RENEWABLE ENERGY ASSURANCE LIMITED

Compost / Biofertiliser Certification Schemes' Annual Report 2018

Compost Certification Scheme
Biofertiliser Certification Scheme
Compostable Materials Certification Scheme
Green Gas Certification Scheme

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Introduction

*Please note, this report was first published in September 2019 and amended in October 2019.

Renewable Energy Assurance Ltd (REAL) has been working with a range of partners since 2010 to deliver certification schemes in the areas of organics recycling, biogas and bioenergy. REAL can ensure that sector participants are complying with the standards relevant to the products and services they produce. The schemes administered by REAL are:

- Compost Certification Scheme
- Biofertiliser Certification Scheme
- Compostable Materials Certification Scheme
- Green Gas Certification Scheme

This report aims to share insights from data collected by the Compost Certification Scheme (CCS) and the Biofertiliser Certification Scheme (BCS) and report on the work carried out by REAL to manage and develop these schemes. REAL works to ensure the schemes are robust and work for all relevant stakeholders, and in so doing, protecting consumers of independently certified compost and digestate, and promoting the organics recycling sector.

Data was used from the beginning of January 2019 to reflect the status of the schemes during and at the end of the year. The CCS and BCS sections provide an overview of the certified composting and anaerobic digestion processes and a summary of the operational data available to REAL.

This report also presents information on the other certification schemes owned and administered by REAL: the Compostable Materials Certification Scheme (CMCS) and the Green Gas Certification Scheme (GGCS). The Compostable Materials Certification Scheme is run in partnership with Din Certco, a certification body in Germany. Through this partnership, REAL can offer a suite of schemes for the certification of compostable and bio-based products, and products made from recycled materials. The CMCS is currently under development and will be re-launched soon.

The Green Gas Certification Scheme tracks biomethane through the supply chain to provide certainty for those that buy it. The GGCS assigns guarantees of origin to each unit of biomethane injected and each unit taken out and sold to households, institutions or corporate customers.

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A word from our Chair

Last year I noted an increased awareness amongst both governments and the general public of the need to conserve resources and slow down the rate of environmental degradation, and highlighted the key role played by recycling within these processes. Since last year, there has been further evidence of increased pressure amongst the general public to make certain that strategies are implemented to ensure we slow down the rate of environmental damage.

Whilst much of the recent focus in the public debate has been on reducing the use of materials that are difficult to recycle- in particular plastics, there has been mounting pressure to increase the recycling rate of materials for which there are established recycling pathways. In the United Kingdom, there have been commitments to increase the recycling rates of organic materials, such as green waste and food waste. Recycling is only effective if the end products of the process are of good quality- to enable their efficient use. These products can then be used by consumers with confidence.

The Compost and Biofertiliser Certification Schemes ensure the production of quality products from recycled organic material. The Compost Certification Scheme is well established and ensures that the certified composts produced are fit for purpose and of good quality. Whilst BCS was established more recently, the number of members on the scheme continues to grow. With recent policy statements regarding the need to increase food waste recycling, both commercially and by households, it seems likely there will be an increased rate in biofertiliser production in the coming years.

REAL's Research Hub, funded by Scheme participants, has been set up to carry out research projects that will support the development and growth of the compost and anaerobic digestion industries, ensuring the continuation of high industry standards by CCS/BCS Scheme Operators.

Professor Stephen Nortcliff (Chair of the CCS and BCS Technical Advisory Committee)

A word from our Chief Executive

I am delighted to welcome this 2018 Annual Report. It summarises another year of achievement for both the Compost and the Biofertiliser Certification Schemes. The scheme managers have worked very hard over the year to ensure that both schemes remain robust and fit-for-purpose. As part of this they have continued to audit the laboratories appointed to the scheme. They have worked very closely with the certification bodies to implement the revised PAS 100 for compost and have started to review PAS 110 for digestate. Further improvements to the scheme will be implemented in 2019.

Virginia Graham

Compost Certification Scheme

This scheme provides assurance to consumers, farmers, food producers and retailers that *quality compost* derived from source-segregated biowaste or source-segregated biodegradable materials is safe for human, animal and plant health. Compost improves soil structure and health by increasing organic matter and the soils ability to retain moisture and nutrients. Certified Quality Compost signifies that it was produced using an effective quality management system, providing assurance that the materials have a consistent quality, are safe and reliable to use, and are fit for purpose.

Certified processes

By the end of 2018, the largest portion of certified operators fell in the category of operators processing between 20,001 and 50,000 tonnes of organic waste per annum for compost (31.7% of the total). The category with the smallest number of producers was those processing between 3000 and 6000 tonnes of organic waste per annum (6.7% of the total).

Figure 1 presents the number of processes certified under the CCS in the UK, the change in total input tonnage and the change in compost production over the course of 2018. Throughout the year, the number of certified processes fluctuated. The first half of the year saw a slight decrease in the number of processes, followed by a steady rise and fall for the rest of the year. The input tonnage processed increased throughout the year and the compost produced remained almost constant throughout the year, with an average of 1.86 million tonnes of compost production per annum.

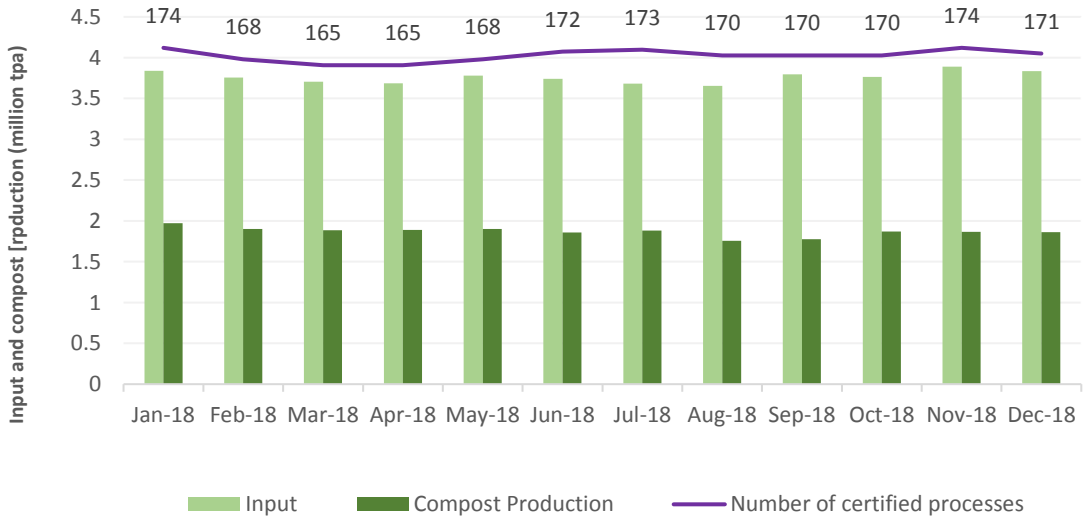


Figure 1 Total number of certified processes, input tonnage, and compost production in the UK in 2018.

Figure 2 presents the number of certified processes in each country of the UK, as a percentage of the total. By the end of 2018, there were 137 certified processes in England, 23 in Scotland, 12 in Wales, and 7 in Northern Ireland.

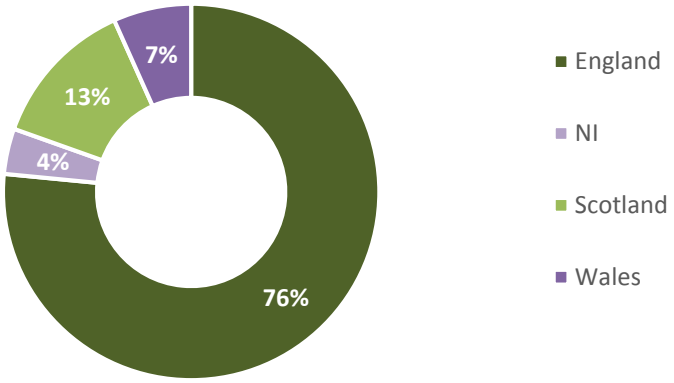


Figure 2 Percentage of certified processes in the UK

Process types

Figure 3 presents the proportion of different types of composting processes in the UK as percentages. 123 out of 179 composting processes were operated as open air, turned windrows. A small number of sites were operated as in-vessel composting (12) or as aerated static piles (6) with no subsequent processing step. Only a fraction of processes used an Eco Pod system (3 out of 179). There were 17 processes that operated as a combination of in-vessel composting with subsequent aerated static piling and 18 as in-vessel composting with subsequent open air turned windrow processing.

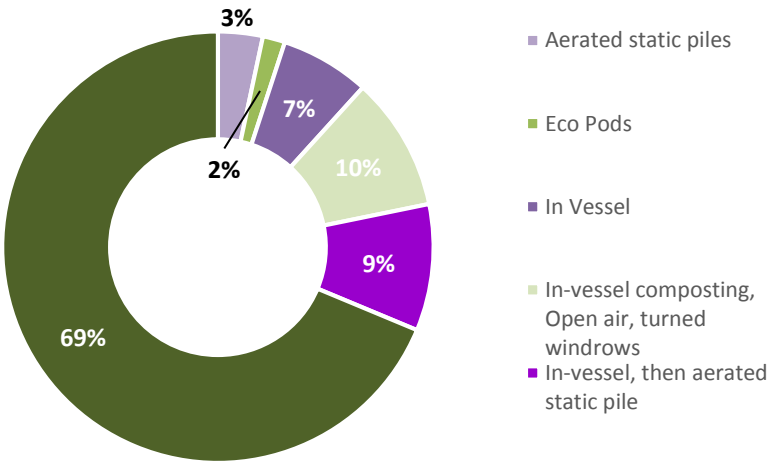


Figure **3** Percentage of certified process types in the UK

Figure 4 shows the percentage of different process types in each country of the UK. In each country, most certified sites employed open air, turned windrow processing. Since 2017, in vessel composting then open air turned windrows and in vessel composting has been employed by Wales.

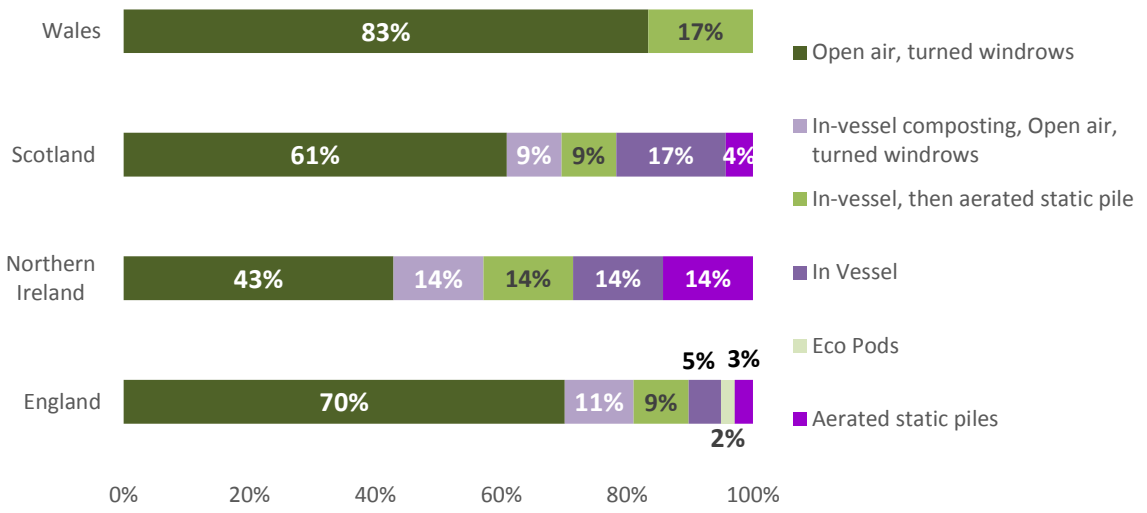


Figure 4 Percentage of certified process types per country

Input and output

Compost feedstock varies between sites but is generally comprised of green waste (grass cuttings, flowers, prunings, hedge clippings, and leaves). Permitted industrial and animal by-product (ABP) wastes like food waste are typically processed at in-vessel composting facilities. Feedstock types are categorised as green waste only or green waste mixed with ABP materials by CCS.

Figure 5 shows the total number of processes and feedstock types per country; the majority of sites were processing green waste only. At the end of 2018, 82% of certified sites in England, 70% in Scotland , 92% in Wales and 71% in Northern Ireland were processing green waste only.

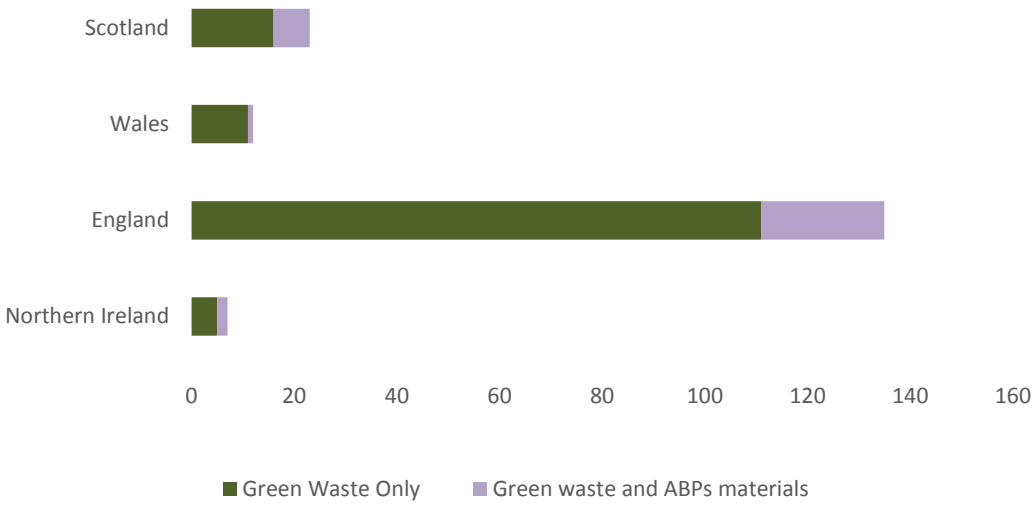


Figure 5 Number of certified processes and feedstock per country

Figure 6 shows the input tonnage (in millions of tonnes per annum) of materials that were being processed by certified composting sites in each country on an annual basis by the end of 2018. Approximately 2,243,000 tonnes of green waste only were being processed by sites in England, 138,000 tonnes in Scotland, 137,000 tonnes in Wales, and 111,000 tonnes in Northern Ireland. Approximately 870,000 tonnes of green waste and ABPs materials was being processed annually by sites in England, 173,000 tonnes in Scotland, 13,000 tonnes in Wales, and 122,000 in Northern Ireland.

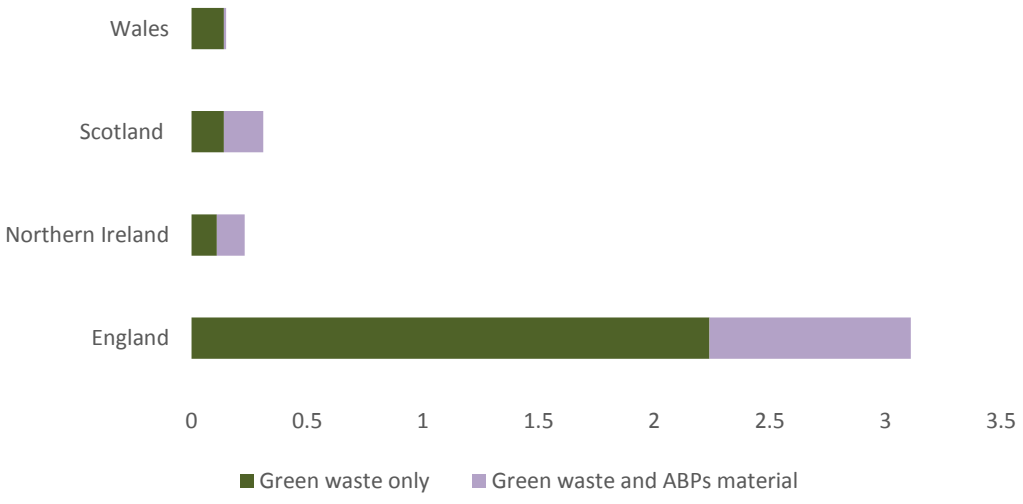


Figure 6 Annual input tonnage and input type per country

Figure 7 shows the quantity of compost being produced by certified sites in each country on an annual basis by the end of 2018. Approximately 1.5 million tonnes of *quality compost* were being produced annually by sites in England, 70,000 tonnes in Wales, 150,000 tonnes in Scotland and 118,000 tonnes in Northern Ireland.

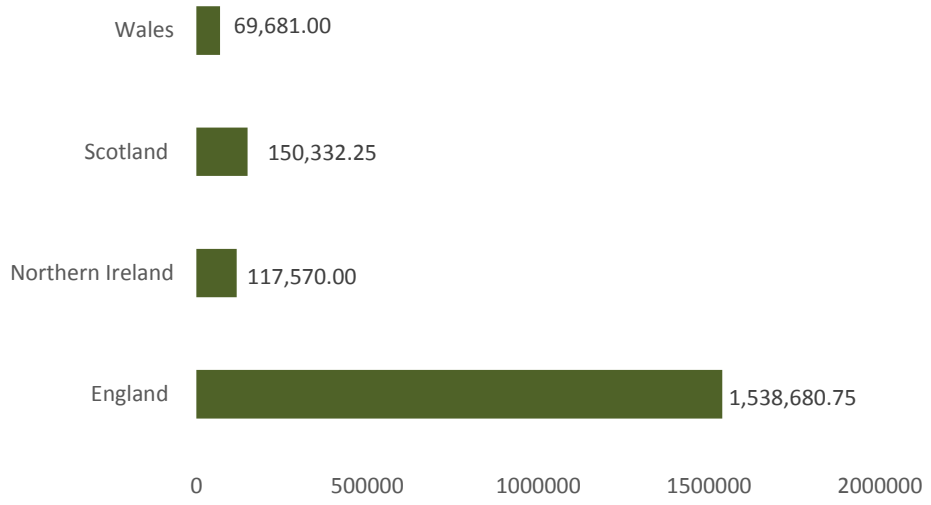


Figure 7 Annual tonnage of quality compost produced per country

Certified compost is categorised into product types; 'Soil conditioner', 'Manufactured topsoil ingredient', 'Mulch', 'Growing medium ingredient' and 'Landscape blend'. By the end of 2018, 94% of principal grade compost was recorded as soil conditioner, 3% to mulch, 2% to growing medium ingredient and 1% to landscape blend and manufactured topsoil ingredient.

Markets

The end market sectors for all certified compost processes were recorded throughout 2018. Figure 8 demonstrates that 81% of certified processes were producing quality compost supplied to the agriculture and soil-grown horticulture markets, 7% domestic or professional horticulture markets, and 12% land restoration. Out of 179 total certified composting processes, 94 were supplying compost to a single market category, 49 to two markets and 33 to three markets.

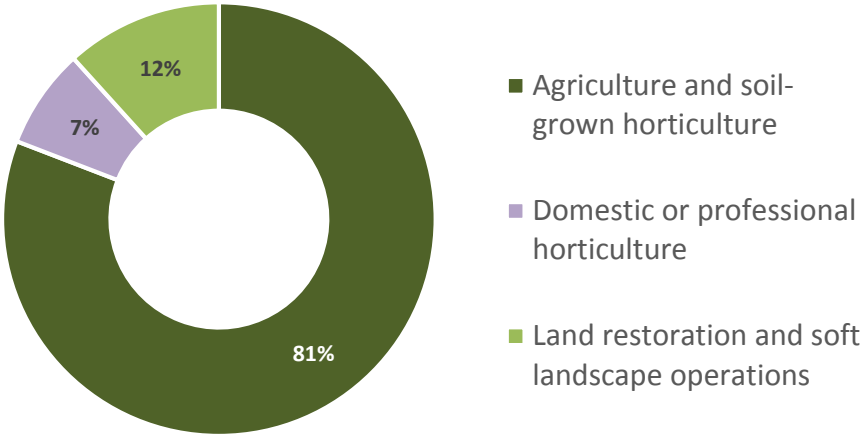


Figure 8 End markets of a portion of certified compost producers

Figure 9 shows the number, in percentage, of different market sectors per country that quality compost is being distributed to. If a country is supplying to a single market, this will be either domestic or professional horticulture (domestic), land restoration and soft landscape operations (land), or agriculture and soil-grown horticulture (agriculture). In cases where compost was being supplied to two markets, this was a combination of land, domestic or agriculture.

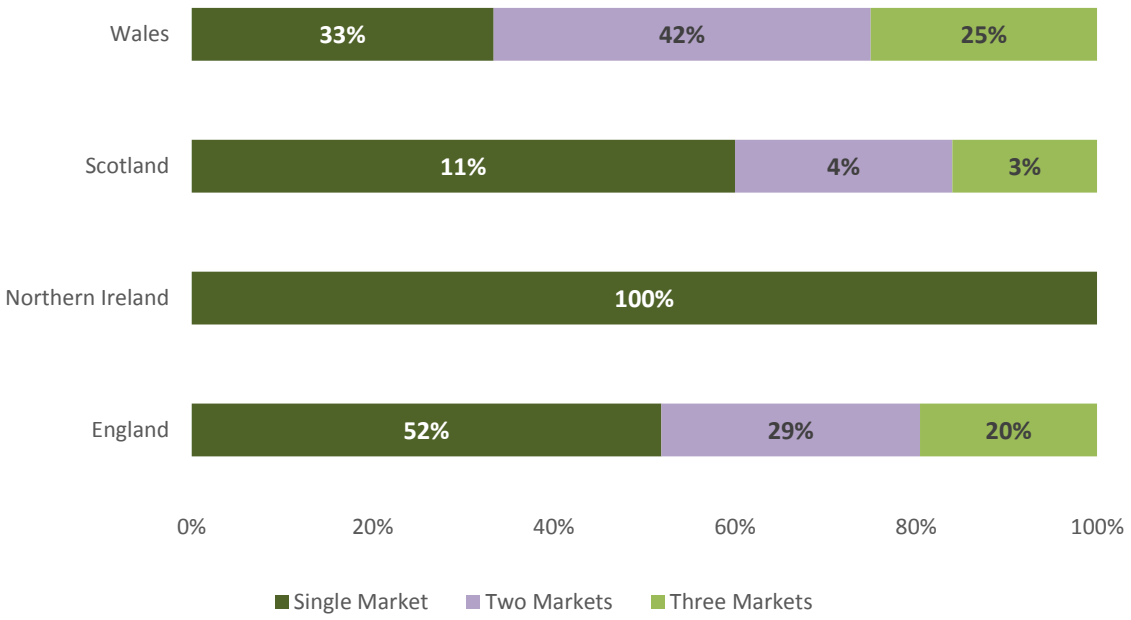


Figure 9 End markets of compost per country

Compost produced by each process type was analysed according to the end market that it was supplied to. All process types supplied compost to agriculture and soil grown horticulture, with most of the compost from each process supplied to this market (excluding in vessel composting then open air turned windrows, where only 18% of compost was supplied to agriculture and soil grown horticulture). Eco pods and in vessel composting processes supplied to the fewest range of markets. Aerated static piles and open air turned windrows were the only process types that supplied compost to all three market sectors (agriculture, land and domestic). Figure 10 shows this information as a graph, where 'Agriculture and soil- grown horticulture' is referred to as 'Agriculture', 'Domestic or professional grown horticulture' referred to as 'Domestic' and Land restoration and soft landscape operations' as 'Land'.

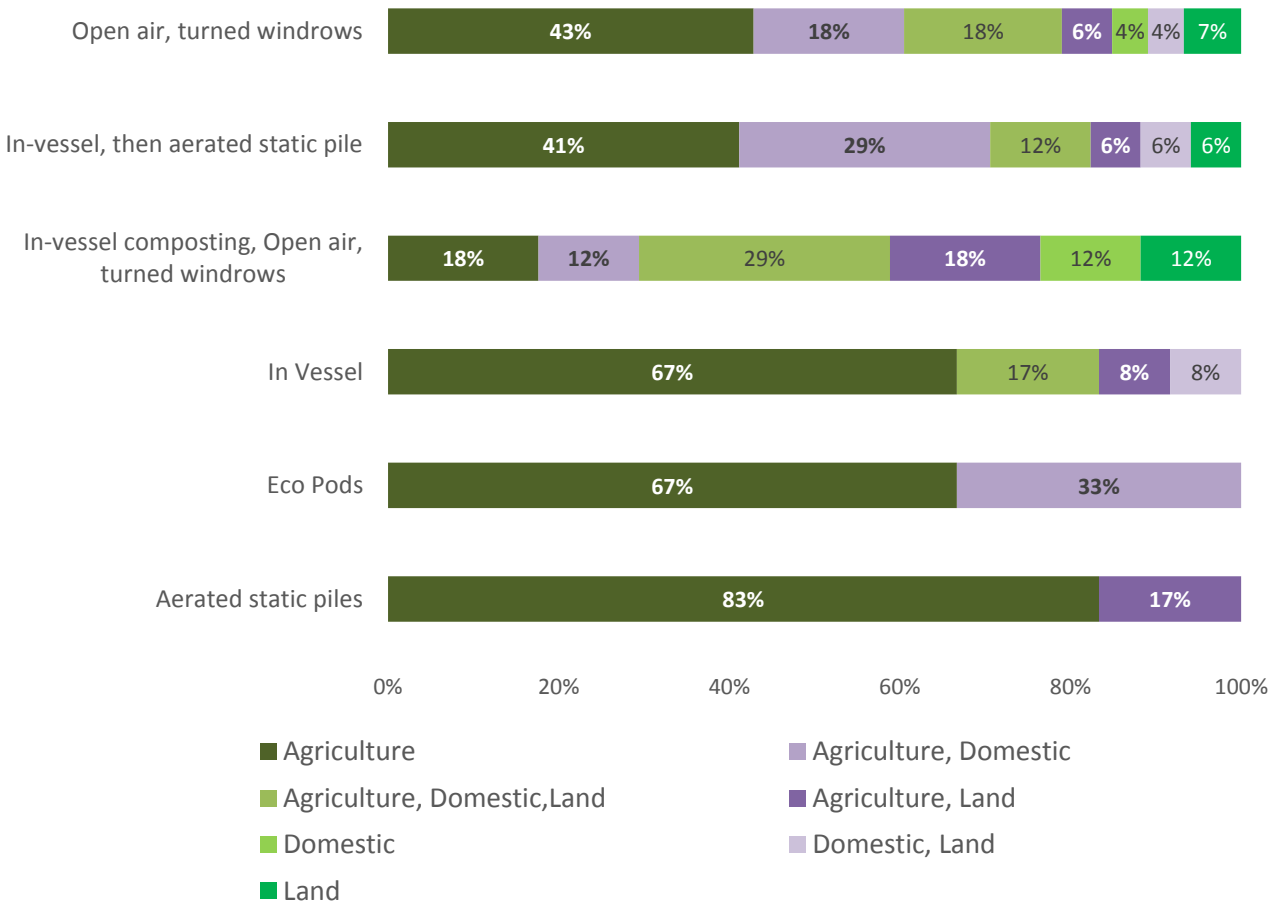


Figure 10 End markets per process type

Biofertiliser Certification Scheme

This scheme provides assurance to consumers, farmers, food producers and retailers that *biofertiliser* produced from anaerobic digestion is safe for human, animal and plant health. Biofertiliser is the name adopted for the quality digestate certified under the Biofertiliser Certification Scheme. Digestate is a nutrient-rich organic fertiliser that can be spread to land to confer agronomic benefit to soil and improve its physical quality. Certified digestate signifies that it was produced using an effective quality management system, which provides assurance that the materials are of a consistent high quality and are safe and reliable to use.

Certified processes

There were 80 plants certified under the BCS by the end of 2018, with a total registered annual throughput of approximately 4.3 million tonnes. The largest portion of certified producers fell in the category of operators processing between 25,001 and 50,000 tonnes of organic waste per annum (33% of the total). The category with the least number of producers was comprised of those processing between 0 and 6000 tonnes of organic waste per annum (3% of the total).

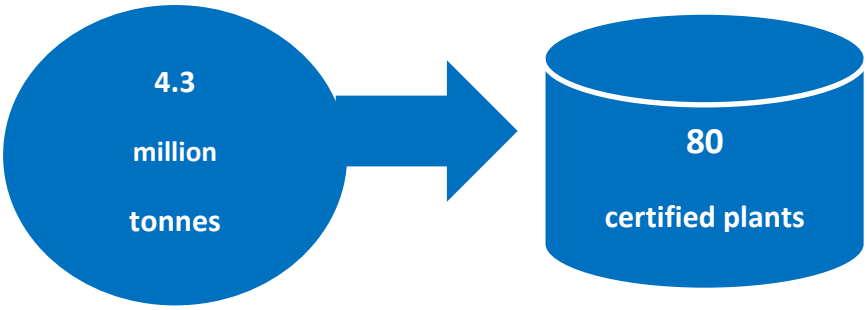


Figure 11 shows that most certified plants were in England (71%). Of the 80 certified plants, 57 were in England, 11 were in Scotland, eight in Wales and four in Northern Ireland.

Figure 11 Percentage of certified plants per country

Feedstock and output

Feedstock materials processed by certified plants vary. Data recorded in the BCS database shows that all AD facilities accept input from agriculture, horticulture, food preparation and processing or municipal, commercial and industrial sources. A combination of these input materials is also commonly used.

Figure 12 shows the total annual feedstock throughput, separated per country. Approximately 3.1 million tonnes of organic waste were being processed annually by certified plants in England, 186,000 tonnes in Wales, 860,000 tonnes in Scotland and 145,000 tonnes in Northern Ireland.

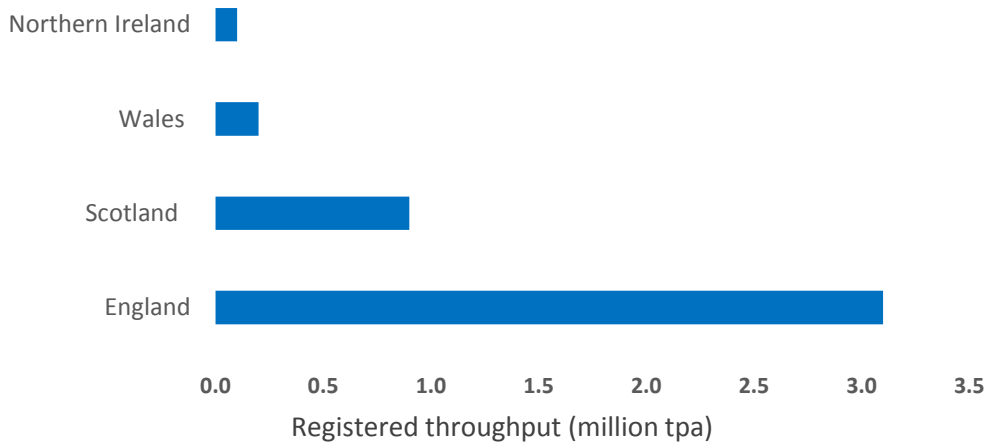


Figure12 Registered annual throughput per country

Figure 13 shows the certified digestate outputs produced from BCS plants, in percentages. Many facilities produced certified whole digestate and only 13 plants produced more than one type of output. In total, 52 plants were producing certified whole digestate, 14 producing certified separated liquor, and 1 producing certified separated fibre.

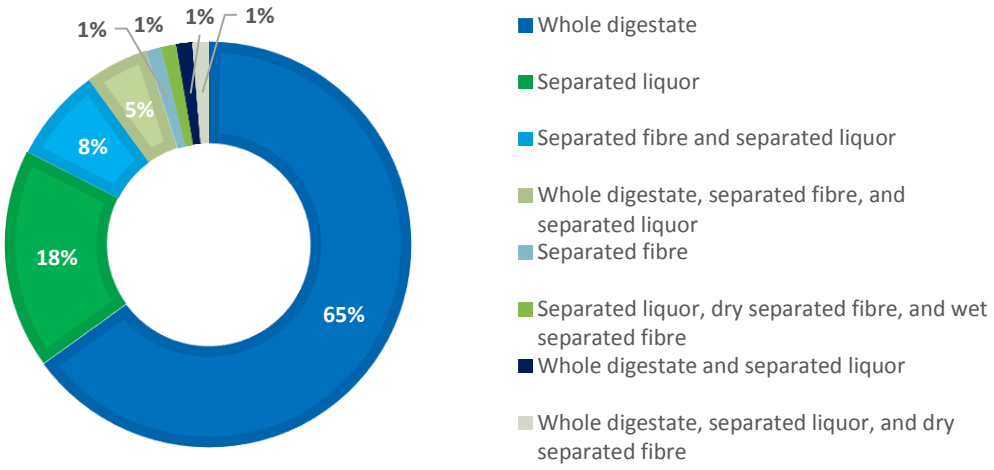


Figure 13 Percentage of certified plants producing different certified digestates

Figure 14 shows the percentage of plants producing various types of certified digestate in each country of the UK. Most plants per country were producing certified whole digestate only, except for Northern Ireland, where digestate type was split evenly between four markets. Most certified plants in Wales were producing whole digestate only with 13% producing certified separated liquor and whole digestate together. Many certified plants in Scotland were producing whole digestate only with 18% producing certified separated liquor and 9% producing separated fibre and separated liquor together. Certified plants in England were producing the most varied combination of certified digestate outputs with 5% producing all three certified products together (whole digestate, separated liquor, and separated fibre).

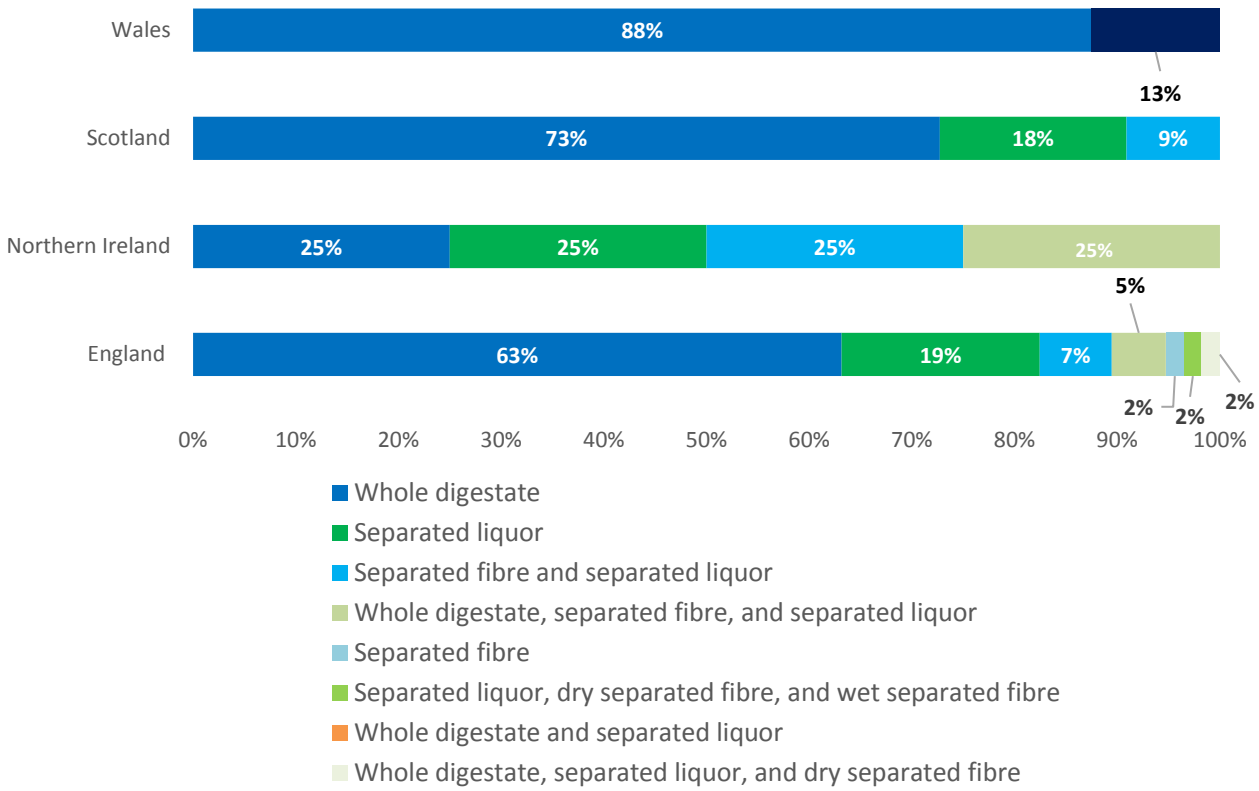


Figure 14 Percentage of certified plants producing certified digestates per country

Scheme developments

REAL is continuously working on the development of the schemes to ensure that they are robust and fit-for-purpose. The success of the schemes benefits all stakeholders, including scheme participants and consumers. We developed several aspects of CCS and BCS in 2018, which are summarised below.

PAS 100 Revision

In 2018, the PAS 100 revision process, of which REAL was sponsor, was completed. REAL held workshops and meetings in 2017 with industry stakeholders, including UKAS, to allow contribution to the revision of the standard. The final meeting was held in March 2018 and the new version of the standard was finalised with BSI, following a final review by the Steering Group. BSI PAS 100:2018 was published in September 2018, with CCS operators being notified of this publication by email. Changes to operation, to meet the new requirements within the standard, were implemented by compost producers through a transitional period of 3 months following the revision.

Compostables Survey

REAL conducted a survey in 2018 in order to gather views from scheme participants about compostable packaging and issues surrounding identification and acceptance of it as feedstock. The results of this survey influenced an additional requirement to the CCS Scheme Rules, whereby operators must inform their certification body if they accept certified compostable packaging and/or certified compostable liners as feedstock and if they do, operators must specify if this information can be shared. The survey has also informed other work carried out by REAL.

Cost benefit analysis and cost comparison analysis

REAL carried out two projects in 2018; a cost benefit analysis and a cost comparison analysis. Both projects compared the difference in average costs between being certified under BCS or CCS for end-of-waste status and the cost of dispatching digestate and compost under waste regulations (product vs waste). Various organisations provided information to REAL and independent consultants confirmed the outcomes of both sets of findings.

The second project (cost comparison analysis) was undertaken following the introduction of a new land spreading charging regime by the Environment Agency. The results showed that in cases where operators processed between 20,001 and 50,000 tonnes of feedstock annually, they could incur a cost of £5000 for renewal of *quality compost* status and £35,000 for spreading of waste compost. The results of both projects were used to calculate a fee structure for the Research Hub.

Laboratory audits and T&C's revision

The CCS Laboratories went through their 4th round of annual audits and the BCS Laboratories went through their 2nd round of annual audits, with auditor feedback showing high standards of competency and performance from the labs. This feedback provides REAL with confidence in the laboratories' performance and the reliability of PAS 100/PAS 110 test results. Additionally, REAL carried out a review of the laboratory T&C's with the independent auditor. The outcome of the review resulted in a revision of the document, with comments also from the laboratories.

Technical guidance updates

The CCS Technical Guidance document was updated to include the Scheme's interpretation of several PAS 100 requirements. An additional section was added on testing during process validation and revalidation, which was produced following consultation with the certification bodies. The BCS Technical Guidance was also updated, to include a position on the acceptance of 'food waste soup' as an input material. The guidance states that operators should not accept food waste soup, if they are not provided with a full list of ingredients, as the waste inputs must be checked against the ADQP and a robust hazard analysis needs to be carried out. If food waste is accepted, operators should ensure that the tankers are washed and cleaned.

Annual Report 2017

REAL published the first combined Annual Report of the Compost and Biofertiliser Certification Schemes. The report provided an overview of both schemes in 2017 using data representing the status of the schemes by the end of 2017. The report also included information regarding the Compostable Packaging Certification Scheme and the Green Gas Certification Scheme, both owned and administered by REAL.

Scheme Rules consultation and revision

The revision processes of the BCS and CCS scheme rules were initiated following technical feedback from UKAS, the launch of the Research Hub, and to capture relevant scheme developments. Early in the year, REAL began the review of the BCS and CCS rules by revising the base document. Following this, a consultation period was undertaken to seek comments from the Technical Advisory Committee and Operators on the proposed changes to the rules. REAL received, and subsequently addressed a large number of comments on the draft during this period. The new versions of the rules were published on the relevant websites at the end of 2018 and came into effect at the beginning of 2019.

Plant response test investigation

REAL carried out an investigation into complaints regarding the Plant Response Test (PRT) , which is carried out by laboratories under the CCS. Several Operators raised concerns in 2017 regarding PRT failures. It was noted that there were an increasing number of failures during winter months. However, analysis showed that there was a peak in failures during the autumn of 2016 at one laboratory, but there was no increase in failures in 2017 and 2018. The results of the investigation could not lead REAL to make sufficient conclusions about the reliability of the test, or reasons for the failures. In light of this, the CCS database was further developed to allow REAL to monitor trends in results in the future. Furthermore, the Research Hub will be able to act as a mechanism for funding research that could be used to update the scheme documents, including test methods, for compost certification and the composting industry.

Summer and winter newsletters

In 2018, both a summer and winter newsletter were published to update industry stakeholders and CCS/BCS participants on the latest news about scheme developments and with industry related news and events taking place. Topics of interest included the Clean Air Strategy, the 25 Year Environment Plan, the EA's Review of Charges and the Resources & Waste Strategy.

Research Hub

In 2018, the Research Hub ('The Hub') was established and launched. The Hub is a tool to source funding from the compost and anaerobic digestion industries to develop the technical and regulatory aspects of certified compost digestate. The benefits of the Hub will include an increased amount of evidence available for the industry, which will help develop and ensure success within the industry. The Hub continued to develop throughout 2018; the fee structures were finalised, various aspects of governance and decision-making were confirmed and the Research Panel was appointed. The Panel oversees the running of the Hub by selecting relevant projects to be carried out, according to industry interest, and determine the ways in which the results will be used. The first meeting of the Governance Committee for the Hub took place to discuss funding and the governance paper.

Industry engagement

Throughout 2018, REAL engaged with industry, DEFRA and other stakeholders through various meetings. The biannual roundtable meeting of REAL/Certification Bodies (including inspectors) was held in 2018. The roundtable meeting allowed REAL to seek the Certification Bodies' initial views on changes to the Schemes Rules and discuss technical requirements within the scheme.

Compostable Materials Certification Scheme

The Compostable Materials Certification Scheme provides assurance to consumers and the supply chain that compostable products have been independently certified according to international standards and can harmlessly be decomposed through either industrial or home composting processes. This scheme operates in partnership with German certification body Din Certco of Berlin and through this partnership we can also certify; bio-based products, compostable additives, products made from recycled materials, and soon biodegradable in soil products.

In 2018, REAL began engaging further with industry stakeholders, the UK Plastics Pact, and partner certification body DIN Certco, as significant opportunities for increased use of compostable materials arose. REAL also contributed to meetings of a Working Group on labelling and marking compostables and met with various leading industry organisations to explore how the Scheme can contribute to tackling issues facing the industry and ensure long-term sustainable growth.

This scheme is currently under development to bring its structure in line with BCS and CCS. To support this, REAL has developed two certification marks (one for industrial and one for home composting) to streamline messaging to consumers and build value in this brand for scheme participants.

Green Gas Certification Scheme

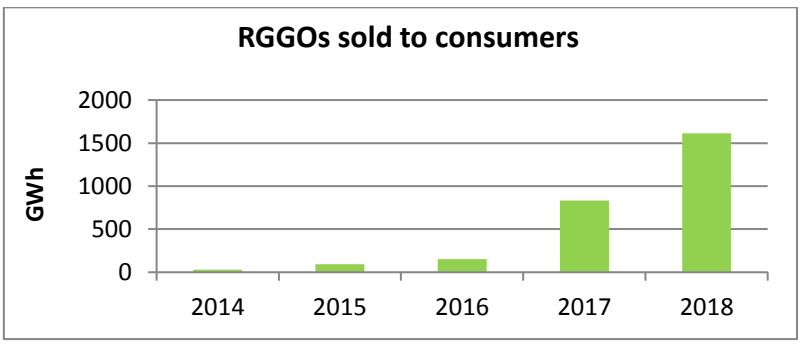
This scheme issues, tracks and retires Renewable Gas Guarantees of Origin (RGGOs). By purchasing RGGOs gas, consumers can show that they are using green gas and report significant GHG savings in comparison to the use of natural gas.

Members

At the end of 2018, the scheme had 55 biomethane producers participating in the scheme, accounting for approximately 75% of biomethane production in the UK. 50 supplier members included the majority of suppliers with the largest market shares of gas supply to small and large business customers. Thirteen suppliers had approximately 1,000,000 household customers on green gas tariffs of between 6 and 100%.

RGGOs sold

2018 saw strong growth in the volume of green gas sold to consumers, which reached 1600GWh.



For more information about the Green Gas Certification Scheme: www.greengas.org.uk
Jesse Scharf, Scheme Manager, jscharf@greengas.org.uk