097,603

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

Licence	ROS obligation (ROCs)	Total ROCs presented	Bioliqid ROCs presented	Banked ROCs presented	Buy-out payment made by supplier	Late payment made by supplier	Buy-out payment redistributed to supplier
Addito Supply Limited	4	0	0	0	£0.00	£168.11	£0
Axis Telecom Limited	27	0	0	0	£1,134.54	£0.00	£0
BES Commercial Electricity Limited	5,532	5,532	0	0	£0.00	£0.00	£9,904
British Gas Trading Limited	680,708	680,708	0	0	£0.00	£0.00	£1,447,470
Dong Energy Power Sales UK Limited	1,341	1,341	0	0	£0.00	£0.00	£6,070
Dual Energy Direct Limited	6,099	6,099	0	0	£0.00	£0.00	£10,955

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

Licence	ROS obligation (ROCs)	Total ROCs presented	Bioliqid ROCs presented	Banked ROCs presented	Buy-out payment made by supplier	Late payment made by supplier	Buy-out payment redistributed to supplier
E.ON Energy Limited	282,289	282,289	0	0	£0.00	£0.00	£890,436
E.ON UK Plc	203,716	203,716	0	0	£0.00	£0.00	£789,305
Economy Energy Trading Limited	154	0	0	0	£6,471.08	£0.00	£0
The Renewable Energy Company Limited	2,710	2,710	0	0	£0.00	£0.00	£10,444
British Energy Direct Limited	48,898	48,898	0	0	£0.00	£0.00	£140,172
EDF Energy Customers Plc	968,912	854,066	0	0	£4,825,828.92	£0.00	£1,662,129
Eneco energy Trade BV	1,175	1,175	0	0	£0.00	£0.00	£2,472
Extra Energy Supply Limited	4	0	0	0	£0.00	£168.11	£0
F & S Energy Limited	15	15	0	0	£0.00	£0.00	£39
First Utility Limited	15,160	9,797	0	0	£225,353.26	£0.00	£42,180
Flow Energy Limited	730	0	0	0	£30,674.60	£0.00	£0
Gazprom Marketing & Trading Retail Limited	29,276	23,310	0	0	£250,691.32	£0.00	£50,229
GDF Suez Marketing Limited	146,809	146,809	0	22,585	£0.00	£0.00	£382,022
I Supply Energy Limited	864	0	0	0	£36,305.28	£0.00	£0
Good Energy Limited	1,858	1,858	0	0	£0.00	£0.00	£6,489
Garsington Energy Limited	448	448	0	0	£0.00	£0.00	£2,825
Haven Power Limited	123,218	122,061	0	0	£48,617.14	£0.00	£320,500
Hudson Energy Supply UK Limited	8,335	6,703	0	0	£68,576.64	£0.00	£11,810
MA Energy Limited	835	0	0	0	£35,086.70	£0.00	£0
Opus Energy (Corporate) Limited	31,756	31,756	0	7,280	£0.00	£0.00	£63,593
Opus Energy Limited	24,244	24,244	0	0	£0.00	£0.00	£49,140
OVO Electricity Limited	7,339	7,299	0	0	£1,680.80	£0.00	£27,839
Power4All Limited	32,791	32,791	0	0	£0.00	£0.00	£44,467
Electricity Plus Supply Limited	18,129	18,129	0	0	£0.00	£0.00	£65,046

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

Licence	ROS obligation (ROCs)	Total ROCs presented	Bioliq uid ROCs presented	Banked ROCs presented	Buy-out payment made by supplier	Late payment made by supplier	Buy-out payment redistributed to supplier
Npower Direct Limited	29,298	29,298	0	0	£0.00	£0.00	£82,100
Npower Limited	409,278	409,278	0	0	£0.00	£0.00	£1,152,303
Npower Northern Supply Limited	94,531	94,531	0	0	£0.00	£0.00	£277,700
Npower Yorkshire Supply Limited	45	45	0	0	£0.00	£0.00	£40,240
Scottish Power Energy Retail Limited	1,088,978	1,088,978	0	19,018	£0.00	£0.00	£736,290
SmartestEnergy Limited	81,743	81,743	523	20,435	£0.00	£0.00	£175,790
Spark Energy Supply Limited	4,080	0	0	0	£171,441.60	£0.00	£0
SSE Energy Supply Limited	1,265,511	1,130,965	0	0	£5,653,622.92	£0.00	£1,430,240
Statkraft Markets GmbH	103	0	0	0	£4,328.06	£0.00	£0
Co-Operative Energy Limited	4,382	4,382	0	0	£0.00	£0.00	£20,906
Total Gas & Power Limited	80,795	80,795	0	0	£0.00	£0.00	£164,538
Utilita Energy Limited	33	0	0	0	£0.00	£1,398.78	£0
Totals	5,702,153	5,431,769	523	69,318	£11,359,812.86	£1,735.00	£10,115,643

We did not redistribute any late payments for the ROS as described in 5.32

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

Licence	NIRO obligation (ROCs)	Total ROCs presented	Bioliqid ROCs presented	Banked ROCs presented	Buy-out payment made by supplier	Late payment made by supplier	Buy-out payment redistributed to supplier
Budget Energy Limited	16,802	0	0	0	£706,020.04	£0	£0.00
ESB Independent Energy NI Limited (t/a Electric Ireland)	119,121	119,121	0	6,398	£0.00	£0	£3,613.00
Firmus Energy Supply Limited	4,768	0	0	0	£200,351.36	£0	£0.00
LCC Power Limited	16,115	15,865	0	0	£10,505.00	£0	£481.00
Power NI	297,012	270,727	0	13,705	£1,104,495.70	£0	£8,212.00
SSE Airtricity Energy Supply Limited	218,425	218,425	0	0	£0.00	£0	£6,626.00
Vayu Limited	501	0	0	0	£21,052.02	£0	£0.00
Viridian Energy Supply Limited (t/a Energia)	104,894	104,894	0	134	£0.00	£0	£3,182.00
Totals	777,638	729,032	0	20,237	£2,042,424.12	0	£22,114.00

As suppliers made no late payments towards the NIRO, we did not have any funds to redistribute

Table A10: Suppliers with an obligation who did not meet the 1 June 2014 deadline to submit estimated supply volumes

Supplier group name
Economy Energy Trading Limited
Eneco Energy Trade BV
Gnergy Limited
Statkraft Markets GmbH
Symbio Energy LLP
The Co-operative Energy Limited

Table A11: Suppliers with an obligation who did not meet the 1 July 2014 deadline to submit final supply volumes

Supplier group name
Dong Energy Power Sales UK Limited
Economy Energy Trading Limited
MA Energy Limited
PX Holding Limited
Statkraft Markets GmbH
Symbio Energy LLP
LCC Power Limited
Vayu Limited

Appendix 5: Glossary of terms

A

Act	Electricity Act 1989
AD	Anaerobic digestion
ASA	Agency Services Agreement

C

CHP	Combined heat and power
CfD	Contracts for Difference

D

DECC	Department of Energy and Climate Change
Defra	Department for Environment, Food and Rural Affairs
DETINI	Department of Enterprise, Trade and Investment Northern Ireland
DNC	Declared net capacity

E

EU	European Union
EMR	Electricity Market Reform

F

FMS	Fuel measurement and sampling
FIT	Feed-in Tariff

G

GB	Great Britain
GHG	Greenhouse gas

GCV Gross calorific value

K

kW Kilowatt

kWh Kilowatt-hour

M

MW Megawatt

MWh Megawatt-hour

MCS Microgeneration Certification Scheme

N

NI Northern Ireland

NIRO Northern Ireland Renewables Obligation

NIROC Northern Ireland Renewables Obligation Certificate

NFFO Non-Fossil Fuel Obligation

NI NFFO Northern Ireland Non-Fossil fuel Obligation

O

Ofgem Office of Gas and Electricity Markets

P

Payment Buy-out and late payments collectively

PV Photovoltaic

R

RED Renewable Energy Directive 2009

RHI Renewable Heat Incentive

RO Renewables Obligation

ROC Renewables Obligation Certificate

ROS Renewables Obligation Scotland

RPI Retail Prices Index

S

SRO Scottish Renewables Obligation (NFFO)

SROC Scottish Renewables Obligation Certificate

T

TIC Total installed capacity

TWh Terawatt-hour

U

UK United Kingdom

UR Utility Regulator Northern Ireland