

Renewables Obligation

Annual Report 2018-19



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Executive Summary

The Renewables Obligation (RO) is a scheme which supports the deployment of large-scale renewable electricity generation in Great Britain (GB), and the deployment of large-scale, as well as smaller scale renewable electricity generation in Northern Ireland (NI), by setting an obligation on licensed electricity suppliers to source a portion of their supply from renewable sources. This report covers scheme activity during the 2018-19 obligation period (1 April 2018 – 31 March 2019).

Supplier compliance

Overall, suppliers presented 107.64 million Renewables Obligation Certificates (ROCs) towards the total UK obligation of 127.62 million ROCs. Those suppliers not meeting their obligation by presenting ROCs are required to make up the shortfall by making payments into the buy-out fund or the late payment fund. The payments collected resulted in £841.9m being redistributed to eligible suppliers from the combined buy-out fund and late payment fund, exceeding the previous record of £604.1m set in 2017-18. The proportion of the obligation met by suppliers presenting ROCs (84.34%) was slightly lower than the corresponding figure in 2017-18 (87.6%). Each ROC was notionally worth £55.04, leading to a total scheme value of £5.9 billion in 2018-19.¹

From the 2018-19 RO year onwards, GB Energy Intensive Industries (EII) are able to claim exemption from up to 85% of the costs of the RO scheme on their electricity supply. Twenty-three suppliers supplied 11.5 TWh of electricity to GB EIIs during 2018-19. This resulted in 9.2 TWh of electricity being excluded (from the total of 277.4 TWh supplied) when determining scheme obligations.²

Twenty-one suppliers did not comply with their RO obligations, 16 of which ceased trading during the 18-19 compliance round. Four suppliers made a partial late payment and one made no payment at all by the 31 October late payment deadline. We deployed a robust enforcement strategy this year in respect of non-compliant suppliers which involved issuing consultations on four Final Orders and issue of two Provisional Orders.³

¹ Calculations are detailed in chapter 4.

² [Details on the EII exemption can be found in our supplier guidance:](https://www.ofgem.gov.uk/system/files/docs/2019/03/1904_ro_supplier_guidance.pdf) <https://www.ofgem.gov.uk/system/files/docs/2019/03/1904_ro_supplier_guidance.pdf>

³ [Link to information on provisional and final orders:](https://www.ofgem.gov.uk/investigations/provisional-orders-and-final-orders) <<https://www.ofgem.gov.uk/investigations/provisional-orders-and-final-orders>>

Mutualisation

There was a shortfall of £97.5m in the buy-out and late payment funds on the late payment deadline. This triggered the mutualisation process (applicable in GB only) for the second year in a row.⁴ This process requires all compliant and partially compliant suppliers to make additional payments to make up the shortfall. Mutualisation payments are made to Ofgem on a quarterly basis and the first payments in respect of the 19-20 compliance round will be due from suppliers by the end of August 2020. Mutualisation payments are redistributed on the same basis as the buy-out and late payment funds.

ROC issue and renewable generation

In 2018-19 we issued 105.9 million ROCs to renewable generating stations, lower than the supplier obligation of 127.6 million but the highest number of ROCs in scheme history. This represents 79.1 TWh of renewable electricity generation, an increase of 5.2% from last year, and is equivalent to 28.5% of total 2018-19 electricity supply in the UK. This rises to 99.7 TWh of renewable generation and is equivalent to 35.9% of UK supply when including generation from the Feed-in Tariffs (FIT) and Contracts for Difference (CfD) schemes.

Accreditations

By the end of 2018-19 we had accredited 26,525 stations since the start of the scheme, with a total generating capacity of 35.2 GW. Following scheme closure in March 2017, it has only been possible to gain accreditation if particular grace period criteria are met.⁵ These enhanced accreditation requirements have resulted in a dramatic reduction in the number of stations being accredited onto the scheme. The number of pathways to accreditation further reduced between 2017-18 and 2018-19 as a number of grace periods closed, resulting in only 11 accreditations for 2018-19. The final grace period closed on 31 March 2019 meaning that there will be no new applications after this date.

Audit

Our auditors carried out targeted audits of 153 non micro⁶ generators across a range of technology types and 84 micro generators in Northern Ireland. Our auditors also audited four licensed suppliers on their supply volume submission processes and two Northern Ireland

⁴ Threshold to trigger mutualisation is £15.4m for England and Wales, and £1.54m for Scotland.

⁵ [Link to information on the RO closure](https://www.ofgem.gov.uk/environmental-programmes/ro/about-ro/ro-closure): <<https://www.ofgem.gov.uk/environmental-programmes/ro/about-ro/ro-closure>>

⁶ Non micro refers to generating stations with a Declared Net Capacity (DNC) greater than 50kW. Micro generators are those with a DNC of 50kW or less. Micro generators are only eligible for the RO in NI and are referred to as Micro-NIRO.

Agent or 'Rent-a-roof' companies in relation to their obligations under the NIRO. The compliance of 76% of the non micro generators was rated as unsatisfactory or weak.

The proportion of weak and unsatisfactory generators has increased from 56% in 2017-18 to 76% in 2018-19. A high level of non-compliance was expected due to targeted audits with a focus on key risk areas and generators of particular concern.

Associated Documents

The annual reports for all previous obligation periods are published in the Publications library:

[Link to Ofgem RO publications library](#)

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

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

[Link to Ofgem RO public reports and data webpage](#)

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

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

[Link to the Renewables and CHP Register](#)

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

Information for generators accredited under the RO is available on our website:

[Link to information for generators](#)

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

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

[Link to information for suppliers](#)

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

The legislation which underpins the RO, ROS and NIRO schemes can be viewed on the legislation.gov.uk website:

[Link to the RO section of the legislation.gov.uk website](#)

<<http://www.legislation.gov.uk/all?title=renewables%20obligation>>

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Context

The Renewables Obligation (RO) is a scheme which supports the deployment of large-scale renewable electricity generation in Great Britain (GB), and the deployment of large-scale, as well as smaller scale renewable electricity generation in Northern Ireland (NI). To achieve this, it puts an obligation on licensed electricity suppliers to source a proportion of their supply from renewable sources.

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

The Gas and Electricity Markets Authority (the Authority) is the statutory body responsible for administering the RO and ROS in Great Britain (GB). We also administer the NIRO on behalf of the Northern Ireland Authority for Utility Regulation (NIAUR); however, NIAUR retains the statutory responsibility for administering the NIRO. The Authority's day-to-day functions are performed by Ofgem, the office of the Authority.

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

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

Unless it is clear from the context, 'RO' refers to the three UK obligations – the RO England and Wales, the ROS and the NIRO – collectively. Similarly, 'ROC' usually refers collectively to

England and Wales ROCs (ROCs), Scottish ROCs (SROCs) and Northern Ireland ROCs (NIROCs).

After early closure for some technology types, the Renewables Obligation (RO) closed to all new generating capacity on 31 March 2017. This closure does not affect capacity with an accreditation date on or before the relevant closure date, ie they are still eligible to receive ROCs for 20 years from the date of accreditation or until 31 March 2037, whichever is the earlier. Generators were able to gain entry to the scheme after closure for a time if they met specified grace period criteria. The final grace period closed on 31 March 2019.⁷

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

⁷ [Link to information on the RO closure](https://www.ofgem.gov.uk/environmental-programmes/ro/about-ro/ro-closure): <<https://www.ofgem.gov.uk/environmental-programmes/ro/about-ro/ro-closure>>

1. Introduction

Scheme administration

1.1 We administer the RO England and Wales and ROS (Scotland) in GB. We also administer the NIRO (Northern Ireland) on behalf of the Northern Ireland Authority for Utility Regulation (NIAUR) through an Agency Services Agreement,⁸ however NIAUR retains the statutory responsibility for administering the NIRO.

1.2 The legislation governing the administration of the three schemes, collectively referred to as 'the Orders' in this report, set out our functions. These include:

- accrediting generating stations so they can receive ROCs⁹,
- publishing a list of accredited generating stations (with full and preliminary accreditation),
- issuing, revoking and withholding ROCs,
- establishing and maintaining a register of ROCs,
- monitoring compliance of suppliers and generators with the requirements of legislation,
- adjusting the buy-out price and mutualisation ceiling in line with the Retail Price Index (RPI) each year (NI is excluded from mutualisation),
- receiving statutory buy-out and late payments from suppliers and redistributing these funds, and
- publishing an annual report on scheme activity in the preceding obligation period by 1 April each year.

1.3 Our costs for administering the RO are recovered from the statutory buy-out fund. We take our costs for the current scheme year from the previous year's buy-out fund. On 30 August 2019 we published proposed costs for 2019-20 of £5,538,665 on our website. These costs relate to our administration of the RO for England & Wales, Scotland, and Northern Ireland.¹⁰

⁸ Section 121 of the Energy Act 2004 gives us the power to enter into "arrangements" like an agency services agreement.

⁹ For further information, [please see our Guidance for Generators:](https://www.ofgem.gov.uk/publications-and-updates/renewables-obligation-guidance-generators)

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

¹⁰ [Link to RO proposed costs 2019-20:](https://www.ofgem.gov.uk/publications-and-updates/ofgem-s-costs-administering-renewables-obligation-1) <<https://www.ofgem.gov.uk/publications-and-updates/ofgem-s-costs-administering-renewables-obligation-1>>

Purpose of this document

1.4 This report fulfils our duty to publish an annual report on the scheme activity during the 2018-19 obligation period by 1 April 2020. The Orders¹¹ state the minimum information the report must include:

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

1.5 We can also publish "any other matter" that we consider relevant in the report. So we have included information on the number and type of stations we have accredited, the amount of renewable generation for which ROCs were claimed, biomass sustainability, the value of the scheme, recent and upcoming changes in legislation and improvements we have made to the administration of the scheme.

Points to note

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

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

1.8 The data included in this report was downloaded from the Renewables and CHP Register (the Register) on 29 October 2019. The data stored in the Register is live data and subject to change. For example, a station's accreditation details might be amended or the number of ROCs issued/revoked might change. As such, data downloaded from the Register at a later date may vary from those used in this report.

¹¹ Article 86(1)(f) of the RO, Article 57(1)(f) of the ROS and Article 49(1)(e) of the NIRO list the requirements for the annual report.

2. ROCs issued and renewable generation

Chapter summary

In 2018-19, we issued 105.9 million ROCs to renewable generating stations, lower than the supplier obligation of 127.6 million but the highest number of ROCs in scheme history. This represents 79.1 TWh of renewable electricity generation, an increase of 5.2% from last year, and is equivalent to 28.5% of total 2018-19 electricity supply in the UK. Most technology types saw an increase in ROC issue compared to 2017-18. Fuelled ROC issue rose by 17.7%, solar PV by 9.4% and onshore wind by 3.7%. Only landfill gas and sewage gas stations saw a decrease in ROC issue, these were down 8.5% and 4.6% respectively.

Issuing ROCs

2.1 We issue ROCs to the operators or agents of accredited generating stations based on their net renewable output. Generators submit their output figures to us¹² on a monthly basis with the exception of micro generators who can opt to claim on an annual basis. Chapters 4 and 5 of the *Renewables Obligation: Guidance for Generators* explain in detail how we calculate and issue ROCs¹³.

2.2 Banding was introduced in the 2009 Renewables Obligation Order (ROO)¹⁴ prior to which all accredited stations received one ROC per MWh of generation. Since the introduction of banding, stations are issued ROCs at a rate determined by one or more of the following: the technology used to generate electricity, when the station was accredited and/or the station's installed capacity. The level of support offered can also differ between each of the three orders. Further information on banding can be found in Appendix 3 of the *Renewables Obligation: Guidance for Generators*.

ROCs issued and associated renewable generation in 2018-19

2.3 The 2018-19 year saw an increase in the amount of electricity generated, resulting in an increase in certificate issue. ROC issue in 2018-19 was 5.3% greater than in 2017-18 and 23% greater than in 2016-17. This observed levelling off is due, in part, to the scheme closure

¹² In accordance with the ROC Issue Schedule 2018-2019. [Link to ROC issue schedule:](https://www.ofgem.gov.uk/publications-and-updates/renewable-obligation-certificate-roc-issue-schedule-20182019) <<https://www.ofgem.gov.uk/publications-and-updates/renewable-obligation-certificate-roc-issue-schedule-20182019>>

¹³ [Link to Renewables Obligation: guidance for generators:](https://www.ofgem.gov.uk/publications-and-updates/renewables-obligation-guidance-generators-2) <<https://www.ofgem.gov.uk/publications-and-updates/renewables-obligation-guidance-generators-2>>

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

and the resulting drop in new stations accredited onto the scheme. Renewable generation on the RO was equivalent to 28.5% of the electricity supplied in the UK this year. This rises to 35.9% when including generation from the FIT and CfD schemes, an increase of 4.3% compared the 2017-18 year. The exact figures for 2018-19 and the percentage change from the previous years are shown in **Table 2.1**.

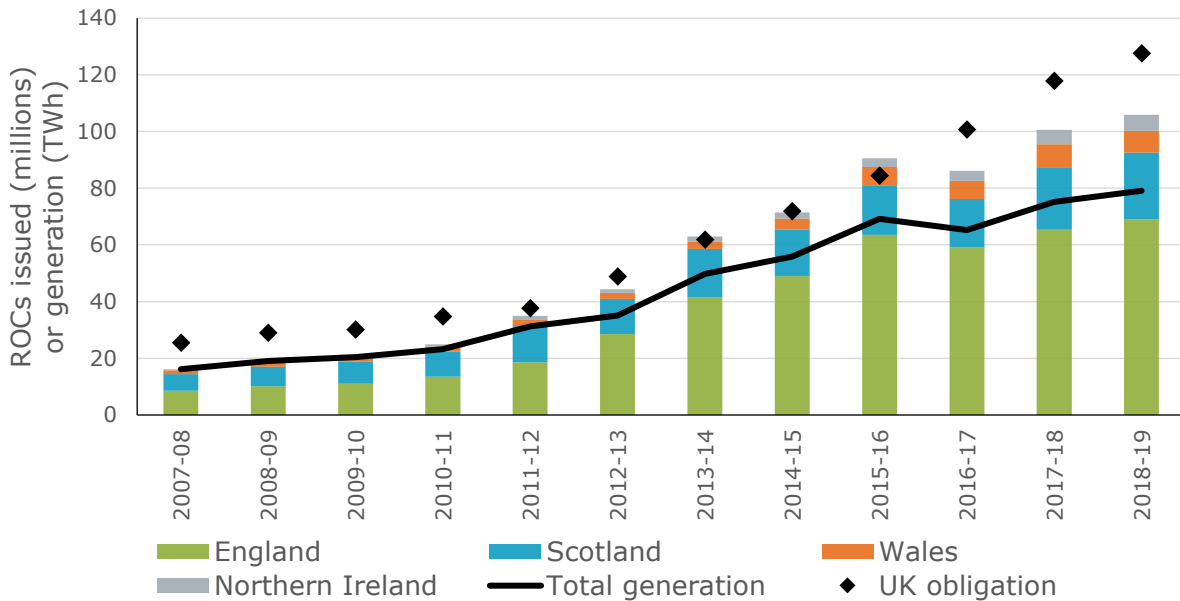
Table 2.1: Comparison of ROCs issued in 2016-17, 2017-18 and 2018-19

	2018-19	Change from 2017-18	Change from 2016-17
Total number of ROCs issued	105,948,003	+5.3%	+23.0%
Associated renewable generation (MWh)	79,102,225	+5.2%	+21.3%
Total UK electricity supply (MWh)	277,385,902	-2.6%	-5.7%
RO renewable generation as a proportion of electricity supply*	28.5%	+2.1pp**	+6.3pp**
Renewable generation including FIT & CfD (MWh)	99,656,265	+10.6%	<i>CfD data unavailable</i>
Renewable generation as a proportion of electricity supply*	35.9%	+4.3pp**	<i>CfD data unavailable</i>

* These figures include generation not exported to the grid which is not captured within the total electricity supply figure, therefore these figures are only representative.

** pp – Percentage Points

2.4 Despite the increase in the number of ROCs issued to 105.9m, as shown in **Figure 2.1** the difference between the Obligation Level (127.6m) and the number of ROCs issued was the highest in the scheme's history. The total shortfall in the number of ROCs was 21.7 million compared to just over 17 million for the previous obligation year, with the shortfall having also increased proportionately in relation to the obligation (17.0% for 2018-19, 14.7% for 2017-18).

Figure 2.1: ROCs issued, obligation level and renewable generation since 2007-08

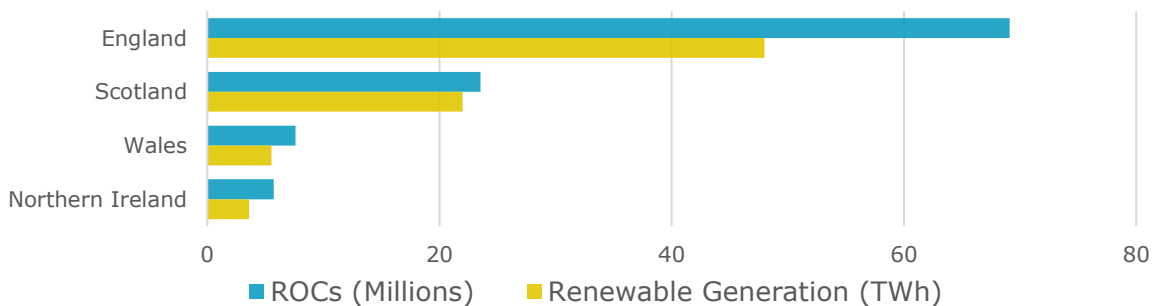
2.5 As shown in **Table 2.2**, since the introduction of banding in 2009, the increase in the number of ROCs issued has outpaced the growth in generation (ie there has been progressively higher amounts of ROCs issued per unit of generation). However, for the 2018-19 obligation year, the ROCs/MWh has remained almost the same at 1.34. Although there was a slight increase (0.09%), the reduction in new stations accredited on the scheme has meant that the ratio between technology types and therefore generation at different banding levels has remained relatively static. For more information on ROC rates and banding refer to Appendix 3 of the Renewables Obligation: Guidance for Generators.

Table 2.2: Average number of ROCs issued per MWh of generation since the introduction of banding

RO Obligation Year	Average number of ROCs issued per MWh of generation	Change from previous obligation year
2009-10	1.04	+4.4%
2010-11	1.07	+2.7%
2011-12	1.12	+4.4%
2012-13	1.27	+13.1%
2013-14	1.27	+0.2%
2014-15	1.28	+0.9%
2015-16	1.31	+2.4%
2016-17	1.32	+0.9%
2017-18	1.34	+1.31%
2018-19	1.34	+0.09%

2.6 The majority of capacity, in absolute terms, accredited under the higher ROC rate technologies is located in England. This can be seen in **Figure 2.2** when looking at the average ROCs per MWh figure for England of 1.44. In Scotland and Wales, more capacity is associated with technologies which receive lower ROC rates, giving ROCs/MWh figures of 1.07 and 1.38 respectively. In Northern Ireland, primarily due to the large number of micro generating stations, many generators receive ROCs at a rate greater than one ROC/MWh, with the average being 1.59. However, the total number of ROCs issued to these generators is small when compared to the scheme as a whole. In 2018-19, 65.2% of all ROCs, representing 60.6% of RO generation, were issued to generating stations located within England, this is very similar to the previous obligation year.

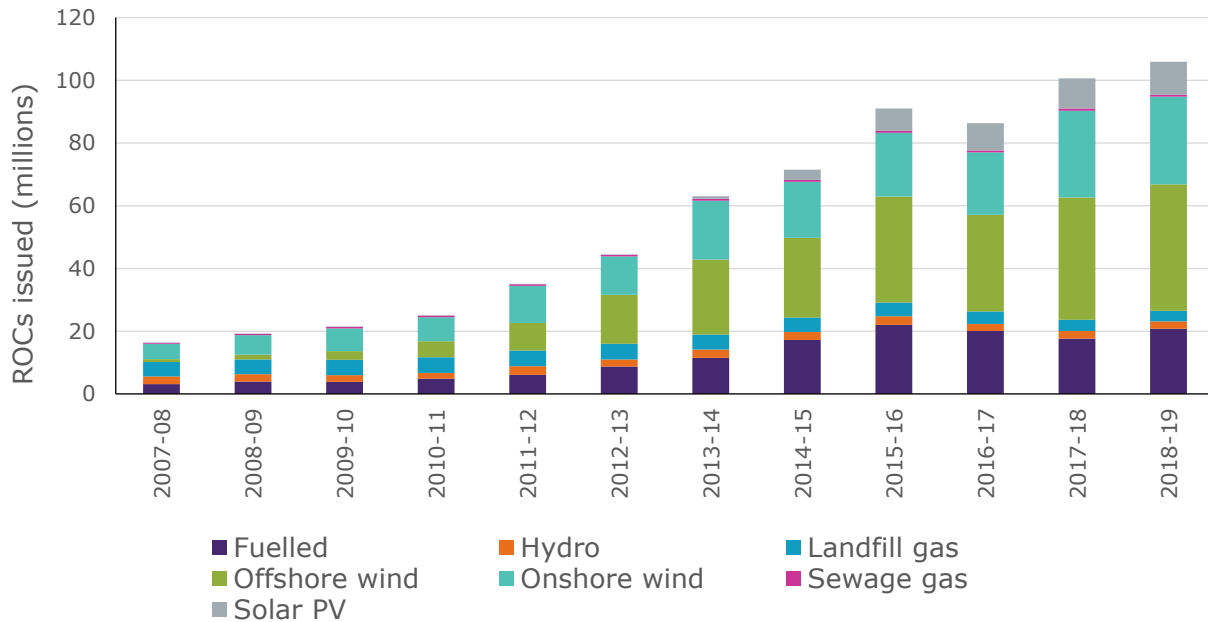
Figure 2.2: ROCs issued and renewable generation by country for 2018-19



Technologies

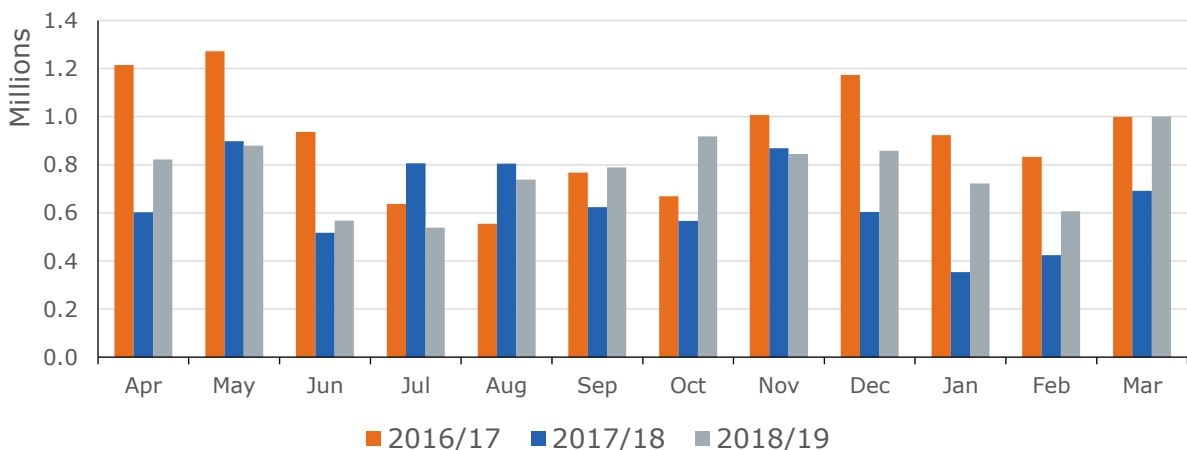
2.7 **Figure 2.3** shows the total number of ROCs issued to different technologies per obligation period since April 2007. Compared to 2017-18, all technology types saw an increase with the exception of landfill gas and sewage gas which decreased by 8.5% and 4.6% respectively. The total number of certificates issued was the highest ever recorded with fuelled stations rising by 17.6%, resulting in the highest number of fuelled ROCs issued since the 2015-16 obligation year. The increases in offshore wind (3.7%) and Solar PV (9.4%) account for the majority of the remaining increase in 2018-19.

Figure 2.3: Annual issue of ROCs by generation technology since 2007-08



2.8 The increase in ROCs issued to fuelled stations was, in part, accounted for by the 9.3m ROCs issued to Drax Power Station – the largest generator accredited under the RO. This is an increase of 19.7% when compared to the 2017-18 obligation year. ROC issue during 2017-18 was likely constrained due to maintenance work carried out on generating units towards the end of the period. The variations in monthly ROC issue for Drax in 2016-17, 2017-18 and 2018-19, are shown on **Figure 2.4** below.

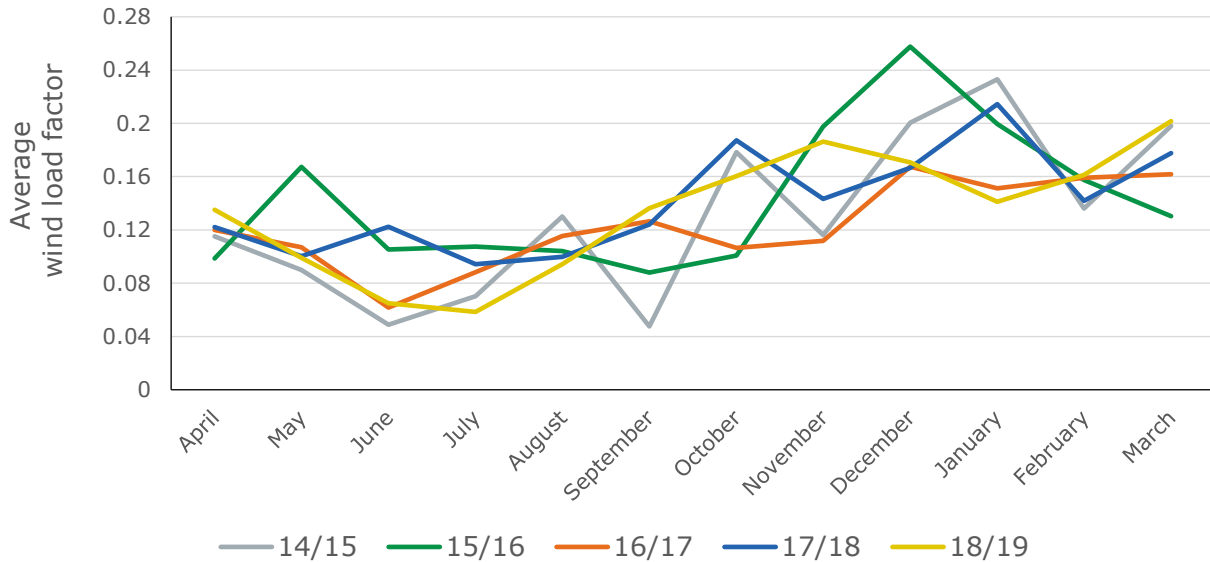
Figure 2.4: Monthly ROC Issue for Drax in 2016-17 to 2018-19



2.9 A breakdown of wind load factors (both offshore and onshore) throughout different scheme years is shown in **Figure 2.5**. Load factors looked at annually for 2018-19 were slightly lower than average levels, however, April 18, September 18 and March 2019 had

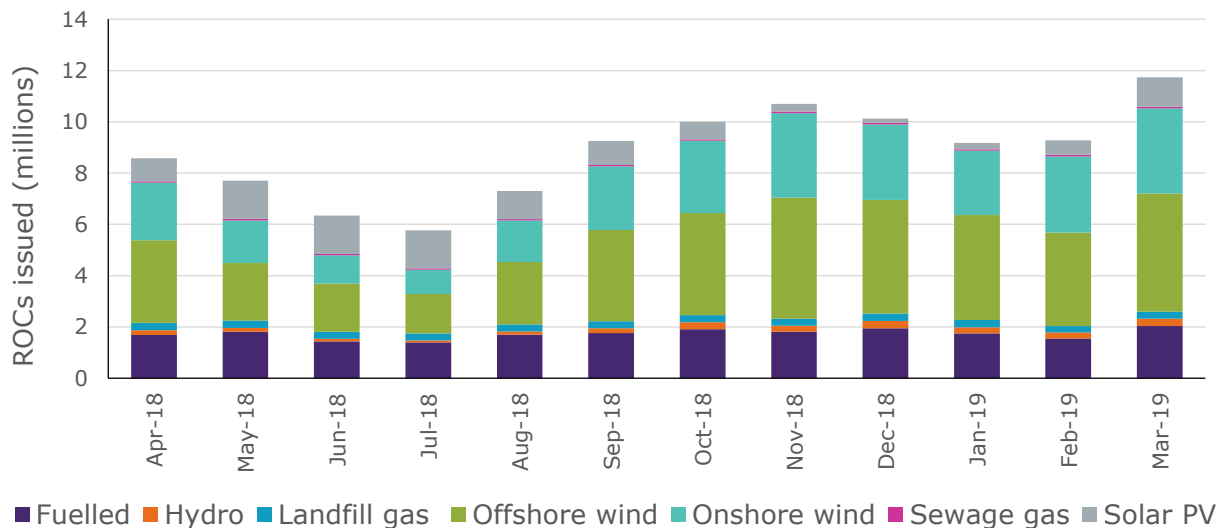
marginally higher load factors than recorded in the previous four obligation years. July 18 and January 19 were both the lowest recorded for that time of year when compared to the previous four years.

Figure 2.5: Average wind load factors by month for 2014-15 to 2018-19



2.10 **Figure 2.6** shows how wind load factors influence ROC issue across the year. The ROC issue peaks (from September through to March) match up with the wind load factor peaks seen in **Figure 2.5**, while the same is true for the lower loading and therefore lower issue months between April and August. Variability is also seen in Solar PV but due to its lower overall capacity on the scheme, does not have as much influence on the monthly ROC issue breakdown. Fuelled stations remain fairly constant throughout the year.

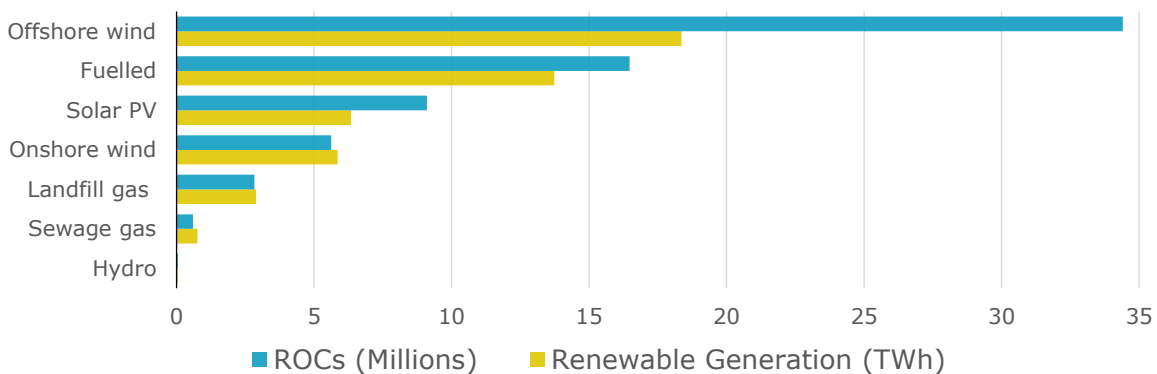
Figure 2.6: ROCs issued each month in 2018-19 by technology



England

2.11 Over 65% of the total ROCs issued on the scheme were issued to stations located in England. **Figure 2.7** shows that both the highest amount of generation and number of ROCs were associated with offshore wind stations. Most fuelled generation comes from larger stations which receive a lower ROC rate than offshore wind. Hydro in England received a net total of 53,071 ROCs, corresponding to around 53.2 GWh of generation, which was not sufficient for a visible line on the chart.

Figure 2.7: ROCs issued and renewable generation in England by technology type for 2018-19

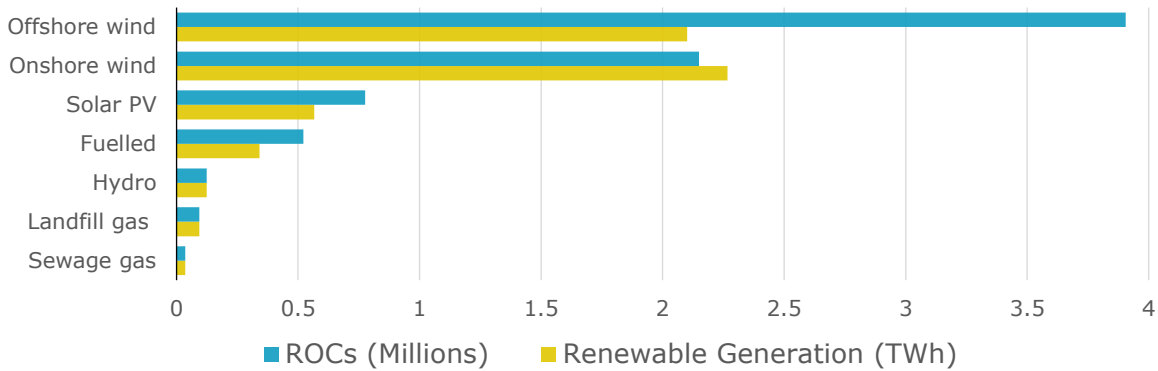


Wales

2.12 As shown in **Figure 2.8**, onshore wind was the largest technology in Wales in terms of renewable generation in 2018-19 at nearly 2.27 TWh, in contrast to 2017-18 which saw Offshore wind as the largest technology for generation. Although offshore is still the highest in terms of ROCs issued (3.9m ROCs for 2018-19), offshore wind generation has dropped by 16.7% (from 2.5TWh in 2017-18 to 2.1TWh for 2018-19). This, in part, was due to reduced generation from the Gwynt y Mor offshore wind farm (which accounts for 44% of all ROCs issued to stations in Wales) from just over 4m ROCs in 2017-18 to 3.35m ROCs in 2018-19.

Overall ROC issue for generation in Wales has gone down by around 9% compared to 2017-18 (from 8.4m to 7.6m ROCs).

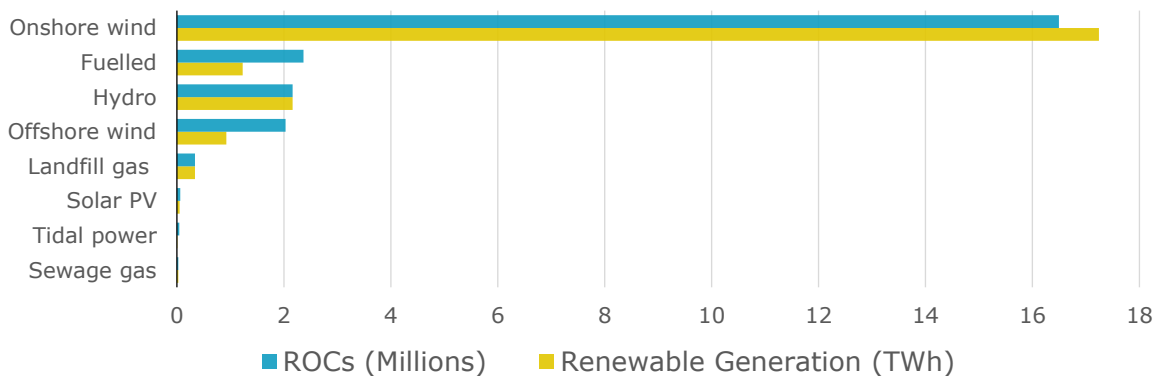
Figure 2.8: ROCs issued and renewable generation in Wales by technology type for 2018-19



Scotland

2.13 **Figure 2.9** shows that renewable generation in Scotland is dominated by onshore wind, with 75% of all Scottish ROCs issued to onshore wind stations and over 78% of all generation produced from this technology (17.2TWh for 2018-19 up 4.3% from 2017-18). Generation from Scottish onshore wind is the second largest contributor to UK generation, only behind offshore wind located within England. Second biggest technology, in terms of generation in Scotland is Hydro with 2.2TWh (up 2.5% from 2017-18) and then fuelled with 1.2TWh (up 11.0% from 2017-18).

Figure 2.9: ROCs issued and renewable generation in Scotland by technology type for 2018-19



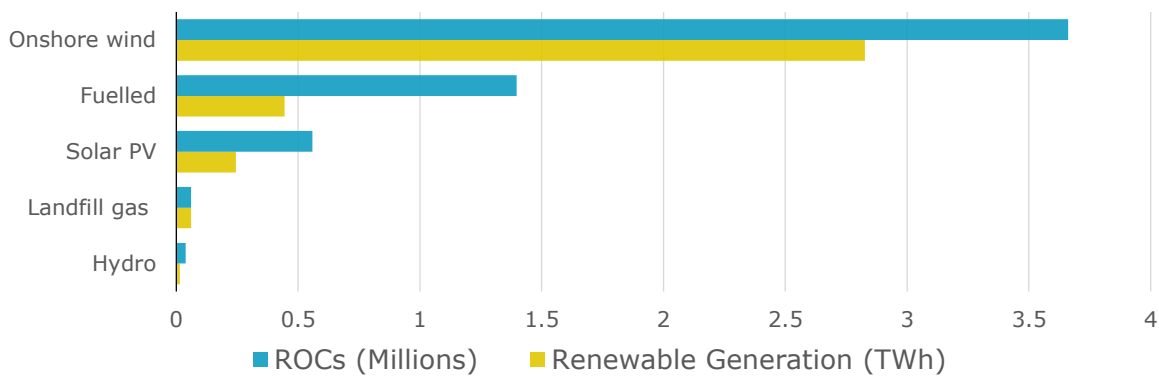
Northern Ireland

2.14 Total generation in Northern Ireland rose again in 2018-19, with generation rising by 11.53% and ROC issue by 13.57% compared to 2017-18. **Figure 2.10** shows how renewable

electricity generation in Northern Ireland still predominantly comes from onshore wind, accounting for almost 80% of generation in Northern Ireland.

2.15 In contrast to the rest of the UK, Northern Ireland also has significant numbers of smaller generators. Wind turbines with a DNC of less than 250kW accounted for 35.49% of total ROCs issued in Northern Ireland and 59.53% of all solar ROCs were issued to stations with a capacity 50kW and below.

Figure 2.10: ROCs issued and renewable generation in Northern Ireland by technology type for 2018-19



Revoked and retired ROCs

2.16 ROCs can be revoked if for example we find that the number initially issued was incorrect. We may identify such errors through desk based data investigations, audits of generating stations (see Chapter 5), or where the generator notifies us themselves.

2.17 This year we revoked 40,515 ROCs which were issued in respect of the 2018-19 obligation year. This is significantly higher than the 13,170 ROCs revoked in 2017-18. This figure has historically been very variable as a large proportion of ROC revocations are a consequence of earlier data submission errors by a generator. In terms of the breakdown of ROCs revoked, just under 85% of the total ROCs revoked came from 11 stations, with 45% coming from just 3 stations. Showing that the size of the station in question can have a significant impact on the number of ROCs affected.

2.18 We are unable to revoke ROCs if a supplier has already presented the ROCs to us for compliance. In this situation we must withhold an equivalent number of ROCs from being issued to the station in the future.¹⁵ This year we withheld 11,858 ROCs from being issued,

¹⁵ Article 25 of the RO, 41A of the ROS and article 37A of the NIRO

compared to just 691 ROCs withheld in 2017-18. Similar to revoked ROCs, this figure varies significantly year on year.

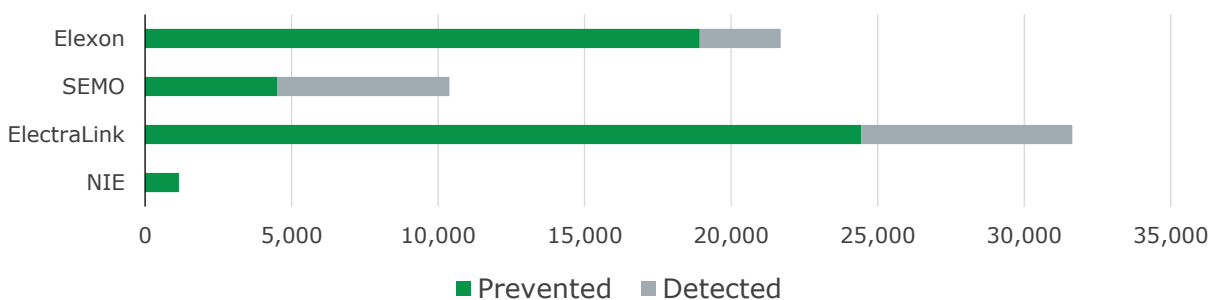
2.19 The registered holder of a ROC may voluntarily retire it on the Register at any time, and it can no longer be used for RO compliance. A registered holder may retire a ROC for a number of reasons, for example if they can no longer use it towards their obligation because it has already expired. This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

Monthly ROC validation

2.20 In December 2015 we implemented a method of validating the output data submitted to us on a monthly basis for export only stations. By comparing submissions against export data provided by third-parties, we prevent error and fraud by identifying and rectifying errors, both prior to and proceeding ROC issue (ROCs saved). We currently use five sources of data to validate ROC claims: data from Elexon and Single Electricity Market Operator (SEMO) cover the larger generating stations in GB and Northern Ireland respectively, and data from ElectraLink and Northern Ireland Electricity networks (NIE) covers most of the smaller generators in the UK. Data from Scottish Power also covers stations settled entirely within the Scottish Power network.

2.21 Through these methods we identified 68 submissions in 2018-19 which resulted in, or would result in, over-issue – a total of 64,880 ROCs. **Figure 2.11** shows that the majority of this error was 'prevented', meaning that the submission was corrected prior to ROC issue. In some cases, we were only able to correct the submission following ROC issue, in which case any excess ROCs issued were revoked (please see section 2.16 and 2.17 for more information). This is classified as 'detected' error. Scottish Power data covers a relatively small number of generators and no ROCs were saved from this source in 2018-19.

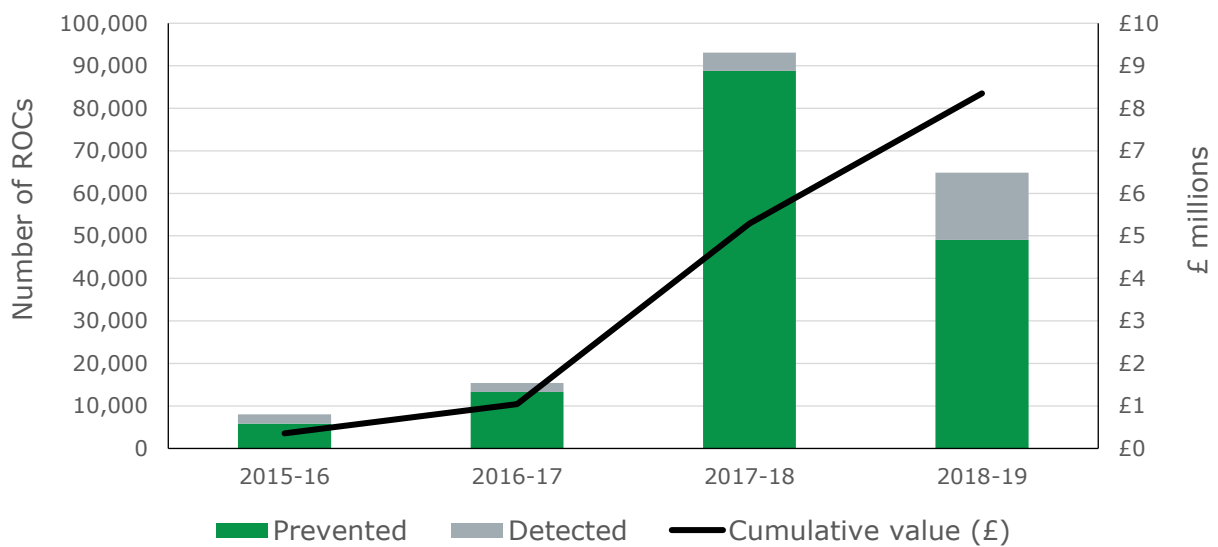
Figure 2.11: ROCs saved from monthly validation checks by source



2.22 **Figure 2.12** shows the ROCs saved as a result of the validation checks since the process was initiated in 2015-16. When initiated we did not have the MPAN numbers for many generating stations, limiting the effectiveness of this work. A project took place towards the

end of 2016-17 whereby MPAN numbers were added for those stations where we did not have them, and validated for those where we did. As a result many more stations are now covered by our validation checks, the effect of which can be seen in the increase in ROCs saved between 2016-17 and 2017-18. The reduction in ROCs saved between 2017-18 and 2018-19 is normal variation. This is expected due to the variability in the number of errors being made and the number of ROCs each error may effect. In total, to the end of 2018-19 over £8.3m of error has been avoided as a result of this work.

Figure 2.12: ROCs saved and cumulative value from monthly validation checks since 2015-16



3. Biomass sustainability

Chapter summary

In the 2018-19 obligation period, 361 fuelled generating stations were required to report their biomass fuels against the land and greenhouse gas emissions criteria, collectively known as the sustainability criteria. Compliance was formally linked to ROC issue for all bioliquid stations and all solid biomass or biogas¹⁶ stations greater than 1MW. Compliance with the sustainability criteria was not linked to ROC issue for the remaining 229 solid biomass and biogas stations smaller than 1MW. The analysis in this chapter is based upon the data provided by these stations as part of their monthly and annual reporting requirements.

3.1 All stations using bioliquid, solid biomass or biogas with a Declared Net Capacity (DNC) of more than 50kW, must report against land and greenhouse gas criteria (known collectively as the sustainability criteria) and provide additional information annually on the fuels used (known as the profiling data).¹⁷

3.2 There are two criteria that a fuel must satisfy to be classed as sustainable, these are:

- The land criteria – this focuses on the land from which the biomass was sourced and whether it meets the requirements of the legislation,¹⁸ and
- The life-cycle greenhouse gas (GHG) emissions associated with the biomass. For solid biomass and biogas this is in grams of CO₂ equivalent per megajoule of electricity (gGHG/MJ electricity). For bioliquids, it is as a percentage emissions saving against the fossil fuel comparator.¹⁹

3.3 All bioliquid stations and solid and gas stations with a Total Installed Capacity (TIC) greater than or equal to 1MW must report against the criteria each month on the Register as part of their ROC claim. Reporting on and meeting the sustainability criteria are formally linked

¹⁶ For biogas details please refer to the gasification and anaerobic digestion sections of this chapter.

¹⁷ Articles 82, 83 and 84 of the ROO 2015 (as amended), Articles 54A and 54B of the ROS 2009 Order (as amended) and Articles 46A and 46B of the NIRO 2009 Order (as amended).

¹⁸ [See our 'Sustainability Criteria Guidance' here](https://www.ofgem.gov.uk/publications-and-updates/renewablesobligation-sustainability-criteria): <<https://www.ofgem.gov.uk/publications-and-updates/renewablesobligation-sustainability-criteria>>

¹⁹ The fossil fuel comparator is specified in Paragraph 19, Annex V, Part C of the Renewable Electricity Directive as 91gCO₂e/MJ

to ROC issue and certificates can be postponed, revoked or withheld if the sustainability criteria are not met.

3.4 On an annual basis, this monthly information is independently verified by an auditor with a report submitted to Ofgem for review. The report is undertaken by an independent auditor in accordance with ISAE 3000 (Revised) (the International Standard on Assurance Engagements)²⁰. Failure to submit by the deadline will result in future ROCs, up to the number claimed in the preceding obligation period, being withheld until the report is submitted and approved.

3.5 Operators presented 118 audit reports to us in 2018-19. Of the reports submitted 82 were of an adequate standard, of which 13 were for bioliquid stations, 67 for solid biomass or biogas stations and 2 that include both bioliquids and solid biomass. There are 14 accredited RO stations that have not yet presented an audit report and 36 reports that have not met the required standard.²¹ We have suspended the issuance of ROCs to these stations as a result.

3.6 Stations using solid biomass or biogas with a TIC of under 1MW but a DNC greater than 50kW are not required to report monthly on their fuels but are required to report against the sustainability criteria in their annual profiling data.²² The RO legislation states that the information in the profiling data must be supplied to the best of the operator's knowledge and belief. It does not need to be verified by an independent auditor and is not linked to ROC issue.²³

3.7 There are a number of stations that have not yet been granted RO accreditation, but will be eligible to receive ROCs for generation in the 2018-19 obligation period if accredited. It is important to note that this chapter only includes the information for stations that have been granted accreditation and had their sustainability information approved at the time of writing.²⁴

3.8 The information in this chapter is based on the data provided by the operators of fuelled stations, as part of their monthly and annual reporting requirements at the time of writing this chapter. Some annual sustainability information has not yet been approved and therefore this information may be subject to change. In order for comparisons to be made, the

²⁰ Or equivalent standard

²¹ Correct as of 2 January 2020.

²² Annual profiling data contains information submitted by the operator regarding the sustainability characteristics of their fuel. This includes information such as; type of biomass, the form of biomass, country of origin and whether it was wood or derived from wood.

²³ Article 82 of the ROO 2015 (as amended), Article 54 of the ROS 2009 Order (as amended) and Article 46 of the NIRO 2009 Order (as amended).

²⁴ 2 January 2020

Renewables Obligation: Annual Report 2015-16,²⁵ Renewables Obligation: Annual Report 2016-17,²⁶ Renewables Obligation: Annual Report 2017-18²⁷ and associated Sustainability Datasets²⁸ were utilised, which contain the sustainability information for stations that generated in the 2015-16, 2016-17 and 2017-18 obligation periods.²⁹ The sections below segregate the generating stations into gasification, anaerobic digestion (AD), direct combustion of solid biomass and bioliquid stations³⁰.

Gasification stations³¹

3.9 Sixty-two gasification stations burnt 937.14 million m³ of syngas³² in 2018-19. **Table 3.1** shows how stations reported their consignments³³ against the sustainability criteria. There are no instances where a consignment has not met the criteria. For stations that reported against the GHG criteria, the weighted average GHG emission figure is 24.35 gCO₂e/MJ.³⁴ This is significantly higher in comparison to previous years; more than the 2017-18 weighted average emission figure of 10.07 gCO₂e/MJ.

²⁵ [See our 'Annual Report 2015-16' here](https://www.ofgem.gov.uk/publications-and-updates/renewables-obligation-roannual-report-2015-16): <https://www.ofgem.gov.uk/publications-and-updates/renewables-obligation-roannual-report-2015-16>

²⁶ [See our 'Annual Report 2016-17' here](https://www.ofgem.gov.uk/publications-and-updates/renewables-obligation-roannual-report-2016-17): <https://www.ofgem.gov.uk/publications-and-updates/renewables-obligation-roannual-report-2016-17>

²⁷ [See our 'Annual Report 2017-18' here](https://www.ofgem.gov.uk/publications-and-updates/renewables-obligation-ro-annual-report-2017-18): <https://www.ofgem.gov.uk/publications-and-updates/renewables-obligation-ro-annual-report-2017-18>

²⁸ [See our '2015-16 Biomass Sustainability Dataset' here](https://www.ofgem.gov.uk/publications-and-updates/biomass-sustainability-dataset-2015-16), ['2016-17 Biomass Sustainability Dataset' here](https://www.ofgem.gov.uk/publications-and-updates/biomass-sustainability-dataset-2016-17) and our ['2017-18 Biomass Sustainability Dataset' here](https://www.ofgem.gov.uk/publications-and-updates/biomass-sustainability-dataset-2017-18):

<https://www.ofgem.gov.uk/publications-and-updates/biomass-sustainability-dataset-2015-16>

<https://www.ofgem.gov.uk/publications-and-updates/biomass-sustainability-dataset-2016-17>

<https://www.ofgem.gov.uk/publications-and-updates/biomass-sustainability-dataset-2017-18>

²⁹ The 2015-16, 2016-17 and 2017-18 Biomass Sustainability Datasets and Annual Reports have been utilised for comparison purposes only and may not contain information for stations that were granted accreditation after the reports were published.

³⁰ There are two generating stations which use both solid biomass and bioliquid fuels and there is one generating station which uses both solid biomass fuel and syngas from gasification. These stations appear in each relevant section.

³¹ Gasification converts fuel into a synthetic gas by partial combustion. This can then be used in a generating station. 'Gasification' is defined in Article 2 of the ROO (as amended), ROS 2009 (as amended) and NIRO 2009 (as amended).

³² Syngas or synthetic gas produced from gasification.

³³ Where we refer to a consignment in the context of stations greater than or equal to 1MW, this refers to a single consignment submission for one month. For stations less than 1MW, this is just reported once in the year.

³⁴ The GHG emission threshold for biogas stations is 79.2 gCO₂e/MJ.

Table 3.1: Consignments reported by gasification stations against the sustainability criteria, split by capacity

		Gasification Stations <1MW ³⁵	Gasification Stations ≥1MW
Meets the land criteria	Yes	59	0
	No	0	0
	Exempt	0	32
	Unknown	0	0
Meets the GHG emissions criteria	Yes	52	0
	No	0	0
	Exempt	0	32
	Unknown	7	0

N.B. The number of consignments reported varies between stations.

3.10 All consignments burnt in these 62 stations were derived from woody biomass. For consignments that were not derived from waste wood,³⁶ **Table 3.2** shows that 92.81% of syngas burnt in these stations was derived from soft wood with 7.19% derived from mixtures containing softwood and hardwood.

Table 3.2: Quantity of non-waste wood derived syngas based on wood type utilised in gasification stations

	m ³ of Syngas	% contribution
100% Softwood	149,987,238.1	92.81%
99-75% Softwood, 1-25% Hardwood	11,621,875.5	7.19%
25-50% Softwood, 51-75% Hardwood	0	0%
100% Hardwood	0	0%
Total	161,609,113.6	100%

3.11 Most of the non-waste wood was sourced from within the UK where the intention was to retain, restock or naturally regenerate all, or the majority of, the forest within five years. For the first time, it was reported that some wood used in gasification stations was sourced from Overseas (Non EU), originating from Russia. No wood was reported as likely to be a protected or threatened species.

3.12 Of the total syngas utilised in generating stations with a TIC greater than 1MW, 775.53 million m³ was derived from waste wood. All of this waste wood was sourced from within the UK. As these fuels are derived from a waste, these generating stations did not need to report

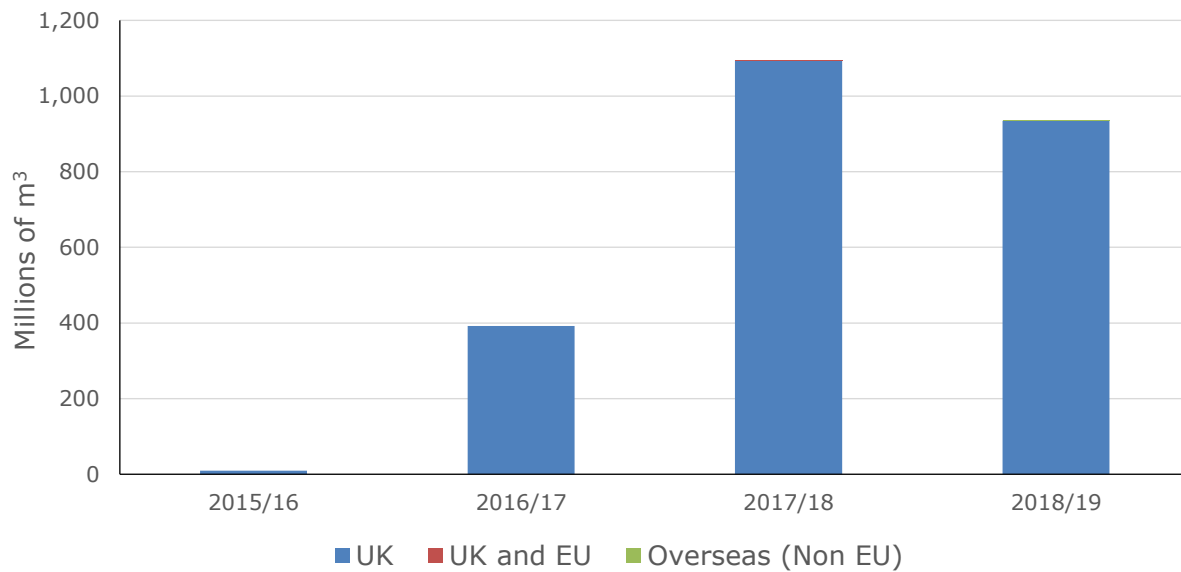
³⁵ The sustainability criteria for gasification stations less than 1MW are not formally linked to ROC issue.

³⁶ For consignments derived from waste, operators of generating stations do not need to complete the woody biomass section of the profiling data.

against the woody biomass questions in the profiling data and so it is unknown whether the fuel was derived from softwood or hardwood.

3.13 As shown in **Figure 3.1**, the quantity of syngas burnt in gasification stations in 2018-19 was lower in comparison to 2017-18 but notably greater than the 2015-16 and 2016-17 periods.

Figure 3.1: A comparison of the quantities of syngas burnt in gasification stations in the 2015-16 to 2018-19 obligation periods



Anaerobic digestion stations

3.14 **Table 3.3** shows the number of consignments reported by AD stations against the sustainability criteria. No consignments were reported as having not met the criteria. For stations that reported a figure, the weighted GHG emission figure was 38.31 gCO₂e/MJ³⁷. This is a slight decrease of 1.39 gCO₂e/MJ in comparison to 2017-18 and is against the historical trend which saw the average GHG emission reported by AD stations rise in each of the last three periods.

³⁷ The GHG emission threshold for biogas stations is 79.2 gCO₂e/MJ.

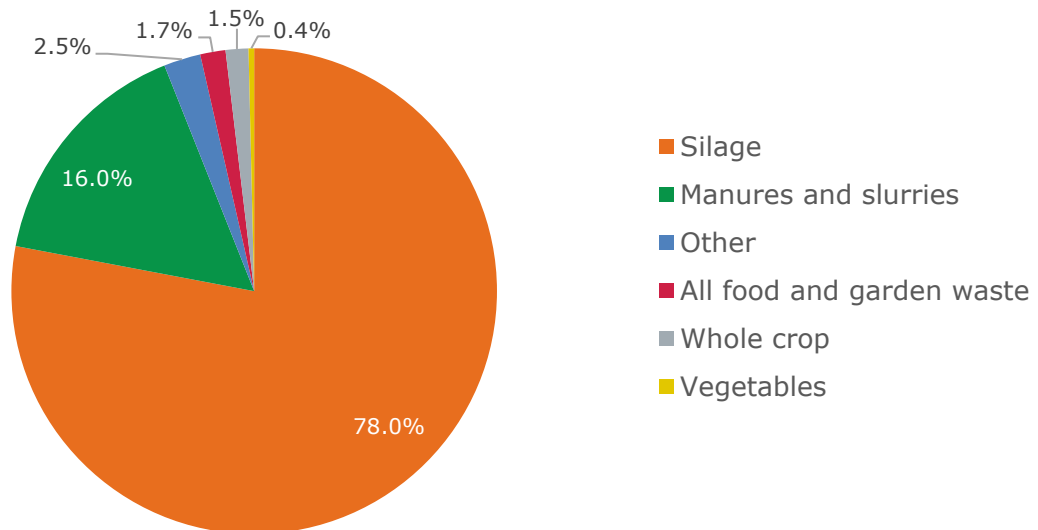
Table 3.3: Consignments reported by anaerobic digestion stations against the sustainability criteria, split by capacity

		AD Stations <1MW ³⁸	AD Stations ≥1MW but <25MW	AD Stations ≥ 25MW
Meets the land criteria	Yes	119	195	0
	No	0	0	0
	Exempt	183	531	12
	Unknown	19	0	0
Meets the GHG emissions criteria	Yes	16	239	0
	No	0	0	0
	Exempt	176	487	12
	Unknown	129	0	0

N.B. The number of consignments reported varies between stations.

3.15 There are currently 91 AD stations with a TIC less than 1MW that reported against the sustainability criteria. Of these, the 88 that reported fuel quantities burnt 364.06 million m³ of biogas.³⁹ **Figure 3.2** illustrates that the vast majority of this gas was derived from the digestion of silage, with manures and slurries also making a significant contribution. Silage is the largest contributor to total AD gas and represents a larger proportion in comparison to 2017-18. The 'other' feedstock category consists of abattoir waste, waste oils and fats, sludge, bellygrass, beet, dairy waste and sludge.

Figure 3.2: Type and proportion of feedstocks used (by volume of gas burnt) in anaerobic digestion stations less than 1MW but greater than 50kW

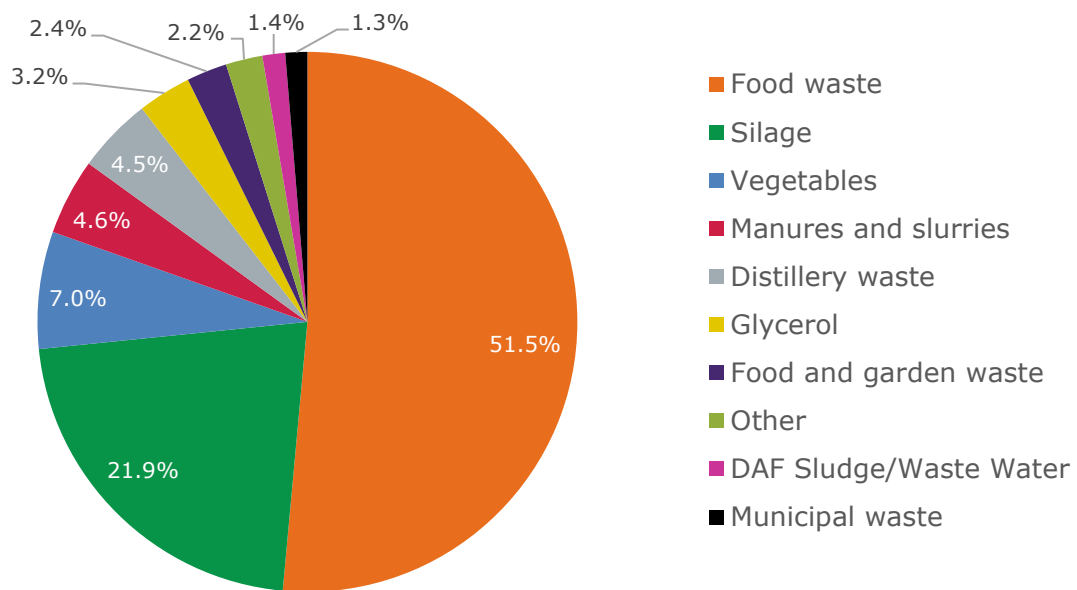


³⁸ The sustainability criteria for anaerobic digestion stations less than 1MW are not formally linked to ROC issue.

³⁹ There are a number of stations whose fuel measurement and sampling procedures do not require them to keep records of individual feedstocks, and so report a mixture on their profiling data.

3.16 In 2018-19, 25 AD stations over 1MW but less than 25MW reported against the sustainability criteria. Collectively they burnt 218.39 million m³ of biogas, which is 27.61 million m³ less than 2017-18. Similarly to 2017-18, the majority of this is derived from food waste as seen in **Figure 3.3**, although the proportion has slightly dropped to 51.46% in comparison to over 57% last year. The 'other' feedstocks consist of blood, whole crops, biodegradable waste, biogas fats, alcohol, whey permeate and tallow; all of which contribute just 2.02% towards the total quantity of biogas used in these stations.

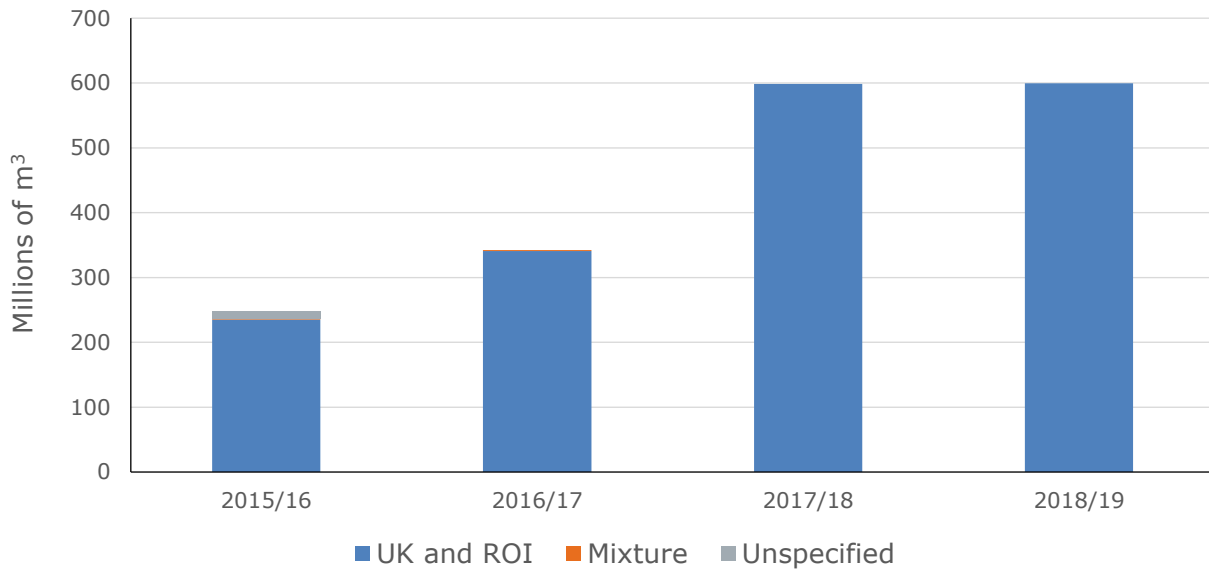
Figure 3.3: Type and proportion (by gas) of feedstocks used in anaerobic digestion stations greater than 1MW but less than 25MW



3.17 There was only one AD station with a TIC greater than 25MW that was required to report against the sustainability criteria. It burnt 8.12 million m³ of biogas. This station predominantly uses fossil fuel but is supplemented with AD gas from waste water that arises from on-site processes.

3.18 In **Figure 3.4** there was a slight increase in the quantity of fuel used in comparison to 2017-18. However, there was significantly more fuel utilised than in 2015-16 and 2016-17 obligation periods. All consignments were sourced from the UK and Republic of Ireland.

Figure 3.4: A comparison of the quantities of biogas used in anaerobic digestion stations in the 2015-16 to 2018-19 obligation periods



Solid biomass stations

3.19 **Table 3.4** shows solid biomass consignments burnt in direct combustion stations that have reported against the sustainability criteria. There are no cases of non-compliance against the GHG emissions criteria for a consignment burnt in a station greater than 1MW, in comparison to 2017-18 which had one case. The weighted average GHG emission figure for stations that reported a value is 26.71 gCO₂e/MJ⁴⁰; an increase of 1.51 gCO₂e/MJ compared to 2017-18.

⁴⁰ The GHG emissions threshold is 79.2 gCO₂e/MJ for solid biomass stations. Any stations classed as a 'post-2013 dedicated biomass station' have a threshold of 66.7 gCO₂e/MJ. 'Dedicated biomass' is defined in Schedule 5 of the ROO and Schedule 2 of the ROS and NIRO Orders.

Table 3.4: Solid biomass consignments reported by direct combustion stations against the sustainability criteria, split by capacity

		Solid Biomass Stations <1MW ⁴¹	Solid Biomass Stations ≥1MW but <25MW	Solid Biomass Stations ≥ 25MW
Meets the land criteria	Yes	13	268	1,011
	No	0	0	0
	Exempt	7	310	222
	Unknown	0	0	0
Meets the GHG emissions criteria	Yes	11	284	1,074
	No	0	0	0
	Exempt	7	294	159
	Unknown	2	0	0

N.B. The number of consignments reported varies between stations.

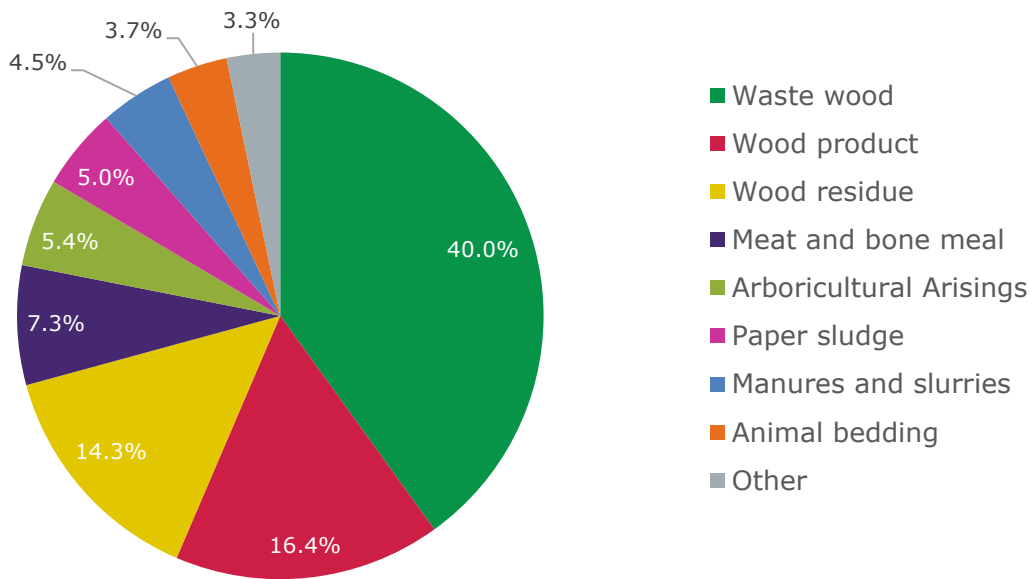
3.20 Seventeen stations with a TIC under 1MW reported against the sustainability criteria burnt 62144.77 tonnes of solid biomass in direct combustion stations; all of which was woody biomass. Waste wood had the greatest contribution to this total with 54.70%, which is similar in comparison to 2017-18 with 53%. Wood residues, which include forestry residues, processing residues, arboricultural arisings and sawmill residues contributed 16.57%. Wood products made up the remaining 28.73%; this being virgin wood and woodchip that hasn't been specified as one of the wood residues.

3.21 Similarly to the 2017-18 obligation period, a broader range of fuels were burnt by the 25 stations with a TIC greater than 1MW, but less than 25MW; this is illustrated in **Figure 3.5**. Of the 1.97 million tonnes of solid fuel burnt in direct combustion, wood fuels represented the majority with the greatest proportion attributed to waste wood (40.05%). Meat and bone meal (MBM), paper sludge and manures/slurries also make significant contributions, similar to the 2017-18 obligation period. The 'other' fuels used include draff⁴², pet food, plant tissue, grass seed husk, digestate and sludge.

⁴¹ The sustainability criteria for direct combustion stations less than 1MW that use solid biomass are not formally linked to ROC issue.

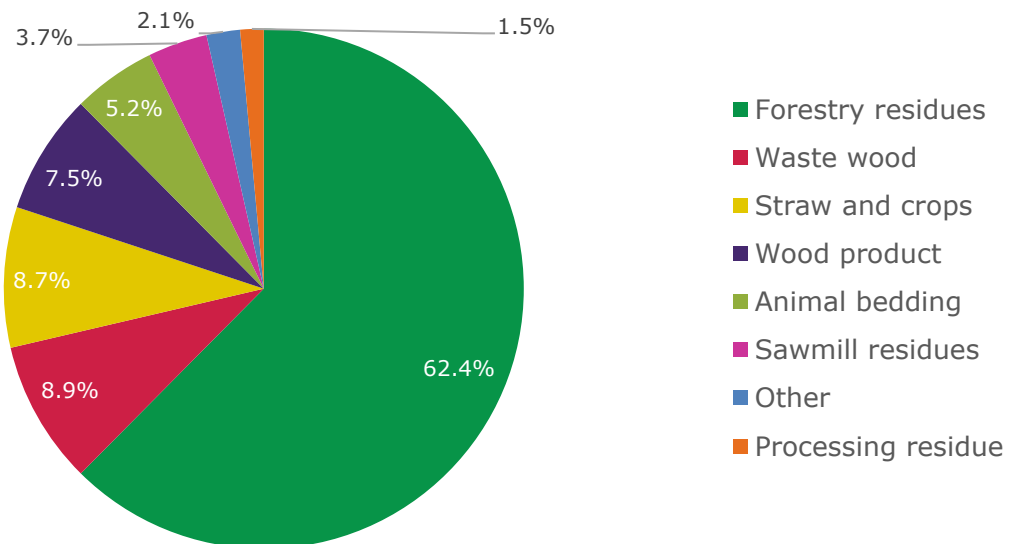
⁴² Residue of the fermentation process from brewing.

Figure 3.5: Type and proportion of solid biomass used in direct combustion stations greater than 1MW but less than 25MW



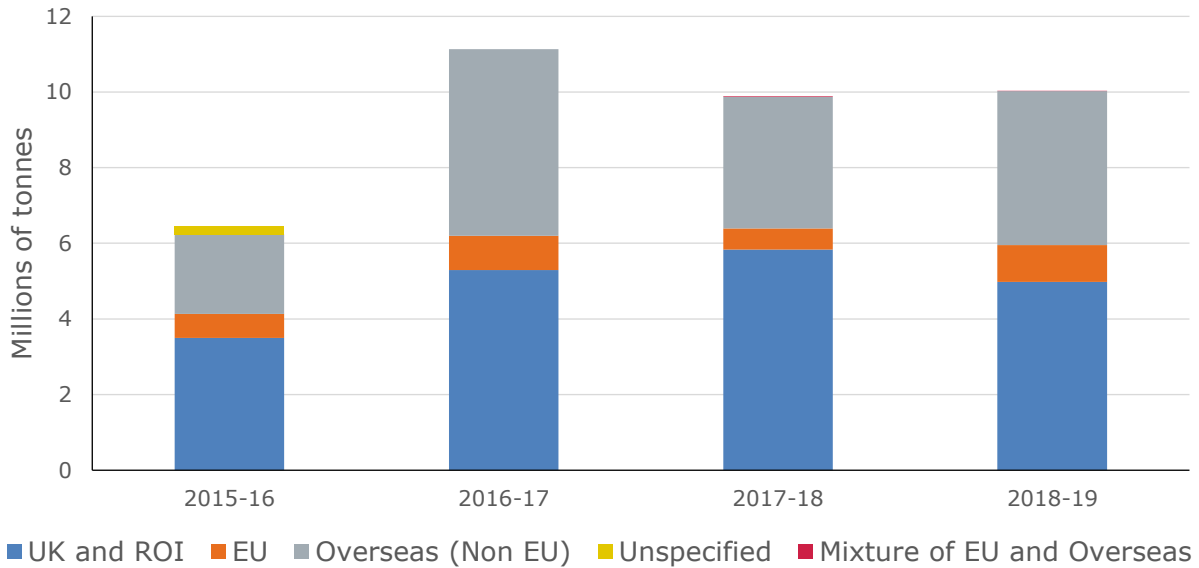
3.22 There are 15 stations with a TIC greater than 25MW that reported against the sustainability criteria, burning 7.98 million tonnes of solid biomass. Forestry residues contributed the greatest amount with 62.42%, which is higher than 2017-18 with 55%. Waste wood and wood products contributed slightly less when compared to the 2017-18 reporting period. Straw and animal bedding are the only non-wood fuels to make notable contributions to the total, as seen in **Figure 3.6**. Arboricultural residues, olive pellets, oat pellets and meat and bone meal were also burnt but only contribute 2.09% of the total solid fuel burnt, indicated in the chart as 'other'.

Figure 3.6: Type and proportion of solid biomass used in direct combustion stations greater than 25MW



3.23 During 2018-19 we saw a slight increase in the quantity of solid biomass burnt in direct combustion, compared to 2017-2018, shown in **Figure 3.7**. Whilst there has been a reduction in the quantity of biomass that was grown or obtained in the UK and ROI, there has been an increase from the EU and overseas (Non EU).

Figure 3.7: A comparison of the quantities of solid biomass used in direct combustion stations in the 2015-16 to 2018-19 obligation periods



Bioliquid stations

3.24 Although certain bioliquids are exempt from the land criteria, there are no exemptions for bioliquids in regard to the GHG emissions criteria. Wastes are exempt from the land criteria but the GHG emissions criteria still needs to be reported against as evidenced in **Table 3.5**. The weighted GHG emissions saving for bioliquid consignments was 89.88% in comparison to the fossil fuel comparator.⁴³ This is a significantly greater reduction than required under the current thresholds⁴⁴ and is similar to the 2017-18 reduction of 89.9%.

⁴³ The fossil fuel comparator is specified in Paragraph 19, Annex V, Part C of the Renewable Electricity Directive as 91gCO₂e/MJ.

⁴⁴ From 1 January 2018, any consignment of bioliquid produced by an installation that first started producing liquid fuel from biomaterial before 6 October 2015 is required to meet the current GHG threshold of 50%. Any consignment of bioliquid produced by an installation that first started producing liquid fuel from biomaterial on or after 6 October 2015 is required to meet a GHG threshold of 60%. For bioliquids used before 1 January 2018, the current GHG threshold of 50% must be met.

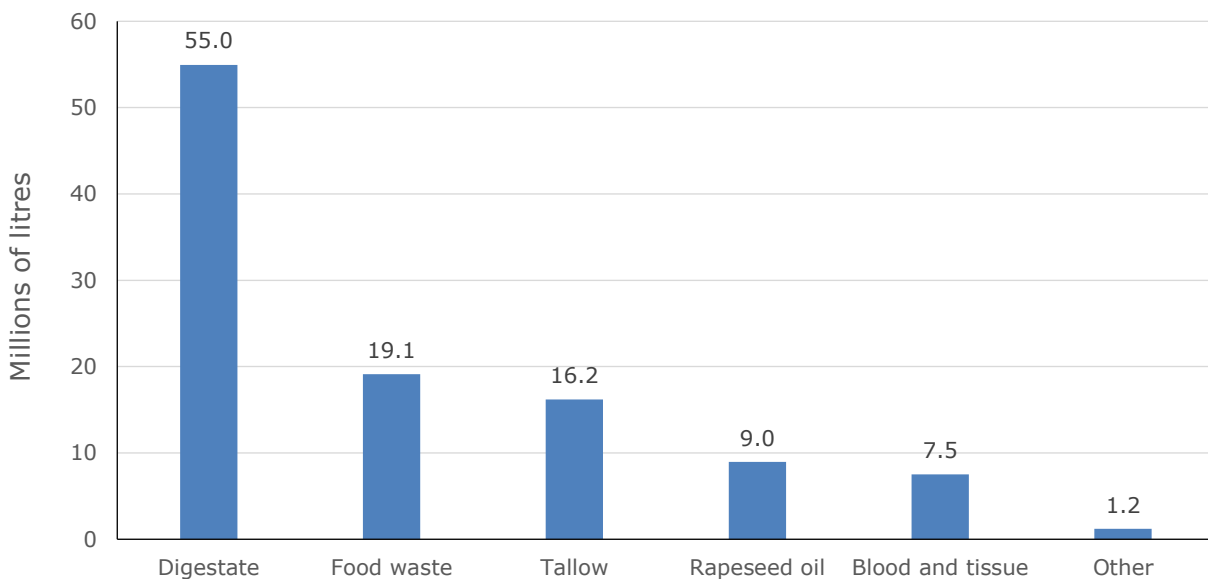
Table 3.5: Consignments of bioliquid reported against the sustainability criteria

	Yes	No	Exempt	Unknown
Meets the land criteria	23	0	132	0
Meets the greenhouse gas criteria	155	0	0	0

N.B. The number of consignments reported varies between stations.

3.25 There were zero cases of non-compliance of bioliquid consignments against the sustainability criteria. This is a significant reduction compared to 2017-18, which saw 11 cases where consignments did not meet the criteria or reported 'unknown'.

3.26 The 15 stations that reported against the sustainability criteria burnt 107.96 million litres of bioliquid consignments in 2018-19; a 12.34 million litre decrease compared to 2017-18. Digestate, food waste and tallow made the largest contributions of 50.9%, 17.7% and 15.0% respectively, as showing in **Figure 3.8**. 'Other' consignments consist of used cooking oil, fish oil and glycerol.

Figure 3.8: The total volumes of bioliquid reported by consignment

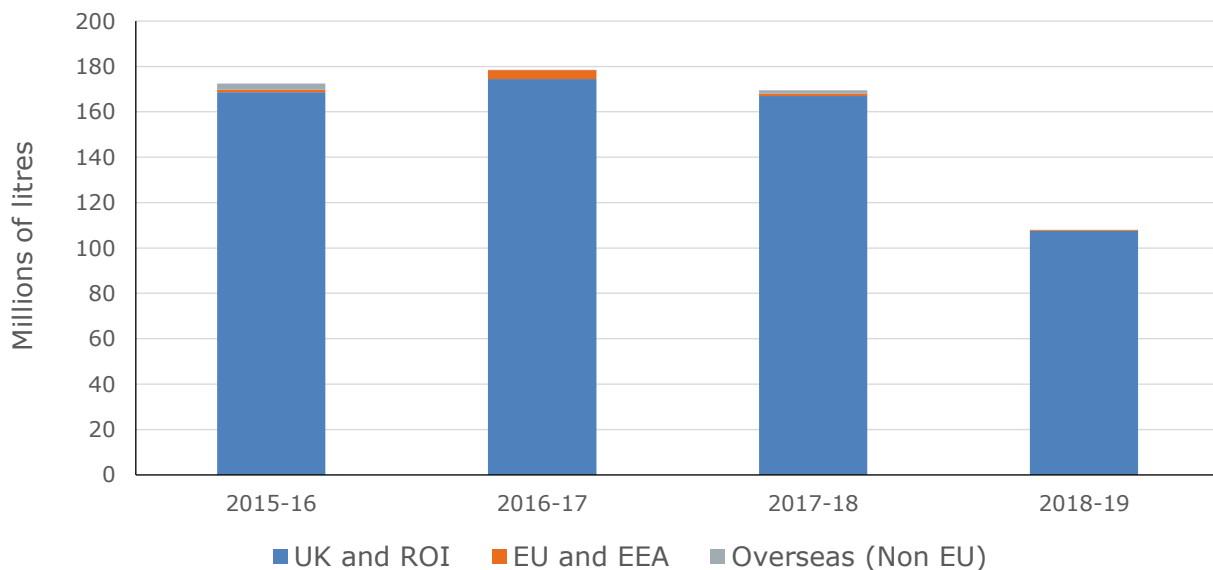
3.27 Generating stations that used bioliquids from starch-rich crops, sugars, oil crops or any other crops grown as a main crop primarily for energy purposes on agricultural land are required to report the energy content of the fuel in their profiling information.⁴⁵ Only two fuels were identified as meeting at least one of the four definitions. The average energy content of this fuel was 36.43 MJ/litre.

⁴⁵ Article 82 of the ROO 2015 (as amended), Article 82 of the ROS 2009 (as amended) and Article 46 of the NIRO 2009 (as amended)

3.28 Stations using bioliquid consignments are required to report the date that the installation producing the bioliquid first started producing liquid fuels from biomaterial. This is used to determine the relevant GHG emissions savings threshold. Of the 155 consignments of fuel used, 105 were produced in installations that first started producing liquid fuels before 6 October 2015; which sets a GHG emissions savings threshold of 50%. The remaining 50 consignments were produced in installations that first started producing liquid fuels on or after 6 October 2018, which requires a GHG emissions saving of at least 60%.

3.29 The vast majority of bioliquids, used in stations that reported against country of biomass origin, were sourced from within the UK and ROI; this is shown in **Figure 3.9**. This is consistent with the previous obligation periods. In contrast to previous years no consignments were sourced from Overseas (Non EU).

Figure 3.9: A comparison of the quantities of bioliquid used in the 2015-16 to 2018-19 obligation periods



4. Compliance by licensed suppliers

Chapter summary

In 2018-19, suppliers presented 107.64 million ROCs towards the total UK obligation of 127.62 million ROCs.⁴⁶ Those suppliers not meeting their obligation by presenting ROCs are required to make up the shortfall by making payments into the buy-out fund or the late payment fund. The payments collected resulted in £841.9m being redistributed to eligible suppliers from the combined buy-out fund and late payment fund, exceeding the previous record of £604.1m set in 2017-18. Each ROC was notionally worth £55.04, giving a scheme value of approximately £5.9 billion.

There were 123 suppliers with an obligation in the UK – twenty-one of which did not meet their obligation. This resulted in mutualisation being triggered for the second time in RO history, with a shortfall of £97.5 million as of the late payment deadline⁴⁷. An exemption for eligible Energy Intensive Industries (EIIs) from a proportion of the indirect costs of the RO was implemented for the first time in 2018-19.

4.1 The obligation level (expressed as ROCs/MWh) is set by the Secretary of State and published by BEIS six months before each obligation period begins.⁴⁸ BEIS announced the 2018-19 obligation level applicable for suppliers in:

- Great Britain on 18 December 2017.⁴⁹ This required suppliers in England, Wales and Scotland to present 0.468 ROCs per MWh of electricity that they supplied to their customers, which was revised from the obligation level of 0.452 ROCs per MWh previously announced on 29 September 2017. This was the result of BEIS being required to apply the revised exemption methodology – as set out in the Renewables Obligation (Amendment) (Energy Intensive Industries) Order 2017⁵⁰ – for calculating the obligation level to account for the Energy Intensive Industries (EIIs) excluded electricity.

⁴⁶ [Link to details of 2018-19 RO obligation on the Ofgem website:](https://www.ofgem.gov.uk/publications-and-updates/renewables-obligation-total-obligation-201819) <https://www.ofgem.gov.uk/publications-and-updates/renewables-obligation-total-obligation-201819>

⁴⁷ 31 October 2019

⁴⁸ Articles 12 of the NIRO and ROS 2009 Orders and article 13 of the RO 2015 Order define these calculations to set the obligation.

⁴⁹ [Link to RO obligation level calculation for 2018-19:](https://www.gov.uk/government/publications/renewables-obligation-level-calculations-201819) <https://www.gov.uk/government/publications/renewables-obligation-level-calculations-201819>

⁵⁰ [Link to Renewable Obligation \(Amendment\) \(Energy Intensive Industries\) Order 2017:](http://www.legislation.gov.uk/ukdsi/2017/9780111159170/contents) <http://www.legislation.gov.uk/ukdsi/2017/9780111159170/contents>

- Northern Ireland on 29 September 2017⁵¹. This required suppliers in Northern Ireland to present 0.185 ROCs per MWh of electricity that they supplied to their customers.

The obligation level by RO jurisdiction⁵² is used by Ofgem to calculate the total UK obligation (ie: actual total electricity supplied x relevant obligation level by RO jurisdiction). In 2018-19 the total supply was 269.6 TWh⁵³ to customers in GB and 7.7 TWh in NI. Using the 2018-19 obligation level and the 2018-19 total electricity supplied figures gave a total UK obligation of 127.62 million ROCs. This is an increase of 9.78 million ROCs (8.30%) from the total UK obligation level of 117.84 million ROCs in 2017-18.

4.2 We set the buy-out price before each obligation period by taking the buy-out price from the previous obligation period and adjusting it in line with the change in the Retail Price Index (RPI)⁵⁴ during the previous calendar year. For the obligation period 2018-19 the price was set at £47.22 per ROC – an increase of over three and a half percent from the 2017-18 value of £45.58.

4.3 The obligation for all 123 suppliers that supplied electricity during the obligation period was set based on their overall supply volumes by RO jurisdiction. Suppliers with an obligation under the RO are not the complete group of licensed suppliers in the UK. Some licensed suppliers did not supply electricity in 2018-19 and so did not have an obligation. A full list of all electricity supply licences in GB is available from the Electronic Public Register on our Licensing website.⁵⁵ An equivalent list for NI is on the Northern Ireland Authority for Utility Regulation (UR) website.⁵⁶

Information required by suppliers

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

- Estimate the amount of electricity it has supplied during the obligation period and submit these figures to us by 1 June,
- Provide us with the final figures for the amount of electricity it has supplied by 1 July,
- Comply with its obligations through one or a combination of the options below:
 - Presenting ROCs to us by 1 September,

⁵¹ [Link to RO obligation level calculation for 2018-19](https://www.gov.uk/government/publications/renewables-obligation-level-calculations-201819): <https://www.gov.uk/government/publications/renewables-obligation-level-calculations-201819>

⁵² Breakdown of RO jurisdiction is as follows: RO (England & Wales), ROS (Scotland), and NIRO (Northern Ireland)

⁵³ Excluding 9.2 TWh of electricity supplied to EIIs, which is exempted from the RO.

⁵⁴ [RPI from the Office of National Statistics](https://www.ons.gov.uk) <https://www.ons.gov.uk>

⁵⁵ [Link to list of GB supply licences](https://epr.ofgem.gov.uk/Document): <https://epr.ofgem.gov.uk/Document>

⁵⁶ [Link to list of NI supply licences](https://www.uregni.gov.uk/electricity-licences): <https://www.uregni.gov.uk/electricity-licences>

- Making a buy-out payment by 31 August for each ROC it has not presented,
- Making a late payment by 31 October to meet any remaining obligation it has not met by 1 September. Late payments are subject to a daily interest penalty at an annualised rate of 5% plus the Bank of England base rate as of the first day of the late payment period.⁵⁷

Validation and submission of supply volumes

4.5 Appendix 5 of the Renewables Obligation: Guidance for Licensed Electricity Suppliers⁵⁸ 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 Elexon⁵⁹ for supply in GB, and from Northern Ireland Electricity Networks (NIE)⁶⁰ for supply in NI.

4.6 Since 2015, when the new process was firstly introduced, settlement reports from Elexon and NIE are obtained by Ofgem before suppliers submit their figures. An extract of the report is sent to each supplier for validation of their supply volumes and, at that stage, suppliers can either accept the figures or justify any variance before submitting their figures.

4.7 Excluding eleven suppliers that each either had their Licence revoked or entered into Administration by the estimated or final supply data deadlines, there were four suppliers that submitted their estimated figures to us after the 1 June deadline, and two that submitted their final supply figures after the 1 July deadline⁶¹. Each of these incidents of non-compliance will be added to the Supplier Performance Report (SPR).⁶²

Energy Intensive Industries

4.8 Applicable for the 2018-19 RO year onwards, eligible Energy Intensive Industries (EII) in GB may claim exemption from their energy supplier for up to 85% of the indirect costs of the RO. We use the suppliers reduced supply volume to calculate its obligation. Details of eligible EII excluded electricity are in sections 2.6 to 2.8 of our Guidance to Suppliers.

4.9 Twenty-three suppliers supplied 11.5 TWh of EII electricity to their customers in GB – 9.2 TWh of which was excluded as part of their total electricity supply volumes for the purpose

⁵⁷ Defined in article 68(4) of the 2015 RO Order, article 44(4) of the 2009 ROS Order and article 41(4) of the 2009 NIRO Order.

⁵⁸ [Link to RO guidance for suppliers](https://www.ofgem.gov.uk/publications-and-updates/renewables-obligation-guidance-suppliers-march-2018): <https://www.ofgem.gov.uk/publications-and-updates/renewables-obligation-guidance-suppliers-march-2018>

⁵⁹ [Link to Elexon website](https://www.elexon.co.uk/): <https://www.elexon.co.uk/>

⁶⁰ [Link to NIE website](https://www.nienetworks.co.uk/home): <https://www.nienetworks.co.uk/home>

⁶¹ The names of suppliers missing the 1 June and 1 July deadlines can be found in Appendix 2.

⁶² [Link to the supplier performance report](https://www.ofgem.gov.uk/environmental-programmes/environmental-programmes-ofgem-s-role-and-delivery-performance/environmental-programmes-supplier-performance-report): <https://www.ofgem.gov.uk/environmental-programmes/environmental-programmes-ofgem-s-role-and-delivery-performance/environmental-programmes-supplier-performance-report>

of determining their obligations. A summary of such electricity supplied in GB is given in **Table 4.1**

Table 4.1: Summary of EIIs supplied in Great Britain

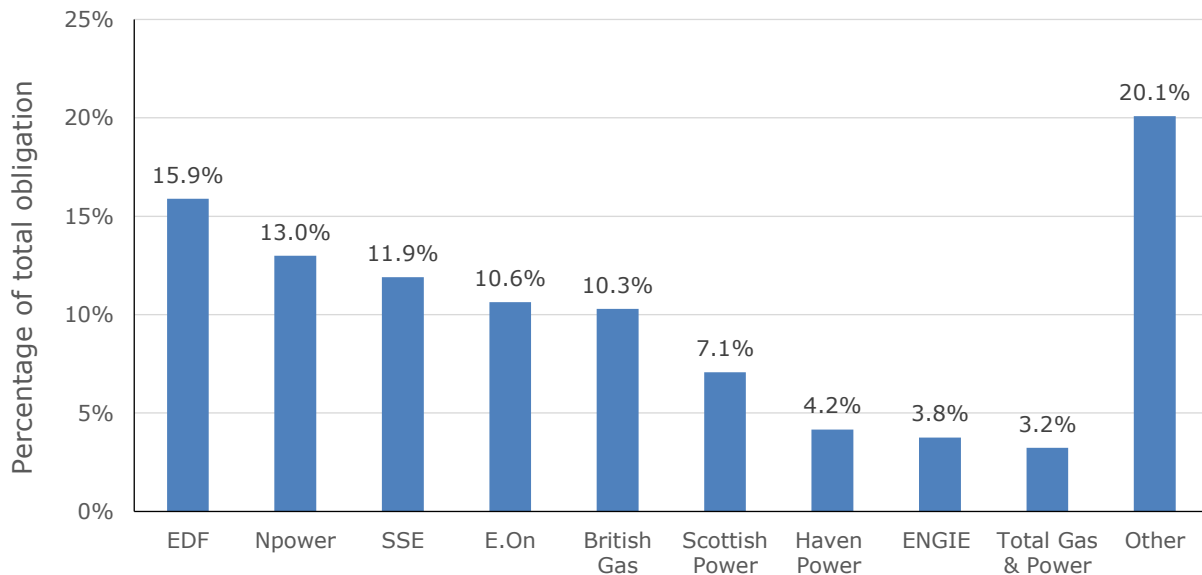
	England & Wales	Scotland	UK total
Total EIIs supply (MWh)	10,477,763	1,072,685	11,550,4491
Total excluded EII electricity from oblig.	8,347,826	900,281	9,248,107
Percentage of excluded EII electricity from oblig.	79.7%	83.9%	80.1%

Share of obligation by suppliers

4.10 **Figure 4.1** shows how the total UK obligation was split between suppliers. Each supplier with a share of the obligation of 3% or above is shown individually, those with share below 3% are grouped together under 'Other'.

4.11 The 'big six' suppliers (British Gas, E.ON, EDF, Npower, Scottish Power and SSE) shared 68.78% of the obligation between them. This is down from 71.77% last year. Full details of suppliers' obligations are included in Appendix 2.

Figure 4.1: Proportion of total obligation (RO, ROS, and NIRO combined) by supplier group in 2018-19



Compliance with obligations

4.12 Suppliers had a total of 241 obligations across the three Orders, 204 obligations of which were met.

- Suppliers met 72 of the obligations by presenting ROCs alone. Of these, 29 were on the RO, 39 on the ROS, and four on the NIRO,
- Suppliers met 95 obligations entirely through either buy-out or late payments or a combination of both. Of these, 47 were on the RO, 46 were on the ROS and two were on the NIRO,
- Suppliers met 37 obligations through a combination of buyout/late payments and ROCs. Of these 28 were on the RO, six were on the ROS and three were NIRO.

ROCs presented by Suppliers

4.13 **Table 4.2** summarises the obligation and ROCs presented by suppliers across the Orders. This shows that suppliers presented 107.64 million ROCs to us for compliance in 2018-19. This is an increase of 4.4 million ROCs, or 4.3%, on the 103.22 million they presented in 2017-18.

4.14 Suppliers met 84.34% of the total obligation (127.62 m ROCs) by presenting ROCs (107.6m) to us. The remaining proportion of the obligation (19.98m ROCs) – the highest since the RO began in 2002-03 – was largely met by suppliers through making a buyout payment and/or late payment. Consequently, this resulted in the highest total of such payments being made (totalling just under £846.88 million) to date.

Table 4.2 Summary of ROCs presented towards each UK obligation in 2018-19

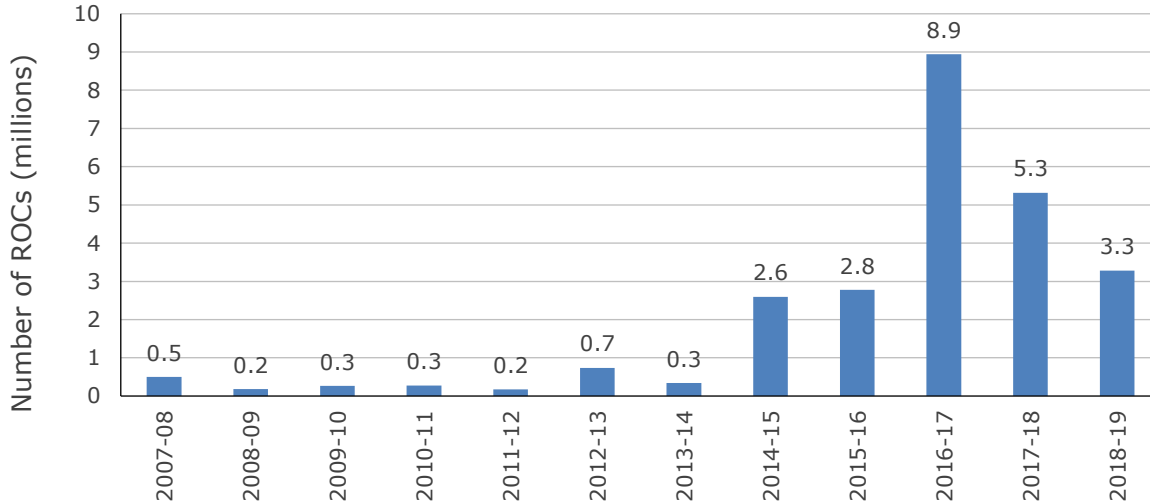
	RO	ROS	NIRO	UK total
Electricity supplied (MWh)	244,827,229	24,810,957	7,747,717	277,385,902
Obligation (ROCs)	114,579,143	11,611,524	1,433,328	127,623,995
ROCs presented	95,846,330	10,574,337	1,223,293	107,643,960
Total number of obligations	125	107	9	241
Percentage of obligation met with ROCs	83.65%	91.07%	85.35%	84.34%

4.15 Suppliers are allowed to meet up to 25% of an obligation by presenting unused ROCs from the previous obligation period (banked ROCs)⁶³. They presented around 3.3 million banked ROCs, down from the 5.3 million presented last year. **Figure 4.2** shows that the number of banked ROCs presented in 2018-19 obligation period was higher than previous obligation periods with the exception of the recent 2016-17 and 2017-18 obligation years. The reason for this is attributed to large volume of ROCs issued in 2017-18. This resulted in a large

⁶³ Defined in article 14(2) of the 2015 RO Order and articles 13(2) of the 2009 ROS and NIRO Orders

number of banked ROCs being available for suppliers to present to us towards their 2018-19 obligation.

Figure 4.2: Number of banked ROCs presented each obligation period since 2007-08



4.16 The relatively high volume of ROCs we issued in 2018-19 and the relatively large number of banked ROCs from 2017-18 that suppliers presented will have a consequential effect into the 2019-20 compliance period. Of the 105.95 million ROCs we issued in 2018-19, around 1.60 million were not presented by suppliers. These will be available as banked ROCs for the 2019-20 compliance period.

4.17 There is a cap on the amount of ROCs from electricity generated from bioliquids that suppliers can present towards their obligations. This limits suppliers to meeting 4% of an obligation using bioliquid ROCs. Some bioliquid ROCs are exempt from the cap. Details of the exemptions are in section 4.5 of our Guidance for Suppliers.

4.18 In 2018-19 suppliers presented 254,106 bioliquid ROCs to us, across the obligations, which qualified under the cap. This is 0.20 % of the total obligation, well below the 4% cap. Suppliers also presented 2,659,159 bioliquid ROCs towards their 2018-19 obligation that were exempt from the cap. This represents around a 21.93% increase on those presented by suppliers in the 2017-18 obligation period.

4.19 **Table 4.3** summarises all bioliquid ROCs presented by suppliers towards their obligations by RO year. This is effective from the 2013-14 RO year, when the cap on the number of bioliquid ROCs a supplier can present towards its obligation was first introduced.

Table 4.3: Summary of qualifying and non-qualifying bioliqid ROCs presented by suppliers towards their obligations since the 2013-14 RO year

Compliance Period/ RO Year	No. of biofuel ROCs submitted by suppliers which are <u>exempt</u> from the 4% cap	No. of biofuel ROCs submitted by suppliers which are included in the 4% cap	Total qualifying and non-qualifying BL ROCs presented non-qualifying BL ROCs presented
CP12 – 2013-14	851,836	143,498	995,334
CP13 – 2014-15	874,999	29,301	904,300
CP14 – 2015-16	1,352,131	58,973	1,411,104
CP15 – 2016-17	1,707,067	87,290	1,794,357
CP16 – 2017-18	2,180,927	181,429	2,362,356
CP17 – 2018-19	2,659,159	254,106	2,913,265

Payments made

4.20 Suppliers who chose to make buy-out payments paid a total of £737,461,610 into the buy-out funds by the legislative deadline of 31 August.

4.21 Across the schemes, 42 suppliers covering 72 obligations did not meet the deadline for making buy-out payments. All but 21 suppliers (as noted in section 4.24) complied with their obligations by making late payments by 31 October, totalling £97,659,634.01⁶⁴

4.22 **Table 4.4** summarises the payments suppliers made towards each UK obligation in 2018-19. Full details of how all suppliers met their obligations are in Appendix 4.

Table 4.4: Payments made towards each UK obligation in 2018-19

	RO	ROS	NIRO	UK total
Buy-out payments made	£692,532,111	£35,904,341	£9,025,159	£737,461,610
Late payments made	£104,815,712	£3,697,487	£901,273	£109,414,472
Total	£797,347,823	£39,601,828	£9,926,431	£846,876,082

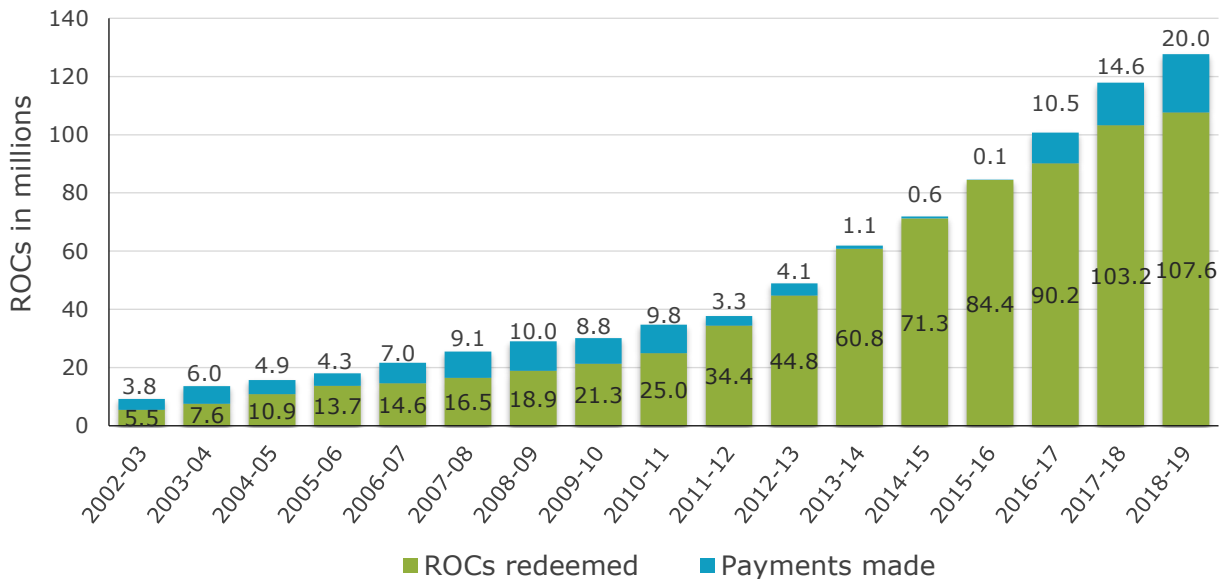
4.23 **Figure 4.3** shows the trend in total UK obligation and the proportions met through ROCs and payments respectively since the RO began in 2002-03. The height of the columns represents the total obligation each year. The green sections represent the proportion of the obligation that suppliers met by presenting ROCs; the blue sections represent the remaining proportion⁶⁵ of the obligation suppliers largely met by making buyout payments. This shows a

⁶⁴ The sum of £109m shown in table 4.4 includes an additional ~£11.7m of late payments received after the 31 October deadline.

⁶⁵ In some RO years, a very small fraction of this remaining proportion of the obligation was not fulfilled by suppliers making buyout and/or late payments, and thus has been left undischarged. For the 2018-19 RO year however this was more significant, thereby triggering the mutualisation process for the second time in the RO's history – details of which are provided in paragraph 4.46.

significant drop in the proportion met by ROCs in 2016-17, 2017-18 and 2018-19 when compared to the corresponding proportion for each of the last five pre-2016-17 RO years. For further details around the total shortfall amount across all RO schemes, please refer to paragraph 4.46.

Figure 4.3: Trend in UK obligation and proportion met through ROCs and payments since 2002-03



Non-Compliance with Obligations

4.24 As reported on our website,⁶⁶ 21 suppliers with a total obligation of 2,304,409 ROCs did not comply with their obligations:

- Sixteen suppliers (listed below), with a total obligation of 1,221,684 ROCs, ceased trading during the 2018-19 Compliance Round. These suppliers did not make payments or present ROCs towards their obligations.
 - Brilliant Energy
 - Economy Energy Trading Limited
 - Electraphase Ltd
 - Eversmart Energy Ltd
 - Extra Energy Supply Limited
 - GEN4U
 - Iresa
 - OneSelect

⁶⁶ [Link to details of 2018-19 late payment distribution](https://www.ofgem.gov.uk/publications-and-updates/renewables-obligation-late-payment-distribution-2018-2019): <https://www.ofgem.gov.uk/publications-and-updates/renewables-obligation-late-payment-distribution-2018-2019>

- Our Power Energy Supply Limited
- Rutherford Energy Supply Limited
- Snowdrop Energy Supply Limited
- Solarplicity Supply Limited
- Spark Energy Supply Limited
- TOTO Energy Ltd
- URE
- Usio Energy

4.25 Through their administrators, we are pursuing outstanding balances for suppliers who have ceased trading, or are in the process of exiting the market.

4.26 Four suppliers (Breeze Energy, Hudson Energy, Nabuh and Planet 9 Energy Ltd) with a combined total outstanding obligation of 1,068,454 ROCs that was not discharged made a partial late payment (~£11.75m) towards offsetting their respective obligation, but all failed to pay this in full by the 31 October legislative deadline.

4.27 GnENERGY Limited with a total obligation of 14,271 ROCs, failed to make payment by the late payment deadline of 31 October and so did not comply with their obligations for 2018-19.

4.28 All instances of non-compliance will be added to the Supplier Performance Report (SPR).

Enforcement

4.29 We take non-compliance with scheme obligations very seriously. We took a robust and proactive approach to compliance and enforcement on the RO scheme this year. We increased our engagement with obligated suppliers in order to ensure deadlines and amounts due were clear, and set out the consequences of non-compliance.

4.30 This included early communication with suppliers to seek assurances that they would be able to discharge their obligations under the RO this year. This was augmented by requests to suppliers who failed to discharge their obligations by the 1 September 2019 deadline, for evidence of ability to make payment in full by the 31 October 2019 late payment deadline. Where no evidence or insufficient evidence was submitted, we issued consultations on proposals to issue Final Orders. Proposals were published for Delta Gas and Power, Genergy, Robin Hood Energy and Toto energy.⁶⁷

⁶⁷ [Link to press release on enforcement action](https://www.ofgem.gov.uk/publications-and-updates/ofgem-orders-four-suppliers-pay-147-million-renewables-obligations-31-october-2019): <<https://www.ofgem.gov.uk/publications-and-updates/ofgem-orders-four-suppliers-pay-147-million-renewables-obligations-31-october-2019>>

4.31 We proceeded to issue a Final Order in respect of Genergy. We did not issue Final Orders for Delta Gas and Power and Robin Hood Energy as they subsequently paid in full. Toto ceased to trade so the Final Order was no longer required.

4.32 Immediately before the late payment deadline, Nabuh and Breeze told us that in fact they would not be able to make their payment by the deadline. We therefore issued provisional orders to both these parties on 31 October 2019 requesting immediate payment. Nabuh has now paid in full, so the Provisional Order has been revoked; Breeze was unable to make this payment because it ceased trading shortly after the Provisional Order was issued.

4.33 Full details of the Final and Provisional Orders are available on the Enforcement team's webpage.⁶⁸

Redistribution of the buy-out and late payment funds

4.34 We redistribute the buy-out and late payment funds to suppliers using the single recycling mechanism. This means that we pay out the aggregate of the funds across the three obligations to suppliers in proportion to the amount of ROCs each supplier presented across the three Orders. For example, a supplier who presents 3% of the total ROCs across the three obligations will get back 3% of the amount we redistribute from the buy-out and late payment funds. This is the case regardless of the Order under which a supplier had its obligations. So, for example, a supplier who only has an obligation in England and Wales will still receive part of the Scotland and Northern Ireland payment funds.

Table 4.5: Summary of redistribution payments

	RO	ROS	NIRO	UK total
Buy-out payments	£687,789,063	£35,659,675	£8,963,145	£732,411,883
Late payments	£104,925,652	£3,700,650	£903,462	£109,529,764
Totals	£792,714,715	£39,360,325	£9,866,607	£841,941,647

4.35 As **Table 4.5** summarises, the combined sum redistributed to suppliers from the buy-out and late payment funds was approximately £842 million. Full information on payments made to individual supply licences is included in Appendix 2. We redistributed £732.4 million from the buy-out funds. We withdrew £5.6 million (an increase of £1.2million that we withdrew last year) for our scheme administration costs⁶⁹ (described in paragraph 1.3 in Chapter 1), accounted for interest accrued on the buy-out payments while in our accounts, and rounded

⁶⁸ [Link to details of final and provisional orders](https://www.ofgem.gov.uk/investigations/provisional-orders-and-final-orders): <https://www.ofgem.gov.uk/investigations/provisional-orders-and-final-orders>

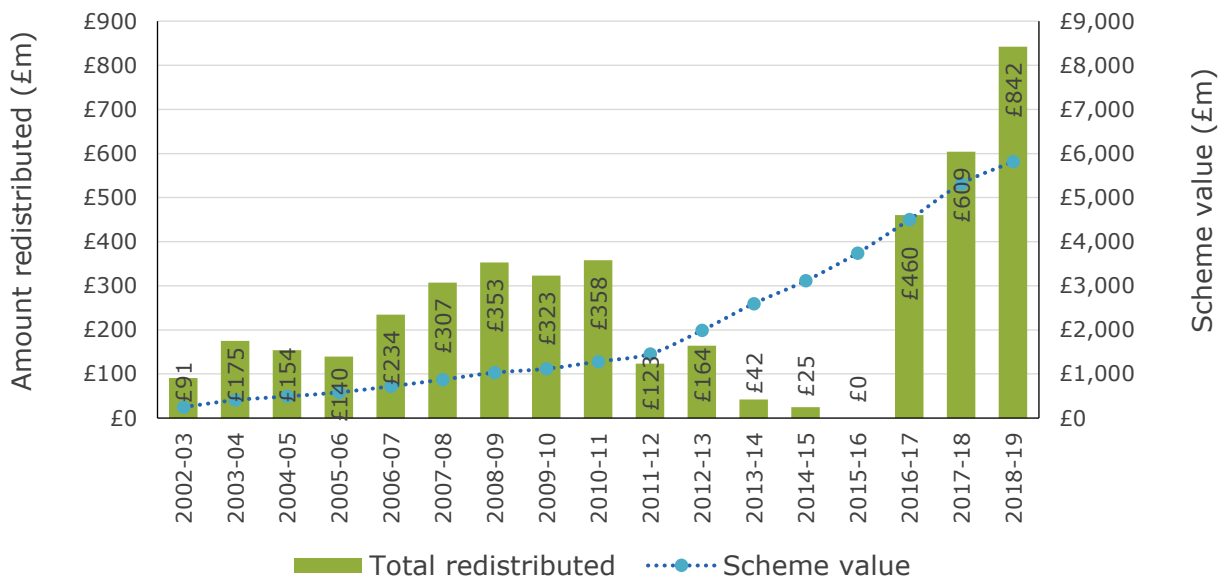
⁶⁹ This includes NIRO costs (£1,087,974) and RO GB costs (£4,450,691).

the redistribution amounts down to the nearest whole pound. We then made the redistribution payments on 16 October 2019⁷⁰, in advance of the legislative deadline of 1 November.

4.36 We redistributed £109.5 million in late payments, on the same basis as the buy-out funds (though without the withdrawal of administration costs) on 4 December 2019. This was in advance of the legislative deadline of 1 January 2019.

4.37 **Figure 4.4** shows the amounts we have redistributed each year, and the growth in value of the scheme, since its introduction in 2002.

Figure 4.4: Total redistributed to suppliers and scheme value since 2002-03



ROC recycle value

4.38 As suppliers presented 107.6m ROCs, this means the ROC recycle value (the amount that suppliers received back for each ROC they presented) for the 2018-19 obligation period was £7.82. When added to the buy-out price of £47.22 for each ROC they presented, the total notional worth of a ROC for this obligation period was £55.04. Suppliers will receive a further mutualisation recycle value once the mutualisation process for this compliance period is complete.⁷¹

⁷⁰ [Details of ROCs presented towards UK obligation](https://www.ofgem.gov.uk/publications-and-updates/renewable-obligation-number-rocs-presented-towards-201819-uk-obligation): <https://www.ofgem.gov.uk/publications-and-updates/renewable-obligation-number-rocs-presented-towards-201819-uk-obligation>

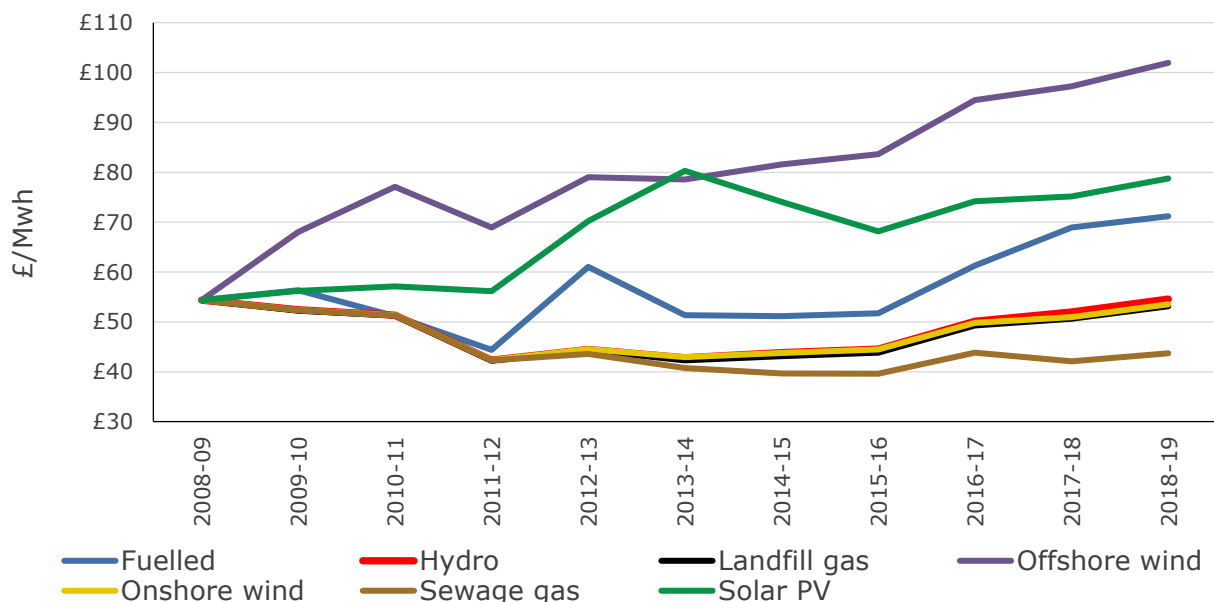
⁷¹ Further details on mutualisation are given from section 4.42 onwards

Table 4.6 Determination of ROC recycle value since 2009-10

	09-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19
Total of buy-out and late payments redistributed	£324m	£358m	£123m	£164m	£42m	£25m	£0m	£460m	£604m	£842m
Total ROCs presented (m)	21.3m	25.0m	34.4m	44.8m	60.8m	71.3m	84.4m	90.2m	103.2m	107.6m
Recycle value per ROC presented	£15.17	£14.35	£3.58	£3.67	£0.70	£0.35	£0.00	£5.10	£5.85	7.82
Worth of a ROC to a supplier	£52.36	£51.34	£42.27	£44.38	£42.72	£43.65	£44.33	£49.87	£51.43	£55.04
Average ROCs issued/MWh	1.04	1.07	1.12	1.27	1.27	1.28	1.31	1.32	1.34	1.34
Support per MWh supplied	£54.45	£54.93	£47.34	£56.36	£54.25	£55.87	£58.07	£65.88	£68.82	£72.36

4.39 **Table 4.6** summarises the ROC recycle value and support per MWh supplied since 2009-10. The total value of the scheme in an obligation period is the worth of a ROC multiplied by the number of ROCs presented for compliance by suppliers. In 2018-19 suppliers presented 107.6 million ROCs each worth £55.04 giving a scheme value of £5.9 billion.

4.40 The average number of ROCs issued per MWh (from **Table 4.6**) multiplied by the worth of a ROC gives the support (in £) per MWh generated for an obligation period. These are shown in the bottom row of the table.

Figure 4.5: Cost of support per MWh for each technology since 2008-09

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

4.41 **Figure 4.5** shows the cost of support in £ per MWh broken down by technology type. The chart begins in 2008-09, before banding, when all technologies received one ROC per MWh generated. The most obvious change from last year is the increase in the cost of support per MWh for each technology type with the notable exception of sewage gas.

Mutualisation

4.42 If a supplier is unable to meet its obligation under the RO or ROS there may be a shortfall in the buy-out fund/late payment fund. The mutualisation provisions in RO legislation⁷² are designed to account for this. Mutualisation is triggered above a certain threshold, known as relevant shortfall,⁷³ - the amount of which is equal to or in excess of £15,400,000 for the RO and £1,540,000 for ROS respectively. Mutualisation does not apply in Northern Ireland.

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

4.44 The mutualisation ceilings for 2018-19 were £284,444,803.31 in England and Wales and £28,444,480.33 in Scotland.

4.45 Mutualisation payments are redistributed to suppliers on the same basis as the buy-out and late payment funds, using the single recycling mechanism to 'UK compliant suppliers'. These are suppliers who have presented ROCs within the relevant compliance period and have discharged their obligation in full by the late payment deadline of 31 October. Even though mutualisation does not apply in NI, NI suppliers will receive a share of any mutualisation funds from the RO and ROS.

4.46 In 2018-19, 21 suppliers did not meet their obligations in full. This resulted in a total shortfall of £97.5m, distributed across the schemes, as follows:

- RO: £88,104,505.42
- ROS: £9,402,635.28
- NIRO: £0

⁷² Mutualisation is described in articles 72 – 77 of the 2015 RO Order and articles 48 – 52 of the 2009 ROS Order.

⁷³ Article 72 in the 2015 RO Order and Schedule 3 in the 2009 ROS Order define the amount of relevant shortfall.

4.47 The resulting shortfall triggered mutualisation for both RO and ROS. In line with the RO Orders, suppliers who discharged all or part of their obligation have been contacted to make quarterly payments to make up the shortfall, in proportion to their obligation. The first of these payments will be due by 31 August 2020. Further information on mutualisation can be found within chapter 7 of our Renewables Obligation: Guidance for Suppliers⁷⁴.

4.48 Following the late payment deadline, we received payment of £650,582.11 from Nabuh Energy. Whilst this amount does not reduce the mutualisation amount, Ofgem will make an administrative decision as to how to redistribute this money to suppliers.

⁷⁴ [Link to RO guidance for suppliers](https://www.ofgem.gov.uk/publications-and-updates/renewables-obligation-guidance-suppliers-march-2018): <<https://www.ofgem.gov.uk/publications-and-updates/renewables-obligation-guidance-suppliers-march-2018>>

5. Audit and participant compliance

Chapter summary

Our auditors carried out targeted audits of 153 non micro⁷⁵ generators across a range of technology types and 84 micro generators in Northern Ireland. Our auditors also audited four licensed suppliers on their supply volume submission processes and two Northern Ireland Agent or 'Rent-a-roof' companies in relation to their obligations under the NIRO. The compliance of 76% of the non micro generators was rated as unsatisfactory or weak.

Audits of generating stations

5.1 We routinely carry out audit checks on both accredited generating stations and stations applying for accreditation, to make sure that generators are complying with the scheme rules. Pre-accreditation audits focus on verifying key information (eg commissioning date and capacity) provided in applications for accreditation which we have yet to approve. Standard audits (for accredited stations) additionally checked the appropriateness of metering arrangements, the accuracy of ROC claims and, for fuelled generators, adherence to agreed FMS procedures and sustainability requirements.

5.2 Auditing can help identify and protect against errors and fraud. These checks also ensure that a generating station remains an eligible renewable generating station, that we hold the most up-to-date information for a station and that the correct number of ROCs have been issued.

5.3 We select generating stations for audit based on a number of factors, such as risk areas in the scheme, data submission issues and large ROC claims.

5.4 The auditor gives each audit an assurance 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), or
- **Unsatisfactory** (major instances of non-compliance or suspected fraud identified).

⁷⁵ Non micro refers to generating stations with a Declared Net Capacity (DNC) greater than 50kW. Micro generators are those with a DNC of 50kW or less. Micro generators are only eligible for the RO in NI and are referred to as Micro-NIRO.

5.5 Following an audit, Ofgem issue the report to the generator and work closely with them to obtain any outstanding information and ensure that findings from the audits are resolved effectively. In the event of any potential non-compliance, error or fraud being identified, Ofgem investigates thoroughly and, where appropriate, can withdraw accreditation, change a station's ROC banding and make amendments to ROC issue. We only close an audit once we are sure that all corrective action has been taken to address problems identified. In some cases, we temporarily suspend the issue of ROCs while we wait for a station to provide outstanding information or take corrective actions. If there is evidence that suggests fraud, we can also contact law enforcement agencies.

2018-19 Generator Audits

5.6 In 2018-19 we contracted Black and Veatch to carry out audits of 153 (>50kW DNC) generating stations, which is an increase from 140 audits in 2017-18. Fifty-one of these generators are situated in England or Wales, 14 in Scotland and 88 in Northern Ireland. The generating stations that we selected for audit consisted almost entirely of those about which we had specific concerns, with a small number which were targeted as representative examples of a particular category of generator (for example, technology type). **Figure 5.1** shows the breakdown of the audits by country and the rating given by the auditor. **Table 5.1** shows the breakdown of technologies, the type of audit and the ratings received for each.

Figure 5.1: Audit ratings by country in 2018-19

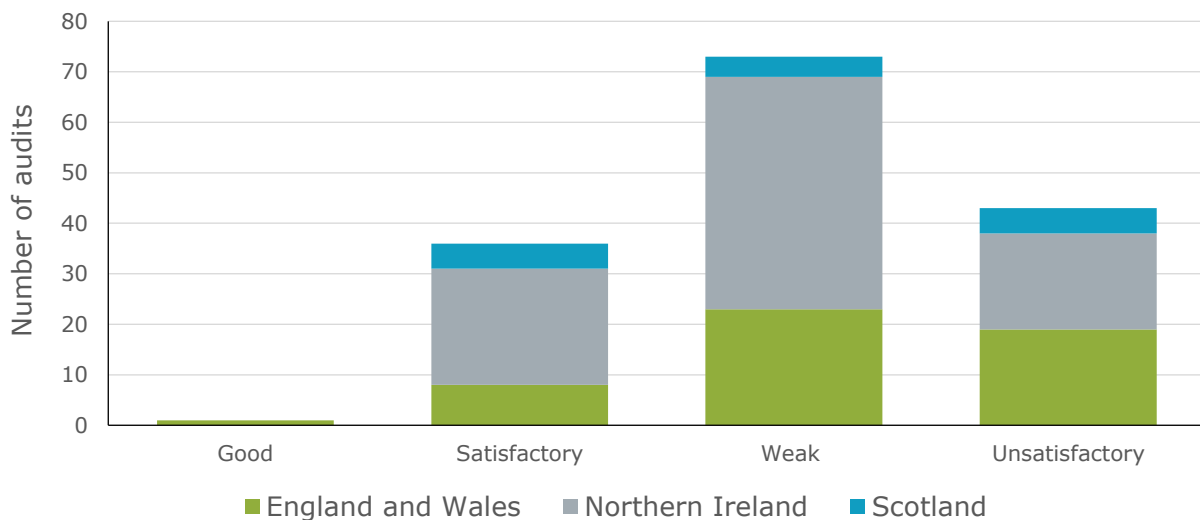


Table 5.1 Technologies and audit types in 2018-19

Technology	Audit Type	Good	Satisfactory	Weak	Unsatisfactory	Totals
Fuelled	Pre-accreditation	0	4	15	11	30
	Accredited	0	6	27	7	40
Hydro	Pre-accreditation	0	2	0	0	2
	Accredited	0	0	0	0	0
Landfill Gas	Pre-accreditation	0	0	0	0	0
	Accredited	0	1	0	0	1
Offshore wind	Pre-accreditation	0	1	0	0	1
	Accredited	0	0	0	0	0
Onshore wind	Pre-accreditation	0	9	9	6	24
	Accredited	0	11	12	4	27
Sewage Gas	Pre-accreditation	0	0	0	0	0
	Accredited	0	0	1	0	1
Solar PV	Pre-accreditation	0	0	1	4	5
	Accredited	1	2	7	11	21
Tidal	Pre-accreditation	0	0	0	0	0
	Accredited	0	0	1	0	1
Totals		1 (<1%)	36 (23.5%)	73 (47.7%)	43 (28.1%)	153

5.7 The proportion of weak and unsatisfactory audits has increased from 56% in 2017-18 to 76% in 2018-19. We would expect a high level of non-compliance due to the audits being targeted. It is likely that this increase is due to a proportion of the 2018-19 audits being focused on key risk areas and generating stations where we had particular concerns, as described in more detail in sections 5.8 and 5.9. The most common generator audit findings in 2018-19 were outstanding documents, minor application discrepancies, incorrect declared net capacity, incomplete schematics and commissioning date discrepancies.

5.8 As part of the 2018-19 audit programme, we undertook 11 more detailed audits targeted at specific generating stations. These audits included stations where we had concerns over the accuracy of the information provided to us in relation to the accreditation application. All of these audits were rated either weak (3) or unsatisfactory (8). No stations received a satisfactory or good rating. While the level of non-compliance we have found is high, this was expected given that the audits were targeted. The most common reasons for the weak and unsatisfactory ratings include; an application stating an incorrect commissioning date and insufficient evidence being provided to support the stated commissioning date.

5.9 In order to gather additional assurance, we also undertook audits of 48 off-grid (OG) and zero export (ZE) generating stations, 42 of which were located in Northern Ireland. This was due to concerns around an increased risk of non-compliance with these types of generating station. Seventy-seven percent of these audits were rated weak or unsatisfactory, with the most common audit findings relating to significant outstanding information, uncertainty over the commissioning date and potential connection with an adjacent

installation. We only close an audit once we are sure that all corrective action has been taken to address problems identified. To date we have closed 29 of the OG/ZE audits, we are still working with the generators on the remaining audits. Of the closed audits, we found two of the generating stations to be connected, which required both applications to be refused and a new application to be submitted covering both.

2018-19 Northern Ireland Micro⁷⁶ Generator Audits

5.10 Audits of solar PV micro generators are conducted in order to verify that the commissioning and metering information provided to us is correct.

5.11 In 2018-19, we asked Black and Veatch to undertake 84 audits on solar PV micro generators in Northern Ireland. The majority of audits (49) showed no or only minor discrepancies in information provided to us, which required correction but did not affect accreditation status. However, 35 audits highlighted significant discrepancies or lack of key information potentially impacting ROC issue or accreditation status. We are currently working through these audits with the generators/agents.

2018-19 Northern Ireland Agent and 'Rent-a-roof' (RAR) Audits

5.12 The purpose of agent and rent-a-roof (RAR)⁷⁷ audits is to check that appropriate measures are in place to ensure accurate accreditation data is provided; that the agent or RAR company has a sufficient level of scrutiny of generation data and meter readings, so that accurate data is submitted to Ofgem. And, that in the case of agents, the company has permission to act on behalf of the generating stations they represent.

5.13 Grant Thornton undertook one agent audit and one RAR audit in 2018-19, both of which were rated good. The same assurance ratings used for generator audits are applied to agent and RAR audits. As with generator audits, the report is issued to the agent or RAR and we work with them to address the findings. The findings from the two agent audits have now been addressed and we have closed both.

2018-19 Supplier Audits

5.14 The purpose of supplier audits is to gain assurance on the accuracy of electricity supplier figures submitted to us, covering the previous year (in this case 2017-18), and to

⁷⁶ Micro generators are those with a DNC of 50kW or less. Micro generators are only eligible for the RO in NI and are referred to as Micro-NIRO.

⁷⁷ Rent-a-roof companies offer solar PV panels to homeowners, in exchange for the income generated as a result of participation in the NIRO scheme. Agents represent a number of generators, who act on their behalf to submit data and receive ROCs.

identify any weaknesses in suppliers' internal assurance processes. The audits also aim to deter fraudulent or careless submissions and to detect departures from good practice.

5.15 A risk-based approach is taken to the selection of suppliers to be audited. The criteria include big six suppliers that haven't been audited in the last two years, new suppliers, those not using our recommended methodology for reporting supply volumes, and any suppliers whose figures had given cause for concern in previous obligation periods.

5.16 In 2018-19, we contracted Grant Thornton to undertake four supplier audits. The same assurance ratings used for generators audits are applied to the supplier audits. Three of the audits were rated good and one was rated satisfactory. The main findings related to access to the Renewables and CHP Register, and the accuracy of the information contained on it. As with generator audits, the report is issued to the supplier and we work with them to address the findings. The findings from the four supplier audits have now been addressed and they have been closed.

Counter Fraud on the RO

5.17 Ofgem has a dedicated Counter Fraud team, which provides fraud prevention, detection and investigation support on the schemes we administer. During the 2018-19 obligation period the team received ten referrals of possible suspected fraud on the GB RO schemes and 21 on the NIRO scheme. This is a slight increase on the previous year.

5.18 As a result of these referrals three GB RO suspected fraud investigations were opened. Two of these have been closed due to insufficient evidence to substantiate the original allegation and the other case is still on-going. One investigation was opened in relation to a NIRO accredited installation. There was no evidence found to support the allegations and the case has been closed. As a result of these cases over 70 sites have been investigated across GB and NI.

6. Generators accredited under the RO

Chapter summary

By the end of 2018-19, we had accredited 26,525 stations since the start of the scheme, with a total generating capacity of 35.2GW. Following scheme closure in March 2017, it was only been possible to gain accreditation if specific grace period criteria were met. These enhanced accreditation requirements have resulted in a dramatic reduction in the number of stations being accredited onto the scheme. The number of pathways to accreditation further reduced between 2017-18 and 2018-19 as a number of grace periods closed. This resulted in only 11 accreditations for 2018-19. The final grace period closed on 31 March 2019 meaning that there will be no new accreditation applications after this date.

6.1 One of our functions under the Orders is to accredit eligible renewable generating stations. For more information on how a generating station becomes accredited under the RO please refer to our Guidance for generators.⁷⁸

6.2 This chapter gives details of the generating stations we have granted accreditation to for the 2018-19 obligation year, in addition to those accredited since the start of the scheme.

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

- When we refer to stations accredited during the 2018-19 obligation period, we mean that the station's accreditation became effective during the obligation period regardless of when we processed the application.
- We only include data on generating stations that have received full accreditation. We have not included any information on stations with preliminary accreditation, nor those that have had their accreditation withdrawn so the data are subject to change year on year.
- References to "fuelled" generating stations relate to stations generating electricity from eligible biomass, bioliquids, biogas, energy crops or waste, but do not include landfill gas and sewage gas only stations.

⁷⁸ [Link to Ofgem guidance for generators](https://www.ofgem.gov.uk/publications-and-updates/renewables-obligation-guidance-generators): <<https://www.ofgem.gov.uk/publications-and-updates/renewables-obligation-guidance-generators>>

- The capacities we quote are Declared Net Capacity (DNC),⁷⁹ rather than Total Installed Capacity (TIC),⁸⁰ values unless specified otherwise. The main exception to this is fuelled generating stations that burn renewable fuel alongside fossil fuel (we term these co-firing stations).

Determining fuelled station capacities

6.4 To determine the capacity of a fuelled station, we have to calculate the renewable proportion of the electricity generated by the station. For example, a generating station's capacity might be 2GW, but if it only burns 2% of eligible renewable fuels its renewable capacity is taken to be 40MW. There are more complicated cases, such as where a station burns different proportions of renewable fuel (the biomass fraction) from month to month, or where it did not claim any ROCs in 2018-19, so there is no biomass fraction to use. Where we have issued ROCs to them previously and they are still accredited under the scheme, our methodology for determining a station's capacity is as follows:

- If we issued ROCs to a station in 2018-19, we multiply its average biomass fraction for the year by its capacity. The biomass fraction may be 100%, for example in the case of dedicated biomass stations.
- If we did not issue ROCs to a station in 2018-19, but they are still accredited and have received ROCs previously, we use the station's biomass fraction from the most recent year it did receive ROCs and multiply this by its current capacity.
- If we did not issue ROCs to a station in 2018-19, or at any time since April 2007 (the earliest date for which we have data on our Register), but it remains accredited, we use the average biomass fraction from 2018-19 for all active stations (94.3%) and multiply this by the station's capacity. For inactive co-firing stations with a capacity of 1GW or more, we use the average biomass fraction from 2018-19 (0.58%) for active co-firing stations of this size. This average does not take into account fractions for Drax power station (the largest generating station accredited under the RO), whose average biomass fractions are so high that they would skew the capacities of the inactive stations to an unrealistically high value.

Feed-in Tariffs (FIT) scheme

6.5 From 1 April 2010, with the introduction of the Feed-in Tariffs (FIT) scheme in GB, all wind, solar PV, hydro and anaerobic digestion (AD) stations with a DNC of 50kW or less (micro

⁷⁹ DNC means "the maximum capacity at which the station could be operated for a sustained period without causing damage to it (assuming the source of power used by it to generate electricity was available to it without interruption) less the amount of electricity that is consumed by the plant".

⁸⁰ TIC means "the maximum capacity at which the station could be operated for a sustained period without causing damage to it (assuming the source of power used by it to generate electricity was available to it without interruption)".

generators) became ineligible for the RO. Since no FIT scheme exists in NI, micro generators were still able to apply for accreditation under the NIRO. A large majority of the total number of accreditations granted have been for such stations. Given this, when reporting on the number and type of stations accredited under the RO, we have removed the micro NIRO stations from some of the information in this chapter.

Closure of the RO scheme

6.6 The Renewables Obligation (RO) closed to all new generating capacity on 31 March 2017 and there have been early closures for some technologies. **Table 6.1** sets out the closure dates for all RO technologies. If eligible to apply for a grace period, generators could gain entry to the scheme after these closures for specified amounts of time. Details of grace period closure dates by country and technology can be found in **Table 6.2**. The final grace period closed on 31 March 2019 meaning that there will be no accreditations becoming effective after this date.⁸¹

Table 6.1: Summary of RO technology closure dates

Country	Technology	Closure date
England, Scotland and Wales	All, except solar PV and onshore wind	31/03/2017
	Onshore wind	12/05/2016
	Solar PV ≤5MW	31/03/2016
	Solar PV >5MW	31/03/2015
Northern Ireland	All, except onshore wind	31/03/2017
	Onshore wind ≤5MW	30/06/2016
	Onshore wind >5MW	31/03/2016

Table 6.2: Summary of grace period closure dates

Country	Technology	Final grace period closes*
Northern Ireland	All, except onshore wind	31/03/2018
	Onshore wind ≤5MW	31/03/2019
	Onshore wind >5MW	31/12/2018
England, Scotland and Wales	All, excl. onshore wind, biomass and solar PV	31/03/2018
	Solar PV ≤5MW	31/03/2017
	Solar PV >5MW	31/03/2016
	Onshore wind	31/01/2019
	Biomass	30/09/2018
Scotland	Offshore wind (floating and demonstration turbines)	30/09/2018

* For most technologies there are a number of grace periods, each with different eligibility criteria and closure dates. The date shown in the table above is the date of the final grace period for that country and technology type to close.

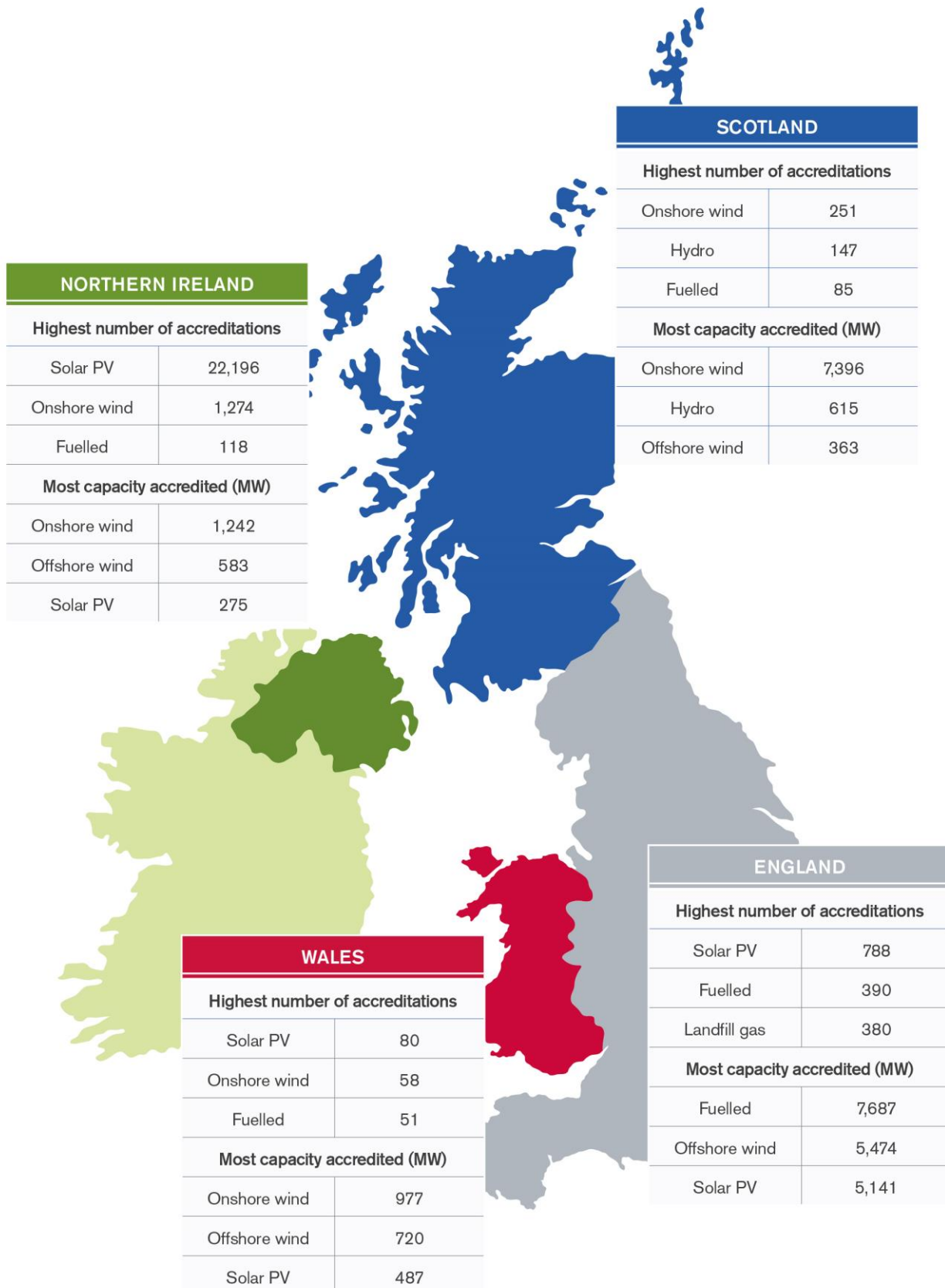
⁸¹ [Link to details on the RO closure:](https://www.ofgem.gov.uk/environmental-programmes/ro/about-ro/ro-closure) <https://www.ofgem.gov.uk/environmental-programmes/ro/about-ro/ro-closure>

Stations accredited from the start of the scheme to the end of 2018-19

6.7 By the end of 2018-19 there were 26,525 stations accredited under the RO. The combined capacity of these stations was 35.2GW. This is a modest increase of 103 stations on the figures reported in last year's report of 26,422 stations accredited, and 32.7GW capacity. Micro NIRO stations account for 22,648 (85.4%) of the total, but only 120.9MW (0.3%) of accredited capacity.

6.8 As one would expect, the technologies with the most accreditations and the highest total capacity vary across each country in the UK. These trends are shown in **Figure 6.1**.

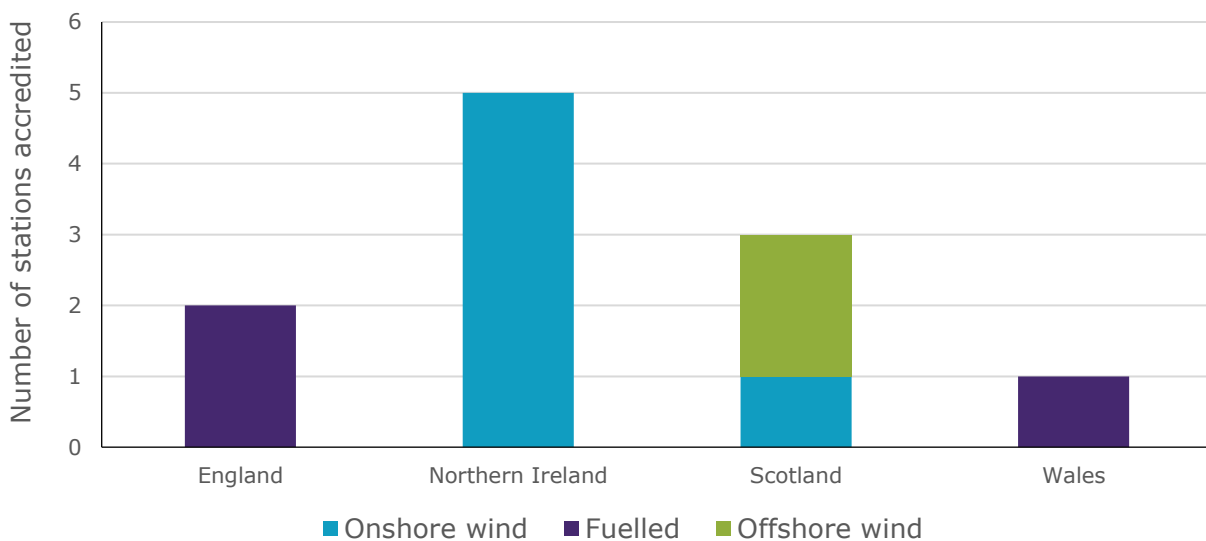
Figure 6.1: Top three renewable technologies by number of accreditations and capacity at the end of 2018-19



Generators accredited in 2018-19

6.9 Eleven stations were accredited during 2018-19. The remainder of the 103 new accreditations (including micro NIRO) mentioned in **6.7** are attributable to earlier obligation periods. This is a large reduction compared to the number of generating stations that were accredited in 2017-18 (210) and 2016-17 (5,139). This gradual but dramatic reduction is due to the closure of the scheme and subsequent closure of grace periods, leaving fewer pathways available for accreditation.

Figure 6.2: Number of accreditations in 2018-19 by country and technology (excluding micro NIRO)



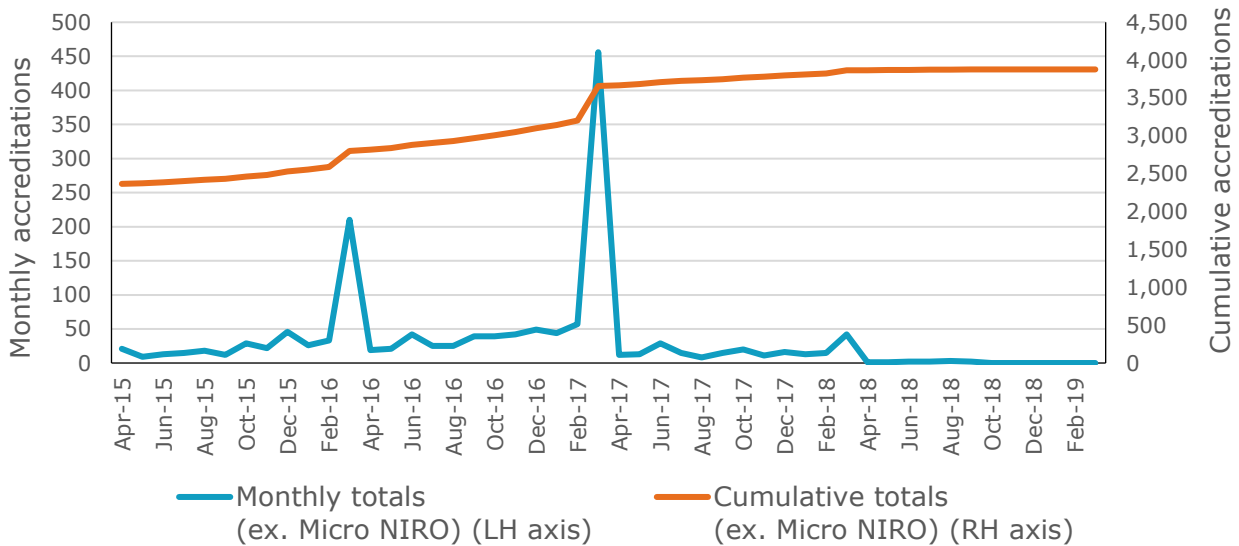
6.10 **Figure 6.2** shows that in England, Northern Ireland, Scotland and Wales there were only accreditations for onshore wind, offshore wind and fuelled generating stations in 2018-19. This differs from the 2017-2018 period where in addition to the above technologies there were also accreditations for solar PV and hydro stations. There have been no accreditations for sewage gas, landfill gas, tidal stream and wave power generating stations since 2016-17.

6.11 Onshore wind accounts for the largest number of accredited generating stations in 2018-2019 at 6 or 55% of the total, with those located in Northern Ireland accounting for five of the 6. The remaining 5 accreditations in 2018-2019 consist of three fuelled stations (27%) and two offshore wind stations (18.2%).

6.12 The historic accreditation profile of all generating stations in Great Britain and Northern Ireland (non-micro) can be seen in **Figure 6.3** below. You can see that since the closure of the scheme in March 2017 accreditations activity has reduced, with a further reduction from April 2018, reflecting the closure of a number of grace periods.

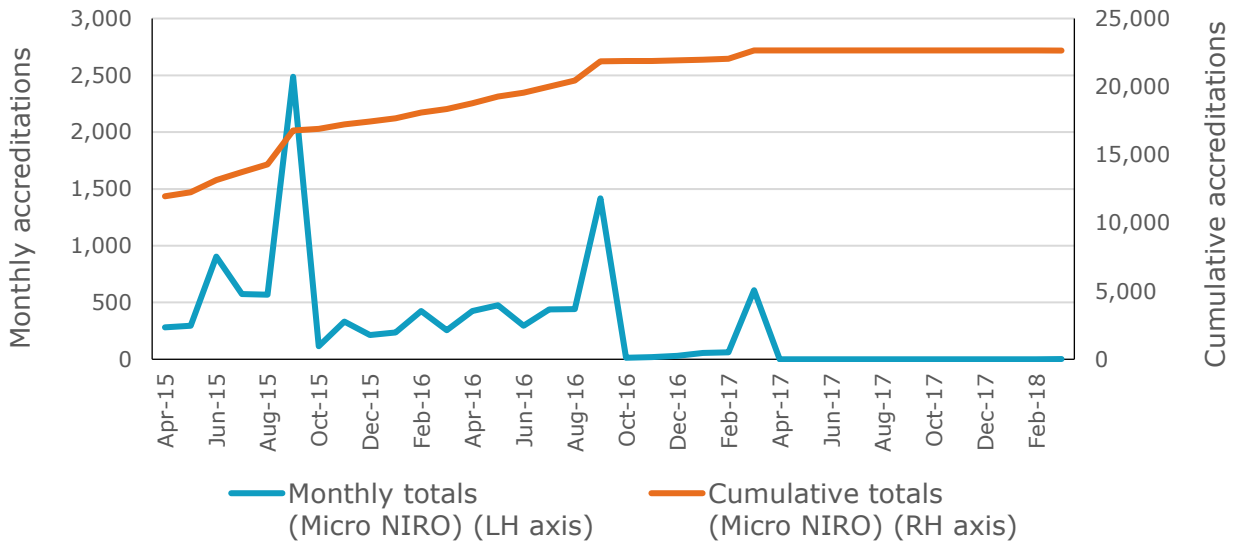
6.13 As a large volume of 2016-17 applications were made in advance of the closure of several grace periods and the overall closure of the RO scheme on 31st March 2017; a significant number of applications were pending a decision after publication of the accreditation figures in last year’s annual report. ROCs associated with generation in the 2017-18 obligation year, and therefore many of the ROCs associated with these applications, were set to expire on 1st September 2019. As such, processing of these applications was prioritised and completed in advance of this date. So the number of accreditations (excluding microNIRO) for 2017-18 has increased significantly in comparison to last years report, from 141 to 209.

Figure 6.3: Number of generating stations (excluding micro NIRO) with accreditations effective from RO years 2015-16 to 2018-19



6.14 **Figure 6.4** shows the number of micro NIRO generating stations accredited each month from April 2015 to March 2018. A significant peak in applications occurred prior to 1 October 2015 and was in response to a drop in ROC banding for micro stations (from four ROCs/MWh to three ROCs/MWh). The peak visible for October 2016 occurred before a further ROC banding drop to two ROCs/MWh. A much smaller peak occurred before scheme closure in April 2017. Since scheme closure there has only been one accreditation which was in 2017-18 for a hydro station, eligible for the grid delay grace period.

Figure 6.4: Number of micro NIRO generating stations with accreditations effective from RO years 2015-16 to 2018-19



Capacity of accredited generating stations

6.15 The aggregate capacity of all stations accredited in 2018-19 was 319MW, an 86.7% decrease on the 2,406MW accredited in 2017-18. As discussed, this was mainly due to the closure of the scheme and the enhanced accreditation requirements to meet the grace period criteria.

Figure 6.5: Capacity of generators accredited by obligation year and country since 2014-15

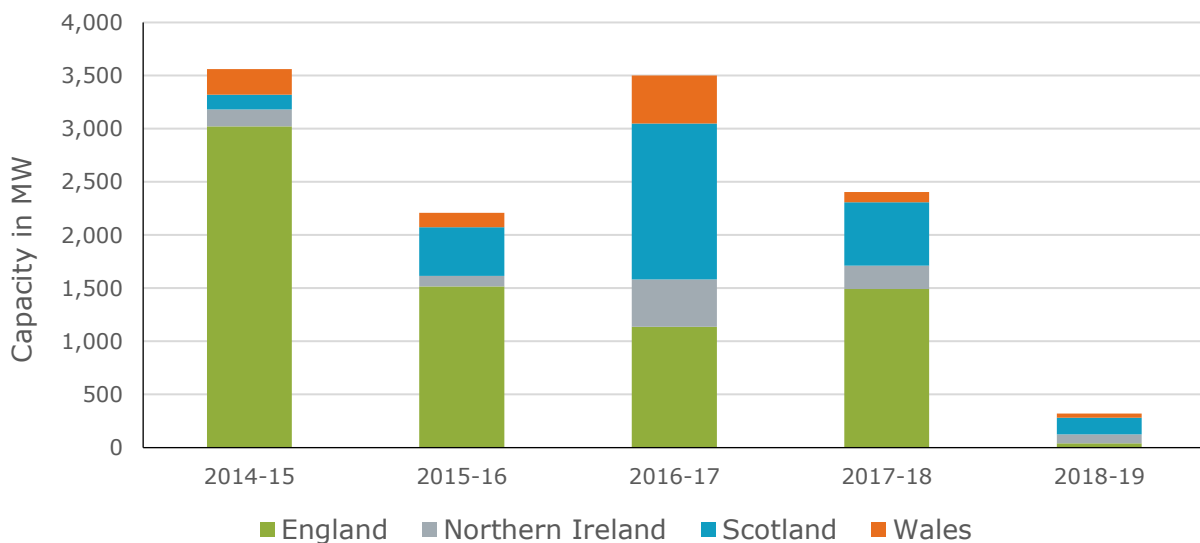


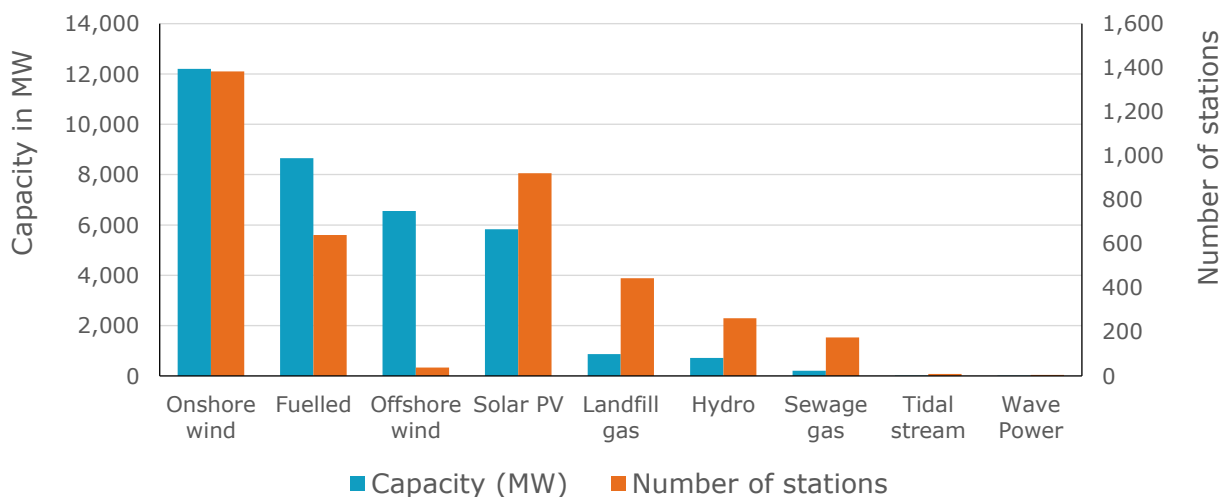
Figure 6.6: Total capacity accredited by generation technology and obligation period since 2014-15



6.16 **Figures 6.5 and 6.6** show that as expected there has been a reduction in newly accredited capacity during 2018-19. The capacity accredited in England reduced from 1,492MW to 42MW. In Northern Ireland it fell from 219MW to 83MW, for Scotland from 598MW to 158MW and in Wales it dropped from 96MW to 36MW.

6.17 As discussed only capacity for offshore wind, onshore wind and fuelled stations was accredited in 2018-19. The largest of these was offshore wind with 144MW (two stations of 96MW & 49MW), then onshore wind with 97MW (six stations ranging from 38MW to 223kW) and finally fuelled with 78MW (three stations of 36MW, 29MW & 13MW).

Figure 6.7: Total capacity and number of stations (excluding micro NIRO) accredited under the RO by generation technology to RO year 2018-19



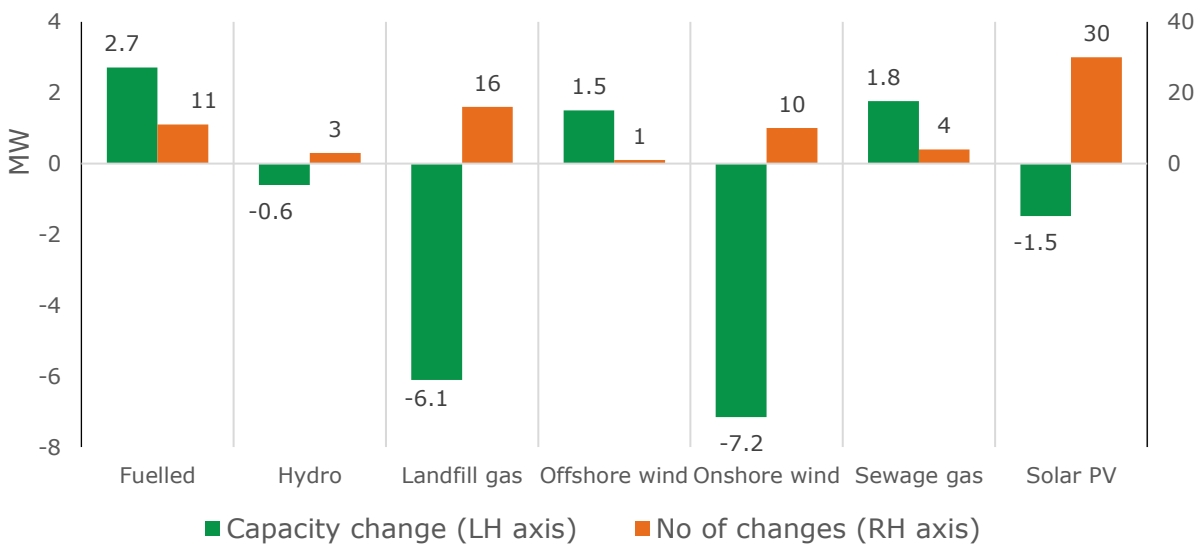
6.18 **Figure 6.7** provides a snapshot of the total capacity currently accredited under the scheme and the corresponding number of stations. Onshore wind has the most capacity (12,210MW) and number of stations (1,383) giving an average capacity of 8.83MW. Offshore wind with a total of 6,556MW and only 38 stations has a much larger average capacity of 172.55MW capacity. Fuelled and solar PV stations also have relatively large average capacities – 13.52MW and 6.33MW respectively. The average size of stations for the other technology types are smaller - hydro (2.75MW), landfill gas (1.96MW), tidal stream (1.52MW), sewage gas (1.20MW) and wave power (0.67MW).

Capacity amendments

6.19 As well as accrediting new stations, we also receive requests from generators to change the details of their stations in some way. Often this is to increase or decrease a station’s capacity due to the addition or removal of generating equipment.⁸²

6.20 **Figure 6.8** shows the 75 changes to capacity made during 2018-19. The net change in capacity across all stations as a result of this was -9.4MW. Most capacity reductions were for solar PV and landfill gas stations.

Figure 6.8: Capacity amendments by technology in 2018-19



Off-Grid and Zero-Export generating stations

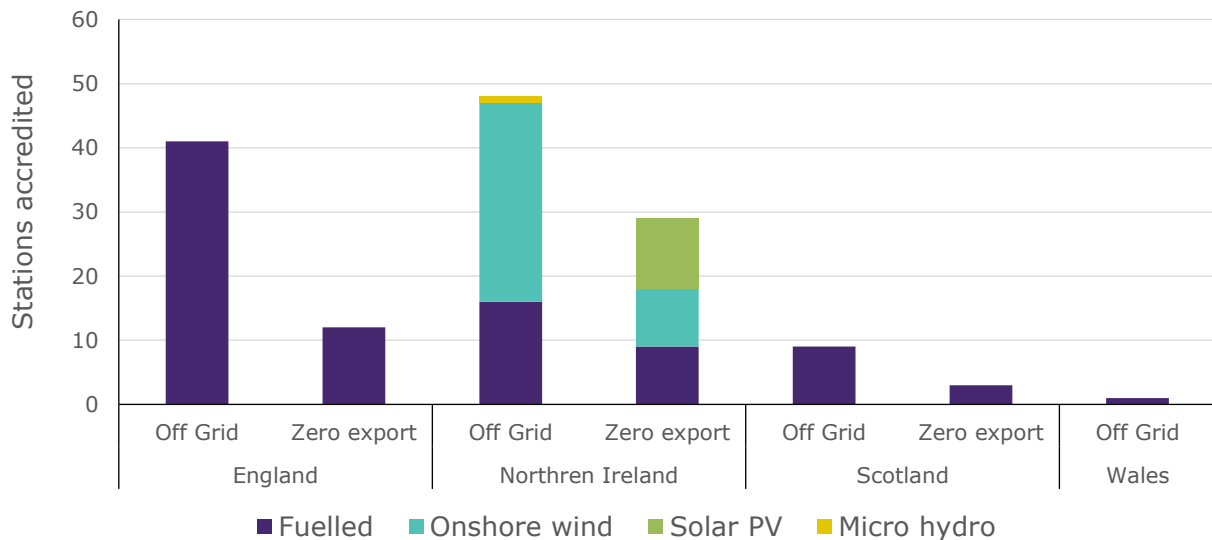
6.21 Ofgem identifies generating stations as Off-Grid (OG) where stations are entirely without a connection to the electricity network. Therefore, these stations need either a stand-by generator or a Battery Energy Storage System (BESS) to provide back-up power to the

⁸² Changes are normally as a result of added or removed generating capacity but can also be a correction to the capacity details we hold for a station.

station. On the other hand, Zero-Export (ZE) generating stations do have a grid connection but for importing electricity only. These stations have onsite loads which are sufficient to make export to the grid unnecessary. Usually, they have a zero export limitation from the DNO. Where stations were commissioned with these configurations, the electricity generated is used in a Permitted Way (i.e. consumed by the station operator itself or sold to a third party under a private wire agreement).

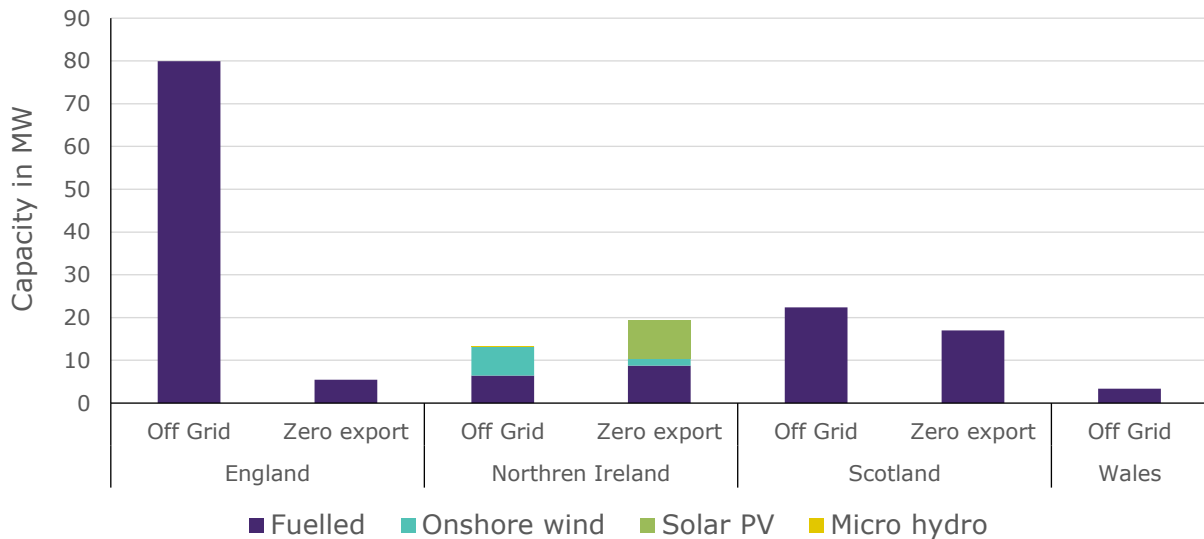
6.22 By the end of 2018-19 there were a total of 125 OG and ZE generating stations accredited under the RO scheme. **Figure 6.9** provides a snapshot of these stations split by country and technology. More than half of these stations are in Northern Ireland (64 – 51.2%), followed by England (50 – 40%), Scotland (10 – 8%) and Wales (1 – 0.8%). All accredited stations in England, Scotland and Wales are fuelled, whereas in Northern Ireland there is a mix of different technologies, such as onshore wind, fuelled, solar PV and one small hydro station.

Figure 6.9: Off-grid and zero-export stations accredited to the end of 2018-19.



6.23 The aggregate capacity of all OG and ZE generating stations accredited to the end of 2018-19 is 158.26MW or 0.46% of total accredited capacity. As shown below in **Figure 6.10**, OG & ZE stations located in England make up 53% (85.4MW) of this figure. Nearly 25% (39.3MW) of OG/ZE accredited capacity is in Scotland, 20% (32.8MW) in Northern Ireland and stations in Wales make up the rest with 2% (3.4MW) of accredited capacity. Within Northern Ireland there is 15.2MW of fuelled capacity, 8.5MW of onshore wind, 9MW of solar PV and 66kW of hydro.

Figure 6.10: Capacity of off-grid and zero-export generating stations accredited to the end of 2018-19.



6.24 Operators of OG and ZE stations have limited third party evidence available to validate the information required for the accreditation process, and subsequent ROC claims that are made to us. Given this, Ofgem put in place additional measures to obtain assurance on eligibility under the RO scheme. This includes a requirement to provide an Independent Technical Assurance Report (ITAR) in advance of an accreditation decision being made. Such a report must be produced for the station by an independent third party.

6.25 Following work in collaboration with the Northern Ireland Authority for Utility Regulation (NIAUR) and Department for the Economy (DfE), Ofgem committed to audit all OG and ZE generating stations in NI by the end of the 2019-20 financial year. For more information and details on the audit programme please refer to Chapter 5.

NFFO generating stations

6.26 Prior to the introduction of the RO, the Non Fossil Fuel Obligation (NFFO), Northern Ireland Non Fossil Fuel Obligation (NI NFFO) and Scottish Renewables Obligation (SRO)⁸³ were the government's primary instruments of renewable energy policy. We refer to these collectively as NFFO.

6.27 NFFO legislation required the former public electricity suppliers (PES)⁸⁴ to buy electricity from renewable generators. It specified that they would purchase the electricity at fixed prices

⁸³ Scottish Renewables Obligation (SRO) should not be confused with the Renewables Obligation Scotland (ROS), which is one of the three obligations that make up the Renewables Obligation (RO) scheme.

⁸⁴ The fourteen electricity companies formed when the UK electricity market was privatised following the Electricity Act 1989.

for long-term contract periods (typically 15 years). The PES established the Non Fossil Purchasing Agency (NFPA) in 1990 as their agent and it enabled them to carry out their obligations to collectively contract with renewable generators and comply with the legislation. The NFPA became the electricity purchasing body in England and Wales in 2001. NFPA Scotland, a wholly-owned subsidiary of the NFPA, has acted as the purchasing body in Scotland since 2006.

6.28 The NFFO, NI NFFO and SRO are no longer open to new generators and the last contracts expired on 31 March 2019. Where these stations were also accredited under the RO, ROCs were issued to the electricity supplier who purchased the electricity, rather than to the operator of the generating station.

7. Changes in legislation

Chapter Summary

Amendments came into force during the 2018-19 year related to biomass cost control and additional Scottish hydro capacity. Additional legislation was prepared in readiness for EU Exit.

Biomass Cost Control

7.1 In January 2018, BEIS published a government response to their consultation on controlling the costs of biomass conversion and co-firing under the Renewables Obligation for England and Wales. BEIS opted for an amended version of the proposed generator cap which provides increased flexibility – an “annual ROC cap”.

7.2 The Renewables Obligation (Amendment) Order 2018 came into force in July 2018 and applied the cap for the first time in the 2018-19 obligation year. We have updated our guidance for generators⁸⁵ on the annual ROC cap.

Scottish Hydro additional capacity

7.3 In March 2018 Scottish Government consulted on enabling hydro-electric generating stations in Scotland to increase their declared net capacity (DNC) above 20MW, whilst retaining eligibility for Scottish Renewables Obligation Certificates (SROCs). In September 2018 they published their decision to go ahead with this amendment.

7.4 The Renewables Obligation (Scotland) Amendment Order 2018 came into force on 20 November 2018. We have updated our guidance to explain how these stations can successfully add capacity.

End of Transition Period Regulations

7.5 The Renewables Obligation (Amendment) (EU Exit) Regulations 2019 amend the UK-wide RO Orders to ensure that the scheme continues to operate in line with EU Regulation that will be retained in UK Law. The changes will come into force at the end of the Transition Period on 31 December 2020, following the UK’s exit from the EU on 31 January 2020.

⁸⁵ [Link to Ofgem guidance for generators](https://www.ofgem.gov.uk/publications-and-updates/renewables-obligation-guidance-generators): <<https://www.ofgem.gov.uk/publications-and-updates/renewables-obligation-guidance-generators>>

8. Implementation and improvement update

Chapter Summary

In 2018-19, we made changes to the Renewables and CHP Register (the Register) and our internal procedures to reflect changes to legislation. Guidance documents have been updated and our Operational Excellence programme continued to make improvements to our internal processes and for external stakeholders.

8.1 During 2018-19, following the closure of the scheme the previous year, we made minimal changes to the Register. All amendments were undertaken so that Ofgem could continue to meet its legislative duties.

In January 2019, changes were deployed to allow fuelled generating stations which generate using a combination of biomass and advanced conversion technologies, with a combined heat and power (CHP) uplift, to submit data and receive the correct number of certificates. These changes were made in response to some generators becoming more innovative with ways to generate electricity using fuelled technologies.

The 2018-19 RO Obligation level was revised to implement an exemption for Energy Intensive Industries (EIIs) for up to 85% of the indirect cost of the RO from 1st April 2018. Following this, amendments were made to the methodology used for the obligation calculation on the Supplier Compliance tab of the Register. Suppliers are now required to report on electricity supplied to EIIs.

8.2 A project is now underway to replace the legacy Register system. The new register is being designed to provide an improved user experience, be more intuitive and to include greater functionality for scheme participants and internal users. The discovery phase of the project is now complete, however we are still at the early stages of development. The new register is scheduled for deployment towards the end of 2020.

8.3 We have published an open letter⁸⁶ in relation to dormant applications under the RO. This document sets out Ofgem's proposed approach to deal with applications to the RO scheme where generators have failed to respond to requests for information needed in order to assess the application.

⁸⁶ [Open letter on Ofgem's approach on application dormancy](https://www.ofgem.gov.uk/publications-and-updates/renewables-obligation-ro-dormant-applications): <<https://www.ofgem.gov.uk/publications-and-updates/renewables-obligation-ro-dormant-applications>>

8.4 As part of our Supplier Licensing Review (SLR) and in conjunction with BEIS, we are reviewing the costs incurred by industry through the mutualisation process when a supplier fails. These reforms will be progressing to statutory consultation in spring 2020.

Guidance

[Renewables Obligation: Guidance on closure of the scheme in England, Scotland and Wales \(April 2018\)](https://www.ofgem.gov.uk/system/files/docs/2018/04/ro_closure_guidance_mar2018_final_0.pdf): <https://www.ofgem.gov.uk/system/files/docs/2018/04/ro_closure_guidance_mar2018_final_0.pdf>

[Renewables Obligation: Sustainability Reporting \(April 2018\)](https://www.ofgem.gov.uk/system/files/docs/2018/04/sustainability_reporting_guidance.pdf): <https://www.ofgem.gov.uk/system/files/docs/2018/04/sustainability_reporting_guidance.pdf>

[Guidance for generators: Co-location of electricity storage facilities with renewable generation supported under the Renewables Obligation or Feed-in Tariff schemes \(Version 2\) \(December 2018\)](https://www.ofgem.gov.uk/system/files/docs/2018/12/storage_guidance_final_v2.pdf): <https://www.ofgem.gov.uk/system/files/docs/2018/12/storage_guidance_final_v2.pdf>

[RO Guidance for Suppliers \(March 2019\)](https://www.ofgem.gov.uk/system/files/docs/2019/03/1904_ro_supplier_guidance.pdf): <https://www.ofgem.gov.uk/system/files/docs/2019/03/1904_ro_supplier_guidance.pdf>

Appendix 1: ROCs issued

Table A1.1: ROCs issued during 2018-19 by country and technology

Technology	England	Scotland	Wales	Northern Ireland	Total
Fuelled	16,467,387	2,367,844	522,180	1,396,475	20,753,886
Hydro	53,071	2,165,246	124,554	38,944	2,381,815
Landfill gas	2,831,465	340,375	93,169	60,815	3,325,824
Sewage gas	600,955	24,951	35,412	0	661,318
Offshore wind	34,409,564	2,031,289	3,905,422	0	40,346,275
Onshore wind	5,624,144	16,491,953	2,149,348	3,661,578	27,927,023
Solar PV	9,108,409	61,977	776,132	558,755	10,505,273
Tidal stream	0	46,589	0	0	46,589
Total	69,094,995	23,530,224	7,606,217	5,716,567	105,948,003

Appendix 2: Compliance by licensed suppliers

Table A2.1: Summary of compliance by supplier group in 2018-19 (all schemes)

Supplier Group	Total Obligation (ROCs)	Total ROCs presented	Total Payments	Total Redistributed
Ampoweruk Ltd	14,892	0	£707,523.96	£0.00
Avid Energy Limited	15,083	0	£712,219.26	£0.00
Avro Energy Limited	471,552	0	£22,266,685.44	£0.00
Axis Telecom Limited	12,619	0	£596,721.67	£0.00
Axpo UK Limited	362,022	362,022	£0.00	£2,831,567.00
BES Commercial Electricity Limited	219,689	37,408	£8,687,309.63	£292,585.00
Breeze Energy Supply Limited	42,051	0	£1,518,390.63	£0.00
Brilliant Energy	38,241	0	£0.00	£0.00
Bristol Energy Technology & Services (Supply) Limited	141,020	2,500	£6,540,914.40	£19,550.00
British Gas Trading Limited	13,130,215	10,536,626	£122,472,011.34	£82,412,670.00
Brook Green Trading Limited	228,683	119,000	£5,179,231.26	£930,760.00
Bruntwood Energy Services Limited	30,875	0	£1,457,917.50	£0.00
Bryt Energy Limited	297,295	297,295	£0.00	£2,325,302.00
Bulb Energy Ltd	1,474,524	24,963	£68,448,270.00	£195,246.00
Business Power and Gas Limited	102,387	0	£4,834,714.14	£0.00
CNG Electricity Limited	1,700	1	£80,274.00	£6.00
Co-operative Energy Limited	762,030	82,638	£32,091,017.01	£646,351.00
Corona Energy Retail 4 Limited	189,407	185,000	£208,098.54	£1,446,983.00
Delta Gas and Power Limited	1,947	0	£92,667.00	£0.00
Dual Energy Direct Limited	282,700	282,700	£0.00	£2,211,147.00
E (Gas and Electricity) Limited	247,685	0	£11,797,021.60	£0.00
E.ON UK plc	13,582,812	13,582,812	£0.00	£106,238,541.00
Eco Green Management Ltd	15,273	14,505	£36,264.96	£113,448.00
Economy Energy Trading Limited	301,668	0	£0.00	£0.00
EDF Energy Customers Plc	20,273,283	18,075,918	£103,759,575.30	£141,381,564.00
Edgware Energy Limited	19	0	£897.18	£0.00
Effortless Energy Ltd.	6,130	0	£289,458.60	£0.00
Electraphase Ltd	2,180	0	£0.00	£0.00
ElectroRoute Energy Limited	3,452	112	£157,714.80	£873.00
Eneco Energy Trade BV	207,735	207,298	£20,732.66	£1,621,387.00
ENGIE Power Limited	4,124,074	3,479,806	£30,422,334.96	£27,217,449.00
Enstroga Ltd	65,357	0	£3,086,157.54	£0.00
Entice Energy Limited	132	0	£6,233.04	£0.00
EPG Energy Limited	14,581	0	£689,491.00	£0.00
ESB Energy Limited	55,915	55,915	£0.00	£437,339.00
Eversmart Energy Ltd	48,711	0	£0.00	£0.00

Renewables Obligation (RO)

Supplier Group	Total Obligation (ROCs)	Total ROCs presented	Total Payments	Total Redistributed
Extra Energy Supply Limited	242,215	0	£0.00	£0.00
F & S Energy Limited	55,442	13,679	£1,972,048.86	£106,988.00
Flexitricity Limited	538	0	£25,404.36	£0.00
Foxglove Energy Supply Limited	181,613	0	£8,599,320.62	£0.00
Gas and Power Limited	9,800	9,800	£0.00	£76,648.00
Gazprom Marketing & Trading Retail Limited	284,975	284,975	£0.00	£2,228,940.00
GEN4U	382	0	£0.00	£0.00
GNERGY Limited	14,271	0	£0.00	£0.00
Good Energy Limited	237,010	237,010	£0.00	£1,853,782.00
Greater London Authority	1,372	0	£64,806.25	£0.00
Green Energy (UK) Plc	49,681	49,681	£0.00	£388,578.00
Green Network Energy Limited	332,648	50,000	£13,346,639.00	£391,074.00
Hartree Partners Supply (UK) Limited	180	98	£3,872.06	£764.00
Haven Power Limited	5,308,250	5,308,250	£0.00	£41,518,702.00
Home Energy Trading Ltd	2	0	£94.44	£0.00
Hudson Energy Supply UK Limited	1,007,783	0	£10,000,000.00	£0.00
I Supply Energy Limited	277,019	277,019	£0.00	£2,166,713.00
Igloo Energy Supply Limited	36,875	0	£1,741,237.50	£0.00
Iresa	59,321	0	£0.00	£0.00
Kensington Power Limited	271,956	174,451	£4,604,186.10	£1,364,473.00
Limejump Energy Limited	15,688	1,638	£663,441.00	£12,808.00
Logicor Energy Limited	19	0	£897.21	£0.00
MA Energy Limited	45,499	0	£2,157,125.85	£0.00
Marble Power Limited	84,371	0	£3,983,998.62	£0.00
Maxen Power Supply Limited	45	0	£2,124.90	£0.00
MVV Environment Services Limited	5,174	1,293	£183,260.82	£10,110.00
Nabuh Energy Ltd	18,471	0	£230,000.00	£0.00
Npower	16,575,864	12,560,362	£189,612,004.44	£98,241,392.00
Octopus Energy Limited	747,081	7,581	£34,919,190.00	£59,292.00
OneSelect	51,458	0	£0.00	£0.00
Opus Energy Limited	2,101,041	2,101,041	£0.00	£16,433,376.00
Orbit Energy Limited	7,935	7,900	£1,652.70	£61,787.00
Orsted Power Sales (UK) Limited	1,768,667	1,768,667	£0.00	£13,833,702.00
Our Power Energy Supply Limited	38,037	0	£0.00	£0.00
Ovo Electricity Limited	1,865,410	900,000	£45,586,660.20	£7,039,387.00
People's Energy (Supply) Limited	47,422	0	£2,241,221.95	£0.00
PFP Energy Supplies Limited	124,969	30,000	£4,513,443.21	£234,644.00
Planet 9 Energy Limited	1,682	0	£79,424.04	£0.00
Power4All Limited	538,197	0	£25,413,662.34	£0.00
Pozitive Energy Ltd	330,637	0	£15,690,369.43	£0.00
Pure Planet Limited	142,854	142,854	£0.00	£1,117,337.00
PX supply	32,525	0	£1,535,830.50	£0.00
Robin Hood Energy Limited	199,829	0	£9,516,195.38	£0.00

Renewables Obligation (RO)

Supplier Group	Total Obligation (ROCs)	Total ROCs presented	Total Payments	Total Redistributed
Rutherford Energy Supply Limited	2,783	0	£0.00	£0.00
Scottish Power Energy Retail Limited	9,022,817	9,022,817	£0.00	£70,572,346.00
Shell Energy Retail Limited	1,159,608	1,159,608	£0.00	£9,069,921.00
Shell Energy Supply UK Ltd.	250,385	250,385	£0.00	£1,958,394.00
Simplicity Energy Limited	15,700	0	£741,354.00	£0.00
SINQ Power Limited	71,117	0	£3,358,144.74	£0.00
SmartestEnergy Limited	3,339,346	3,339,346	£0.00	£26,118,835.00
Snowdrop Energy Supply Limited	4,325	0	£0.00	£0.00
SO Energy Trading Limited	132,733	0	£6,267,652.26	£0.00
Social Energy Supply Ltd	4	0	£188.88	£0.00
Solarplicity Supply Limited	91,226	0	£0.00	£0.00
Spark Energy Supply Limited	235,243	0	£0.00	£0.00
Squeaky Clean Energy Limited	56,222	56,222	£0.00	£439,739.00
SSE Energy Supply Limited	15,190,746	15,190,746	£0.00	£118,815,062.00
Statkraft Markets GmbH	439	0	£20,729.58	£0.00
Switch Business Gas and Power Ltd	2,226	0	£105,111.72	£0.00
Symbio Energy Limited	287	0	£13,562.81	£0.00
The Renewable Energy Company Limited	418,256	418,256	£0.00	£3,271,405.00
Together Energy Supply Limited	136,073	0	£6,465,855.68	£0.00
Tonik Energy Limited	137,130	137,130	£0.00	£1,072,565.00
Total Gas & Power Limited	4,788,259	4,788,259	£0.00	£37,451,570.00
TOTO Energy Ltd	96,482	0	£0.00	£0.00
Toucan Energy Limited	225	4	£10,435.62	£29.00
Tradelink Solutions Limited	308	308	£0.00	£2,406.00
Tru Energy Limited	6,147	0	£290,716.76	£0.00
UK Power Reserve Limited	3,760	0	£177,547.20	£0.00
United Gas & Power Ltd	15,842	0	£748,059.24	£0.00
URE Energy Limited	5,488	0	£0.00	£0.00
Usio Energy	3,924	0	£0.00	£0.00
Utilita Energy Limited	1,244,412	1,059,000	£8,760,827.66	£8,283,010.00
Utility Point Limited	83,425	0	£3,939,328.50	£0.00
Vattenfall Energy Trading GmbH	131	131	£0.00	£1,022.00
Wilton Energy Limited	34,315	0	£1,620,354.30	£0.00
Yorkshire Energy	19,351	0	£913,754.23	£0.00
Zebra Power Limited	14,148	0	£668,068.56	£0.00
3T Power Limited	10,280	9,715	£26,679.30	£75,982.00
Budget Energy Limited	45,482	24,693	£981,656.58	£193,135.00
Click Energy	18,905	0	£901,272.52	£0.00
ESB Independent Energy (NI) Ltd	221,473	221,473	£0.00	£1,732,258.00
LCC Power Limited	207,579	40,971	£7,867,229.76	£320,453.00
Naturgy Limited	3,168	0	£149,592.96	£0.00
NIE Energy Ltd	444,092	444,092	£0.00	£3,473,482.00
Viridian Energy Supply Limited	207,986	207,986	£0.00	£1,626,768.00
Totals	127,623,995	107,643,960	£846,876,082.06	£841,941,647.00

Table A2.2: Compliance by licensee⁸⁷ with an obligation in England & 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 redistributed	Late buy-out redistrib.
Ampoweruk Ltd	14,236	0	0	0	£100,000.00	£576,547.64	£0.00	£0.00
Avid Energy Limited	10,594	0	0	0	£500,248.68	£0.00	£0.00	£0.00
Avro Energy Limited	450,751	0	0	0	£21,284,462.22	£0.00	£0.00	£0.00
Axis Telecom Limited	11,751	0	0	0	£354,882.22	£200,852.49	£0.00	£0.00
AXPO UK Limited	335,918	335,918	8	69,745	£0.00	£0.00	£2,463,204.00	£368,363.00
BES Commercial Electricity Limited	199,339	37,408	0	0	£0.00	£7,717,451.27	£254,523.00	£38,062.00
Breeze Energy Supply Limited	41,663	0	0	0	£0.00	£1,500,000.00	£0.00	£0.00
Brilliant Energy	32,666	0	0	0	£0.00	£0.00	£0.00	£0.00
Bristol Energy Technology & Services (Supply) Limited	134,626	2,500	0	0	£6,238,989.72	£0.00	£17,009.00	£2,541.00
British Gas Trading Limited	12,068,670	9,684,771	197,192	74,184	£112,570,449.54	£0.00	£71,691,445.00	£10,721,225.00
Brook Green Trading Limited	213,567	119,000	0	0	£4,465,453.74	£0.00	£809,677.00	£121,083.00
Bruntwood Energy Services Limited	30,817	0	0	0	£1,455,178.74	£0.00	£0.00	£0.00
Bryt Energy Limited	275,939	275,939	0	0	£0.00	£0.00	£2,022,800.00	£302,502.00
Bulb Energy Ltd	1,309,948	0	0	0	£61,855,744.14	£0.00	£169,847.00	£25,399.00
Business Power and Gas Limited	96,821	0	0	0	£4,571,887.62	£0.00	£0.00	£0.00
CNG Electricity Limited	1,645	1	0	1	£77,676.90	£0.00	£6.00	£0.00
Co-Operative Energy Limited	528,965	36,416	0	0	£0.00	£23,265,505.54	£429,971.00	£64,300.00
Flow Energy Limited	186,843	0	0	0	£0.00	£8,825,511.47	£132,297.00	£19,783.00
Corona Energy Retail 4 Limited	172,069	167,662	0	0	£208,098.54	£0.00	£1,258,743.00	£188,240.00
Delta Gas and Power Limited	1,736	0	0	0	£0.00	£82,629.72	£0.00	£0.00
Dual Energy Direct Limited	250,121	250,121	0	1	£0.00	£0.00	£1,923,496.00	£287,651.00
E (Gas and Electricity) Limited	225,750	0	0	0	£0.00	£10,752,276.59	£0.00	£0.00
E.ON Energy Solutions Limited	7,494,181	7,494,181	0	2,982	£0.00	£0.00	£53,783,324.00	£8,043,122.00
E.ON UK Plc	5,383,412	5,383,412	0	0	£0.00	£0.00	£38,634,439.00	£5,777,656.00
Eco Green Management Ltd	13,186	13,013	0	0	£8,169.06	£0.00	£98,691.00	£14,757.00
Economy Energy Trading Limited	277,688	0	0	0	£0.00	£0.00	£0.00	£0.00
EDF Energy Customers Plc	18,083,843	15,886,478	12,210	174,946	£103,759,575.30	£0.00	£122,988,960.00	£18,392,604.00
Edgware Energy Limited	19	0	0	0	£897.18	£0.00	£0.00	£0.00
Effortless Energy Ltd.	5,869	0	0	0	£277,134.18	£0.00	£0.00	£0.00
Electraphase Ltd	1,858	0	0	0	£0.00	£0.00	£0.00	£0.00
Electroroute Energy Limited	3,452	112	0	0	£157,714.80	£0.00	£761.00	£112.00
Eneco Energy Trade BV	198,427	197,990	0	9,044	£0.00	£20,732.66	£1,410,459.00	£210,928.00
ENGIE Power Limited	3,811,366	3,167,098	0	13,776	£30,422,334.96	£0.00	£23,676,679.00	£3,540,770.00
Enstroga Ltd	58,583	0	0	0	£2,766,289.26	£0.00	£0.00	£0.00

⁸⁷ The name of each Licensee in Tables A2.2 to A2.4 refers to a Licence group that is owned by its parent company (Supplier Group). For a complete list of supplier groups and their licences, please contact: REcompliance@ofgem.gov.uk

Renewables Obligation (RO)

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 redistributed	Late buy-out redistrib.
Simply Your Energy Limited	124	0	0	0	£5,855.28	£0.00	£0.00	£0.00
EPG Energy Limited	12,985	0	0	0	£0.00	£614,021.03	£0.00	£0.00
ESB Energy limited	53,596	53,596	0	13,399	£0.00	£0.00	£380,445.00	£56,894.00
Eversmart Energy Ltd	46,173	0	0	0	£0.00	£0.00	£0.00	£0.00
Extra Energy Supply Limited	222,265	0	0	0	£0.00	£0.00	£0.00	£0.00
F & S Energy Limited	52,860	13,679	0	529	£1,850,126.82	£0.00	£93,071.00	£13,917.00
Flexitricity Limited	538	0	0	0	£25,404.36	£0.00	£0.00	£0.00
Foxglove Energy Supply Limited	164,152	0	0	0	£3,175,491.58	£4,599,320.62	£0.00	£0.00
Gas and Power Limited	9,482	9,482	0	0	£0.00	£0.00	£66,678.00	£9,970.00
Gazprom Marketing & Trading Retail Limited	267,504	267,504	0	4,710	£0.00	£0.00	£1,938,974.00	£289,966.00
GEN4U	368	0	0	0	£0.00	£0.00	£0.00	£0.00
GNERGY Limited	13,953	0	0	0	£0.00	£0.00	£0.00	£0.00
Good Energy Limited	221,920	221,920	0	14,030	£0.00	£0.00	£1,612,621.00	£241,161.00
Greater London Authority	1,372	0	0	0	£0.00	£64,806.25	£0.00	£0.00
Green Energy (UK) plc	47,680	47,680	0	6,448	£0.00	£0.00	£338,029.00	£50,549.00
Green Network Energy Limited	305,076	50,000	0	0	£12,044,689.16	£0.00	£340,200.00	£50,874.00
Hartree Partners Supply (UK) Limited	180	98	0	0	£3,872.06	£0.00	£666.00	£98.00
Haven Power Limited	5,012,032	5,012,032	3,454	146	£0.00	£0.00	£36,117,454.00	£5,401,248.00
Home Energy Trading Ltd	2	0	0	0	£94.44	£0.00	£0.00	£0.00
Hudson Energy Supply UK Limited	927,282	0	0	0	£0.00	£10,000,000.00	£0.00	£0.00
I Supply Energy Limited	255,684	255,684	0	0	£0.00	£0.00	£1,884,842.00	£281,871.00
Igloo Energy Supply Limited	36,519	0	0	0	£1,724,427.18	£0.00	£0.00	£0.00
Iresa	55,069	0	0	0	£0.00	£0.00	£0.00	£0.00
Kensington Power Limited	260,483	174,451	0	64,451	£4,062,431.04	£0.00	£1,186,967.00	£177,506.00
Limejump Energy Limited	15,684	1,638	326	463	£663,252.12	£0.00	£11,143.00	£1,665.00
Logicor Energy Limited	19	0	0	0	£879.18	£18.03	£0.00	£0.00
MA Energy Limited	41,018	0	0	0	£550,000.00	£1,395,533.03	£0.00	£0.00
Marble Power Limited	75,419	0	0	0	£3,561,285.18	£0.00	£0.00	£0.00
Maxen Power Supply Limited	39	0	0	0	£1,841.58	£0.00	£0.00	£0.00
MVV Environment Services Limited	4,973	1,243	0	1,243	£176,130.60	£0.00	£8,796.00	£1,314.00
Nabuh Energy Ltd	17,326	0	0	0	£0.00	£175,413.54	£0.00	£0.00
Electricity Plus Supply Limited	913,353	676,054	0	0	£188.88	£0.00	£4,886,376.00	£730,740.00
Npower Direct Limited	305,089	225,824	0	0	£3,742,893.30	£0.00	£1,669,072.00	£249,603.00
Npower Limited	11,103,386	8,218,601	8,487	31,800	£147,424,617.60	£0.00	£62,089,260.00	£9,285,248.00
Npower Northern Supply Limited	2,823,593	2,089,993	0	0	£34,640,592.00	£0.00	£15,254,380.00	£2,281,242.00
Npower Yorkshire Supply Limited	310,044	229,491	0	0	£3,803,712.66	£0.00	£1,561,896.00	£233,575.00
Affect Energy Ltd	50,404	0	0	0	£2,380,076.88	£0.00	£0.00	£0.00
Octopus Energy Limited	640,297	7,581	0	0	£29,876,849.52	£0.00	£51,580.00	£7,712.00
OneSelect	51,458	0	0	0	£0.00	£0.00	£0.00	£0.00

Renewables Obligation (RO)

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 redistributed	Late buy-out redistrib.
Opus Energy (Corporate) Limited	946,107	946,107	0	114,109	£0.00	£0.00	£6,866,999.00	£1,026,937.00
Opus Energy Limited	1,002,847	1,002,847	0	0	£0.00	£0.00	£7,428,529.00	£1,110,911.00
Orbit Energy Limited	7,373	7,373	0	0	£0.00	£0.00	£53,750.00	£8,037.00
Orsted Power Sales (UK) Limited	1,633,404	1,633,404	0	0	£0.00	£0.00	£12,034,050.00	£1,799,652.00
Our Power Energy Supply Limited	3,438	0	0	0	£0.00	£0.00	£0.00	£0.00
OVO Electricity Limited	1,778,179	900,000	1,693	80,403	£41,467,612.38	£0.00	£6,123,620.00	£915,767.00
People's Energy (Supply) Limited	39,919	0	0	0	£1,300,000.00	£586,930.29	£0.00	£0.00
PFP Energy Supplies Limited	115,741	28,079	0	0	£0.00	£4,166,721.66	£204,120.00	£30,524.00
Planet 9 Energy Limited	1,682	0	0	0	£0.00	£79,424.04	£0.00	£0.00
Power4All Limited	475,047	0	0	0	£22,431,719.34	£0.00	£0.00	£0.00
Positive Energy Ltd	317,276	0	0	0	£3,981,772.72	£11,077,690.29	£0.00	£0.00
Pure Planet Limited	127,637	127,637	0	0	£0.00	£0.00	£971,981.00	£145,356.00
Coulomb Energy Supply Limited	27,490	0	0	0	£1,298,077.80	£0.00	£0.00	£0.00
PX Supply Limited	5,035	0	0	0	£237,752.70	£0.00	£0.00	£0.00
Robin Hood Energy Limited	192,472	0	0	0	£0.00	£9,165,842.58	£0.00	£0.00
Rutherford Energy Supply Limited	2,756	0	0	0	£0.00	£0.00	£0.00	£0.00
Scottish Power Energy Retail Limited	7,313,633	7,313,633	0	0	£0.00	£0.00	£61,391,452.00	£9,180,894.00
Shell Energy Retail Limited	1,097,362	1,097,362	322	0	£0.00	£0.00	£7,889,997.00	£1,179,924.00
Shell Energy Supply UK Ltd.	159,137	159,137	151	930	£0.00	£0.00	£1,703,624.00	£254,770.00
Simplicity Energy Limited	15,700	0	0	0	£741,354.00	£0.00	£0.00	£0.00
Sing Power Limited	44,856	0	0	0	£2,118,100.32	£0.00	£0.00	£0.00
SmartestEnergy Limited	3,204,368	3,204,368	7,918	359,449	£0.00	£0.00	£22,720,985.00	£3,397,850.00
Snowdrop Energy Supply Limited	4,292	0	0	0	£0.00	£0.00	£0.00	£0.00
So Energy Trading Limited	122,418	0	0	0	£5,780,577.96	£0.00	£0.00	£0.00
Social Energy Supply Ltd	4	0	0	0	£188.88	£0.00	£0.00	£0.00
Solarplicity Supply Limited	84,243	0	0	0	£0.00	£0.00	£0.00	£0.00
Spark Energy Supply Limited	220,604	0	0	0	£0.00	£0.00	£0.00	£0.00
Squeaky Clean Energy Limited	52,530	52,530	0	0	£0.00	£0.00	£382,534.00	£57,205.00
SSE Electricity Limited	4,832,999	4,832,999	0	0	£0.00	£0.00	£40,681,327.00	£6,083,761.00
SSE Energy Supply Limited	7,964,661	7,964,661	55	778,073	£0.00	£0.00	£60,810,083.00	£9,093,952.00
Statkraft Markets GmbH	38	0	0	0	£1,794.36	£0.00	£0.00	£0.00
Switch Business Gas and Power Ltd	2,030	0	0	0	£95,856.60	£0.00	£0.00	£0.00
Symbio Energy Limited	280	0	0	0	£0.00	£13,232.01	£0.00	£0.00
The Renewable Energy Company Limited	403,218	403,218	0	1	£0.00	£0.00	£2,845,822.00	£425,583.00
Eddington Energy Supply Limited	118,144	0	0	0	£0.00	£5,613,913.51	£0.00	£0.00
Together Energy Supply Limited	530	0	0	0	£0.00	£25,184.30	£0.00	£0.00

Renewables Obligation (RO)

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 redistributed	Late buy-out redistrib.
Tonik Energy Limited	130,156	130,156	0	386	£0.00	£0.00	£933,034.00	£139,531.00
Total Gas & Power Limited	4,480,543	4,480,543	0	873,208	£0.00	£0.00	£32,579,423.00	£4,872,147.00
TOTO Energy Ltd	91,474	0	0	0	£0.00	£0.00	£0.00	£0.00
Toucan Energy Limited	225	4	0	4	£10,435.62	£0.00	£26.00	£3.00
Tradelink Solutions Limited	308	308	0	0	£0.00	£0.00	£2,094.00	£312.00
Tru Energy Limited	6,142	0	0	0	£0.00	£290,480.24	£0.00	£0.00
UK Power Reserve Limited	3,760	0	0	0	£177,547.20	£0.00	£0.00	£0.00
United Gas & Power Ltd	15,024	0	0	0	£709,433.28	£0.00	£0.00	£0.00
Ure Energy Limited	5,488	0	0	0	£0.00	£0.00	£0.00	£0.00
Usio Energy	3,539	0	0	0	£0.00	£0.00	£0.00	£0.00
Utilita Energy Limited	1,138,738	953,326	0	0	£4,755,154.64	£4,005,673.02	£7,205,458.00	£1,077,552.00
Utility Point Limited	74,979	0	0	0	£3,540,508.38	£0.00	£0.00	£0.00
Vattenfall Energy Trading GmbH	67	67	0	0	£0.00	£0.00	£890.00	£132.00
Wilton Energy Limited	34,315	0	0	0	£1,620,354.30	£0.00	£0.00	£0.00
Daisy Energy Supply Limited	18,114	0	0	0	£855,343.09	£0.00	£0.00	£0.00
Zebra Power Limited	13,101	0	0	0	£618,629.22	£0.00	£0.00	£0.00
Totals	114,579,143	95,846,330	231,816	2,688,461	£692,532,111.01	£104,815,711.82	£724,088,579.00	£108,285,051.00

Table A2.3: Compliance by licensee⁸⁸ with an obligation in 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 redistributed	Late buy-out redistrib.
Ampoweruk Ltd	656	0	0	0	£30,976.32	£0.00	£0.00	£0.00
Avid Energy Limited	4,489	0	0	0	£211,970.58	£0.00	£0.00	£0.00
Avro Energy Limited	20,801	0	0	0	£982,223.22	£0.00	£0.00	£0.00
Axis Telecom Limited	868	0	0	0	£40,986.96	£0.00	£0.00	£0.00
AXPO UK Limited	26,104	26,104	0	0	£0.00	£0.00	£2,463,204.00	£368,363.00
BES Commercial Electricity Limited	20,350	0	0	0	£0.00	£969,858.36	£254,523.00	£38,062.00
Breeze Energy Supply Limited	388	0	0	0	£0.00	£18,390.63	£0.00	£0.00
Brilliant Energy	5,575	0	0	0	£0.00	£0.00	£0.00	£0.00
Bristol Energy Technology & Services (Supply) Limited	6,394	0	0	0	£301,924.68	£0.00	£17,009.00	£2,541.00
British Gas Trading Limited	1,061,545	851,855	15,122	0	£9,901,561.80	£0.00	£71,691,445.00	£10,721,225.00
Brook Green Trading Limited	15,116	0	0	0	£713,777.52	£0.00	£809,677.00	£121,083.00
Bruntwood Energy Services Limited	58	0	0	0	£2,738.76	£0.00	£0.00	£0.00
Bryt Energy Limited	21,356	21,356	0	0	£0.00	£0.00	£2,022,800.00	£302,502.00
Bulb Energy Ltd	164,576	24,963	0	0	£6,592,525.86	£0.00	£169,847.00	£25,399.00
Business Power and Gas Limited	5,566	0	0	0	£262,826.52	£0.00	£0.00	£0.00
CNG Electricity Limited	55	0	0	0	£2,597.10	£0.00	£6.00	£0.00
Co-Operative Energy Limited	26,778	26,778	0	0	£0.00	£0.00	£429,971.00	£64,300.00
Flow Energy Limited	19,444	19,444	0	0	£0.00	£0.00	£132,297.00	£19,783.00
Corona Energy Retail 4 Limited	17,338	17,338	0	0	£0.00	£0.00	£1,258,743.00	£188,240.00
Delta Gas and Power Limited	211	0	0	0	£0.00	£10,037.28	£0.00	£0.00
Dual Energy Direct Limited	32,579	32,579	0	0	£0.00	£0.00	£1,923,496.00	£287,651.00
E (Gas and Electricity) Limited	21,935	0	0	0	£0.00	£1,044,745.01	£0.00	£0.00
E.ON Energy Solutions Limited	410,455	410,455	0	0	£0.00	£0.00	£53,783,324.00	£8,043,122.00
E.ON UK Plc	294,764	294,764	0	0	£0.00	£0.00	£38,634,439.00	£5,777,656.00
Eco Green Management Ltd	2,087	1,492	0	505	£28,095.90	£0.00	£98,691.00	£14,757.00
Economy Energy Trading Limited	23,980	0	0	0	£0.00	£0.00	£0.00	£0.00
EDF Energy Customers Plc	2,189,440	2,189,440	3,191	436,059	£0.00	£0.00	£122,988,960.00	£18,392,604.00
Effortless Energy Ltd.	261	0	0	0	£12,324.42	£0.00	£0.00	£0.00
Electraphase Ltd	322	0	0	0	£0.00	£0.00	£0.00	£0.00
Eneco Energy Trade BV	9,308	9,308	0	0	£0.00	£0.00	£1,410,459.00	£210,928.00
ENGIE Power Limited	312,708	312,708	0	0	£0.00	£0.00	£23,676,679.00	£3,540,770.00
Enstroga Ltd	6,774	0	0	0	£319,868.28	£0.00	£0.00	£0.00
Simply Your Energy Limited	8	0	0	0	£377.76	£0.00	£0.00	£0.00
EPG Energy Limited	1,596	0	0	0	£0.00	£75,469.97	£0.00	£0.00
ESB Energy limited	2,319	2,319	0	579	£0.00	£0.00	£380,445.00	£56,894.00
Eversmart Energy Ltd	2,538	0	0	0	£0.00	£0.00	£0.00	£0.00

⁸⁸ The name of each Licensee in Tables A2.2 to A2.4 refers to a Licence group that is owned by its parent company (Supplier Group). For a complete list of supplier groups and their licences, please contact: REcompliance@ofgem.gov.uk

Renewables Obligation (RO)

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 redistributed	Late buy-out redistrib.
Extra Energy Supply Limited	19,950	0	0	0	£0.00	£0.00	£0.00	£0.00
F & S Energy Limited	2,582	0	0	0	£121,922.04	£0.00	£93,071.00	£13,917.00
Foxglove Energy Supply Limited	17,461	0	0	0	£824,508.42	£0.00	£0.00	£0.00
Gas and Power Limited	318	318	0	0	£0.00	£0.00	£66,678.00	£9,970.00
Gazprom Marketing & Trading Retail Limited	17,471	17,471	0	0	£0.00	£0.00	£1,938,974.00	£289,966.00
GEN4U	14	0	0	0	£0.00	£0.00	£0.00	£0.00
GNERGY Limited	318	0	0	0	£0.00	£0.00	£0.00	£0.00
Good Energy Limited	15,090	15,090	0	0	£0.00	£0.00	£1,612,621.00	£241,161.00
Green Energy (UK) plc	2,001	2,001	0	500	£0.00	£0.00	£338,029.00	£50,549.00
Green Network Energy Limited	27,572	0	0	0	£1,301,949.84	£0.00	£340,200.00	£50,874.00
Haven Power Limited	296,218	296,218	0	0	£0.00	£0.00	£36,117,454.00	£5,401,248.00
Hudson Energy Supply UK Limited	80,501	0	0	0	£0.00	£0.00	£0.00	£0.00
I Supply Energy Limited	21,335	21,335	0	0	£0.00	£0.00	£1,884,842.00	£281,871.00
Igloo Energy Supply Limited	356	0	0	0	£16,810.32	£0.00	£0.00	£0.00
Iresa	4,252	0	0	0	£0.00	£0.00	£0.00	£0.00
Kensington Power Limited	11,473	0	0	0	£541,755.06	£0.00	£1,186,967.00	£177,506.00
Limejump Energy Limited	4	0	0	0	£188.88	£0.00	£11,143.00	£1,665.00
MA Energy Limited	4,481	0	0	0	£211,592.82	£0.00	£0.00	£0.00
Marble Power Limited	8,952	0	0	0	£422,713.44	£0.00	£0.00	£0.00
Maxen Power Supply Limited	6	0	0	0	£283.32	£0.00	£0.00	£0.00
MVV Environment Services Limited	201	50	0	50	£7,130.22	£0.00	£8,796.00	£1,314.00
Nabuh Energy Ltd	1,145	0	0	0	£0.00	£54,586.46	£0.00	£0.00
Electricity Plus Supply Limited	42,106	42,106	0	0	£0.00	£0.00	£4,886,376.00	£730,740.00
Npower Direct Limited	19,483	19,483	0	0	£0.00	£0.00	£1,669,072.00	£249,603.00
Npower Limited	906,774	906,774	423	0	£0.00	£0.00	£62,089,260.00	£9,285,248.00
Npower Northern Supply Limited	151,972	151,972	0	0	£0.00	£0.00	£15,254,380.00	£2,281,242.00
Npower Yorkshire Supply Limited	64	64	0	0	£0.00	£0.00	£1,561,896.00	£233,575.00
Affect Energy Ltd	142	0	0	0	£6,705.24	£0.00	£0.00	£0.00
Octopus Energy Limited	56,238	0	0	0	£2,655,558.36	£0.00	£51,580.00	£7,712.00
Opus Energy (Corporate) Limited	63,149	63,149	0	0	£0.00	£0.00	£6,866,999.00	£1,026,937.00
Opus Energy Limited	88,938	88,938	0	0	£0.00	£0.00	£7,428,529.00	£1,110,911.00
Orbit Energy Limited	562	527	0	0	£1,652.70	£0.00	£53,750.00	£8,037.00
Orsted Power Sales (UK) Limited	135,263	135,263	0	2,621	£0.00	£0.00	£12,034,050.00	£1,799,652.00
Our Power Energy Supply Limited	34,599	0	0	0	£0.00	£0.00	£0.00	£0.00
OVO Electricity Limited	87,231	0	0	0	£4,119,047.82	£0.00	£6,123,620.00	£915,767.00
People's Energy (Supply) Limited	7,503	0	0	0	£354,291.66	£0.00	£0.00	£0.00
PFP Energy Supplies Limited	9,228	1,921	0	0	£0.00	£346,721.55	£204,120.00	£30,524.00
Power4All Limited	63,150	0	0	0	£2,981,943.00	£0.00	£0.00	£0.00
Pozitive Energy Ltd	13,361	0	0	0	£630,906.42	£0.00	£0.00	£0.00
Pure Planet Limited	15,217	15,217	0	0	£0.00	£0.00	£971,981.00	£145,356.00

Renewables Obligation (RO)

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 redistributed	Late buy-out redistrib.
Robin Hood Energy Limited	7,357	0	0	0	£0.00	£350,352.80	£0.00	£0.00
Rutherford Energy Supply Limited	27	0	0	0	£0.00	£0.00	£0.00	£0.00
Scottish Power Energy Retail Limited	1,709,184	1,709,184	0	0	£0.00	£0.00	£61,391,452.00	£9,180,894.00
Shell Energy Retail Limited	62,246	62,246	121	0	£0.00	£0.00	£7,889,997.00	£1,179,924.00
Shell Energy Supply UK Ltd.	91,248	91,248	3,406	4,211	£0.00	£0.00	£1,703,624.00	£254,770.00
Sinq Power Limited	26,261	0	0	0	£1,240,044.42	£0.00	£0.00	£0.00
SmartestEnergy Limited	134,978	134,978	0	0	£0.00	£0.00	£22,720,985.00	£3,397,850.00
Snowdrop Energy Supply Limited	33	0	0	0	£0.00	£0.00	£0.00	£0.00
So Energy Trading Limited	10,315	0	0	0	£487,074.30	£0.00	£0.00	£0.00
Solarplicity Supply Limited	6,983	0	0	0	£0.00	£0.00	£0.00	£0.00
Spark Energy Supply Limited	14,639	0	0	0	£0.00	£0.00	£0.00	£0.00
Squeaky Clean Energy Limited	3,692	3,692	0	0	£0.00	£0.00	£382,534.00	£57,205.00
SSE Electricity Limited	1,146,012	1,146,012	0	6,377	£0.00	£0.00	£40,681,327.00	£6,083,761.00
SSE Energy Supply Limited	972,711	972,711	27	28,221	£0.00	£0.00	£60,810,083.00	£9,093,952.00
Statkraft Markets GmbH	401	0	0	0	£18,935.22	£0.00	£0.00	£0.00
Switch Business Gas and Power Ltd	196	0	0	0	£9,255.12	£0.00	£0.00	£0.00
Symbio Energy Limited	7	0	0	0	£0.00	£330.80	£0.00	£0.00
The Renewable Energy Company Limited	15,038	15,038	0	0	£0.00	£0.00	£2,845,822.00	£425,583.00
Eddington Energy Supply Limited	17,136	0	0	0	£0.00	£814,260.75	£0.00	£0.00
Together Energy Supply Limited	263	0	0	0	£0.00	£12,497.12	£0.00	£0.00
Tonik Energy Limited	6,974	6,974	0	0	£0.00	£0.00	£933,034.00	£139,531.00
Total Gas & Power Limited	307,716	307,716	0	60,006	£0.00	£0.00	£32,579,423.00	£4,872,147.00
TOTO Energy Ltd	5,008	0	0	0	£0.00	£0.00	£0.00	£0.00
Tru Energy Limited	5	0	0	0	£0.00	£236.52	£0.00	£0.00
United Gas & Power Ltd	818	0	0	0	£38,625.96	£0.00	£0.00	£0.00
Usio Energy	385	0	0	0	£0.00	£0.00	£0.00	£0.00
Utilita Energy Limited	105,674	105,674	0	0	£0.00	£0.00	£7,205,458.00	£1,077,552.00
Utility Point Limited	8,446	0	0	0	£398,820.12	£0.00	£0.00	£0.00
Vattenfall Energy Trading GmbH	64	64	0	0	£0.00	£0.00	£890.00	£132.00
Daisy Energy Supply Limited	1,237	0	0	0	£58,411.14	£0.00	£0.00	£0.00
Zebra Power Limited	1,047	0	0	0	£49,439.34	£0.00	£0.00	£0.00
Totals	11,611,524	10,574,337	22,290	539,129	£35,904,340.86	£3,697,487.25	£724,085,032.00	£108,284,526.00

Table A2.4: Compliance by licensee⁸⁹ with the RO (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 redistributed	Late buy-out redistributed
3T Power Limited	10,280	9,715	0	2,570	£26,679.30	£0.00	£66,099.00	£9,883.00
Budget Energy Limited	45,482	24,693	0	855	£981,656.58	£0.00	£168,011.00	£25,124.00
Click Energy	18,905	0	0	0	£0.00	£901,272.52	£0.00	£0.00
Electric Ireland	221,473	221,473	0	0	£0.00	£0.00	£1,506,906.00	£225,352.00
Go Power	207,579	40,971	0	181	£7,867,229.76	£0.00	£278,766.00	£41,687.00
Naturgy Limited	3,168	0	0	0	£149,592.96	£0.00	£0.00	£0.00
Power NI	444,092	444,092	0	45,246	£0.00	£0.00	£3,021,611.00	£451,871.00
SSE Airtricity Energy Supply Limited	274,363	274,363	0	748	£0.00	£0.00	£1,866,771.00	£279,168.00
Energia	207,986	207,986	0	261	£0.00	£0.00	£1,415,140.00	£211,628.00
Totals	1,433,328	1,223,293	0	49,861	£9,025,158.60	£901,272.52	£8,323,304.00	£1,244,713.00

Table A2.5: Suppliers with an obligation who did not meet the 1 June 2019 deadline to submit estimated supply volumes

Supplier Group
Affect Energy Limited
Corona Energy Retail 4 Ltd
Octopus Energy Limited
URE Energy Limited

Table A2.6: Suppliers with an obligation who did not meet the 1 July 2019 deadline to submit final supply volumes

Supplier Group
Logicor Energy Limited
SO Energy Trading Limited

Notes: Eleven suppliers (listed below) with an obligation in 2018-19 did not submit any supply data (ie: estimated and final supply data). This is because all ceased trading ahead of any 2018-19 legislative deadlines passing for RO Compliance.

Supplier Groups	
Iresa	Extra Energy Supply Limited
Gen4U	Brilliant Energy
Usio Energy	OneSelect
Spark Energy Supply Limited	Electraphase
Economy Energy Trading Limited	Snowdrop Energy Supply Limited
Our Power Energy Supply Limited	

⁸⁹ The name of each Licensee in Tables A2.2 to A2.4 refers to a Licence group that is owned by its parent company (Supplier Group). For a complete list of supplier groups and their licences, please contact: REcompliance@ofgem.gov.uk

Appendix 3: Accredited stations

Table A3.1 – Accreditation and capacity of renewable technologies across the UK at the end of 2018-19

Generation Technology	England		Scotland		Wales		Northern Ireland		Total	
	Quantity	Capacity (MW)	Quantity	Capacity (MW)	Quantity	Capacity (MW)	Quantity	Capacity (MW)	Quantity	Capacity (MW)
Fuelled	390	7,687	85	268	51	117	118	583	644	8,655
Hydro	47	22	147	615	31	77	85	7	310	721
Landfill gas	380	749	39	84	17	26	8	11	444	871
Offshore wind	28	5,474	7	363	3	720	0	0	38	6,557
Onshore wind	238	2,595	251	7,396	58	977	1,274	1,242	1,821	12,210
Sewage gas	153	191	6	7	16	12	0	0	175	210
Solar PV	788	5,141	15	41	80	487	22,196	275	23,079	5,944
Tidal stream	0	0	7	12	1	0	1	1	9	14
Wave Power	0	0	5	3	0	0	0	0	5	3
Total	2,024	21,859	562	8,789	257	2,416	23,682	2,120	26,525	35,185

Table A3.2 – Number of accreditations in 2018-19 by country and technology (excluding micro NIRO)

Countries	Fuelled	Offshore wind	Onshore wind	Total
England	2	0	0	2
Scotland	0	2	1	3
Wales	1	0	0	1
Northern Ireland	0	0	5	5
Total	3	2	6	11

Table A3.3 – Number of generating stations with accreditations effective from RO years 2015-16 to 2018-19

Month-Year	Monthly totals (ex. Micro NIRO)	Cumulative totals (ex. Micro NIRO)
Apr-15	21	2,366
May-15	9	2,375
Jun-15	13	2,388
Jul-15	15	2,403
Aug-15	18	2,421
Sep-15	12	2,433
Oct-15	29	2,462
Nov-15	22	2,484
Dec-15	46	2,530
Jan-16	26	2,556
Feb-16	33	2,589
Mar-16	210	2,799
Apr-16	19	2,818
May-16	21	2,839
Jun-16	42	2,881
Jul-16	25	2,906
Aug-16	25	2,931
Sep-16	39	2,970
Oct-16	39	3,009
Nov-16	42	3,051
Dec-16	49	3,100
Jan-17	44	3,144
Feb-17	57	3,201
Mar-17	456	3,657
Apr-17	12	3,669
May-17	13	3,682
Jun-17	29	3,711
Jul-17	15	3,726
Aug-17	8	3,734
Sep-17	15	3,749
Oct-17	20	3,769
Nov-17	11	3,780
Dec-17	16	3,796
Jan-18	13	3,809
Feb-18	15	3,824
Mar-18	42	3,866
Apr-18	1	3,867
May-18	1	3,868
Jun-18	2	3,870
Jul-18	2	3,872
Aug-18	3	3,875
Sep-18	2	3,877

N.B. there have been no non Micro NIRO accreditations effective since September 2018.

Month-Year	Monthly totals (Micro NIRO)	Cumulative totals (Micro NIRO)
Apr-15	281	11,959
May-15	294	12,253
Jun-15	904	13,157
Jul-15	574	13,731
Aug-15	568	14,299
Sep-15	2,487	16,786
Oct-15	116	16,902
Nov-15	333	17,235
Dec-15	214	17,449
Jan-16	236	17,685
Feb-16	424	18,109
Mar-16	257	18,366
Apr-16	424	18,790
May-16	477	19,267
Jun-16	294	19,561
Jul-16	438	19,999
Aug-16	442	20,441
Sep-16	1,418	21,859
Oct-16	14	21,873
Nov-16	20	21,893
Dec-16	31	21,924
Jan-17	56	21,980
Feb-17	60	22,040
Mar-17	607	22,647
Apr-17	0	22,647
May-17	0	22,647
Jun-17	0	22,647
Jul-17	0	22,647
Aug-17	0	22,647
Sep-17	0	22,647
Oct-17	0	22,647
Nov-17	0	22,647
Dec-17	0	22,647
Jan-18	0	22,647
Feb-18	0	22,647
Mar-18	1	22,648

N.B. there have been no Micro NIRO accreditations effective since March 2018.

Table A3.4 – Capacity of generators accredited by obligation year and country since 2014-15 (MW)

Technology	2014-15	2015-16	2016-17	2017-18	2018-19
England	3,024	1,517	1,137	1,492	42
Scotland	138	460	1,466	598	158
Wales	241	135	453	96	36
Northern Ireland	158	98	447	219	83
Total	3,561	2,210	3,502	2,406	319

Table A3.5 – Total capacity accredited by generation technology and obligation period since 2014-15 (MW)

Technology	2014-15	2015-16	2016-17	2017-18	2018-19
Fuelled	243	202	314	128	78
Landfill gas	4	0	1	0	0
Offshore wind	422	50	0	1,382	144
Onshore wind	390	727	2,437	838	97
Sewage gas	13	2	18	0	0
Solar PV	2,488	1,229	719	57	0
Other	1	1	13	1	0
Total	3,561	2,210	3,502	2,406	319

Table A3.6 – Total capacity accredited under the RO by generation technology (MW)

Technology	Total capacity
Onshore wind	12,210
Fuelled	8,655
Offshore wind	6,557
Solar PV	5,944
Landfill gas	871
Hydro	721
Sewage gas	210
Tidal stream	14
Wave Power	3
Technology	35,185

Table A3.7 – Capacity amendments in 2018-19 (MW)

Technology	Capacity change (MW)	No of capacity increases	No of capacity decreases	Total No of capacity changes
Fuelled	2.7	11	0	11
Sewage gas	1.8	4	0	4
Offshore wind	1.5	1	0	1
Hydro	-0.6	1	2	3
Solar PV	-1.5	15	15	30
Landfill gas	-6.1	2	14	16
Onshore wind	-7.2	2	8	10

Table A3.8 - Number of off grid and zero export stations by country and generation technology accredited to the end of October 2019

Country	OE/ZE	Fuelled	Onshore wind	Solar PV	Micro hydro
England	Off Grid	41	0	0	0
	Zero export	12	0	0	0
Northern Ireland	Off Grid	16	31	0	1
	Zero export	9	9	11	0
Scotland	Off Grid	9	0	0	0
	Zero export	3	0	0	0
Wales	Off Grid	1	0	0	0

Table A3.9 - Capacity of off grid and zero export generating stations by country and generation technology accredited to the end of October 2019 (MW)

Country	OE/ZE	Fuelled	Onshore wind	Solar PV	Micro hydro
England	Off Grid	79.9	0	0	0
	Zero export	5.4	0	0	0
Northern Ireland	Off Grid	6.4	6.9	0	0.1
	Zero export	8.8	1.7	9.0	0
Scotland	Off Grid	22.4	0	0	0
	Zero export	17.0	0	0	0
Wales	Off Grid	3.4	0	0	0

Appendix 4: Glossary of terms

A

ACT - Advanced Conversion Technology

AD - Anaerobic digestion

Authority - Gas and Electricity Markets Authority

B

BEIS - Department for Business, Energy and Industrial Strategy

C

CHP - Combined Heat and Power

CfD - Contracts for Difference

D

DNC - Declared Net Capacity

DNO - Distribution Network Operator

E

EU - European Union

F

FIT - Feed-in-Tariffs

FMS - Fuel Measurement and Sampling

G

GB - Great Britain

GHG - Greenhouse Gas

GW - Gigawatt

GWh - Gigawatt hour

I

ISAE - International Standard on Assurance Engagements

ITAR - Independent Technical Assurance Report

K

kW - Kilowatt

M

MW - Megawatt

MWh - Megawatt hour

N

NFFO - Non-Fossil Fuel Obligation

NFPA - Non-Fossil Fuel Purchasing Agency

NI - Northern Ireland

NIAUR - Northern Ireland Authority for Utility Regulation

NIE - Northern Ireland Electricity Networks

NIRO - Northern Ireland Renewables Obligation

NIROC - Northern Ireland Renewables Obligation Certificate

O

Ofgem - Office of Gas and Electricity Markets

OG - Off Grid

P

PES - Public Electricity Suppliers

PV - Photovoltaic

R

Register - Renewables and CHP Register

RO - Renewables Obligation

ROC - Renewables Obligation Certificate

ROO - Renewables Obligation Order

ROS - Renewables Obligation Scotland

RPI - Retail Price Index

S

SEMO - Single Electricity Market Operator

SRO - Scottish Renewables Obligation

SROC - Scottish Renewables Obligation Certificates

T

TIC - Total Installed Capacity

TWh - Terawatt hour

U

UK - United Kingdom

Z

ZE - Zero Export