



Annual Report 2022

Compost / Biofertiliser
Certification Schemes

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Introduction

Renewable Energy Assurance Ltd (REAL) carries out a range of certification and consumer protection activities. All these set and maintain high standards of operating practice, environmental improvement and consumer protection in the renewable energy and circular economy sectors, including in the areas of organics recycling, biogas, and bioenergy.

This report sheds light on the data collected during the course of the year. It also sets out REAL's work during 2022 to manage and develop the Compost Certification Scheme (CCS) and the Biofertiliser Certification Schemes (BCS), and to manage and develop the Research Hub.

Set up in 2006, REAL is a company limited by guarantee with the number 05720606. It is a wholly owned subsidiary of the Association for Renewable Energy and Clean Technology (REA), a leading trade association in the renewable energy and clean tech sector.

REAL works to ensure the schemes are robust and work for all relevant stakeholders, and in so doing, protects consumers of independently certified compost and digestate, and promotes the organics recycling sector.

Data was used from the beginning of January 2023 to reflect the status of the schemes during and at the end of 2022. 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. The Research Hub section provides an overview of the governance, the Hub Selection process, updates on projects completed in 2022 and an update on the projects selected for funding in 2022.

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A word from our Chief Executive

I am delighted to welcome this 2022 Annual Report for the Compost Certification Scheme (CCS) and Biofertiliser Certification Scheme (BCS). Both schemes had yet another very busy year and this report outlines the main developments.

I am pleased to report that the year saw a review of the Scheme Rules for both the CCS and the BCS. Introducing a few significant changes, these will be implemented in 2023. In March 2022, the schemes reverted to requiring on-site audits, having introduced remote audits for the previous two years in response to the COVID-19 pandemic.

On the policy and regulatory front, the Environment Agency initiated a revision process for the Anaerobic Digestion Quality Protocol and the Compost Quality Protocol in England. These Protocols underpin both schemes and, once the review is complete, will be reissued as the Resources Framework. In preparation for the review, the REAL team carried out a detailed analysis of the plastic levels in certified digestate and compost which they made available to the Agency.

During the year the Research Hub went from strength to strength. Following a tender process, Aqua Enviro was appointed to take forward the Residual Biogas Potential Test project. This project will examine the potential to improve the existing Residual Biogas Test in the BCS.

I extend my thanks to the team for all their hard work and dedication during the year.

Virginia Graham

A word from our Chair

Over recent years there has been an increase in the level of environmental awareness amongst the population of the United Kingdom with a focus on using resources in a sustainable manner. This has been reflected in an increased awareness of the need to recycle materials, but also in specific governmental actions such as the plans to phase out the use of peat in the public horticultural sector. In addition, there has been increased recognition of the need to maintain or increase the level of organic matter in our soils, improving their robustness and reducing their susceptibility to damage under the changing environmental conditions resulting from climate change. The production of compost and biofertilisers from recycled organic materials including green waste and food are making significant contributions in all of these areas and their environmental significance is likely to grow. To maintain public confidence in the recycling of these materials, it is essential that the certification of the quality of these materials is undertaken to a high standard; BCS and CCS provide such public confidence.

The meetings of the BCS/CCS Technical Advisory Committee have continued to be virtual rather than face to face. We continue with two full 'meetings' where the agenda is full and discussion extensive with one shorter 'meeting' focusing on matters which need prompt attention. A key area of discussion in the second half of the year focused on the CCS and BCS Scheme Rules. These included consultation on changes to the requirements around the use of the CCS conformity mark, collection of additional data from producers, and the reintroduction of remote annual audits. The results of these consultations together with further feedback from the environmental regulators will be considered and new versions produced in 2023. The CCS Producers' Forum and BCS Operators' Forum also met virtually and were well attended.

The Research Hub continues to work well with a good response to the call for proposals in 2022. Two key projects supported by the Research Hub (beginning this year) focused on areas which have been frequently highlighted by Scheme participants at the Forum meetings in recent times; plastic contamination in both composts and biofertiliser and the Residual Biogas Potential test for biofertilisers. In the area of plastic contamination, two phases were planned; the first gathered information on plastic contamination in compost and digestate independently certified to end-of-waste criteria in England. A paper was produced illustrating that 98.5% of compost samples and 98.1% of digestate samples were within the limits for physical contaminants. A second phase to investigate alternative laboratory methods for determining plastic contamination in composts and digestates will begin in 2023. The project to investigate the Residual Biogas Potential test sought to investigate whether the 28-day duration of the test might be significantly shortened without reducing the reliability of the test and whether there were any robust test procedures which might offer alternative reliable test procedures to the PAS 110 specified Residual Biogas Potential test. This project will report in 2023. A further project which will be put out to tender will investigate how the benefits of applying compost and digestate to soils can be accounted for under the Greenhouse Gas (GHG) Protocol.

Moving forwards it is obvious that the production of high-quality products following the recycling of organic materials will make an increasingly important contribution to many aspects of environmental sustainability, it is imperative therefore that the high standards established by BCS and CCS in relation to biofertilisers and composts are maintained.

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



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. Certification signifies that the compost 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 2022, the largest portion of certified producers fell in the category of producers processing between 20,001 and 50,000 tonnes of organic waste per annum (33% of the total). The category with the smallest number of producers was those processing between 3,001 and 6,000 tonnes of organic waste per annum (5% 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 total compost production, over the course of 2022.

The number of producers on the scheme remained at 176 from January to May and the number was at its highest at 177 in September and December. The annual input tonnage was relatively constant and increased slightly towards the end of the year; the annual output tonnage increased marginally from 1.79 million tonnes in January to approximately 1.82 million tonnes in December. This represents no significant change compared to 2021, in December 2021 the total number of producers was 176, and the output tonnage per annum 1.83 million.

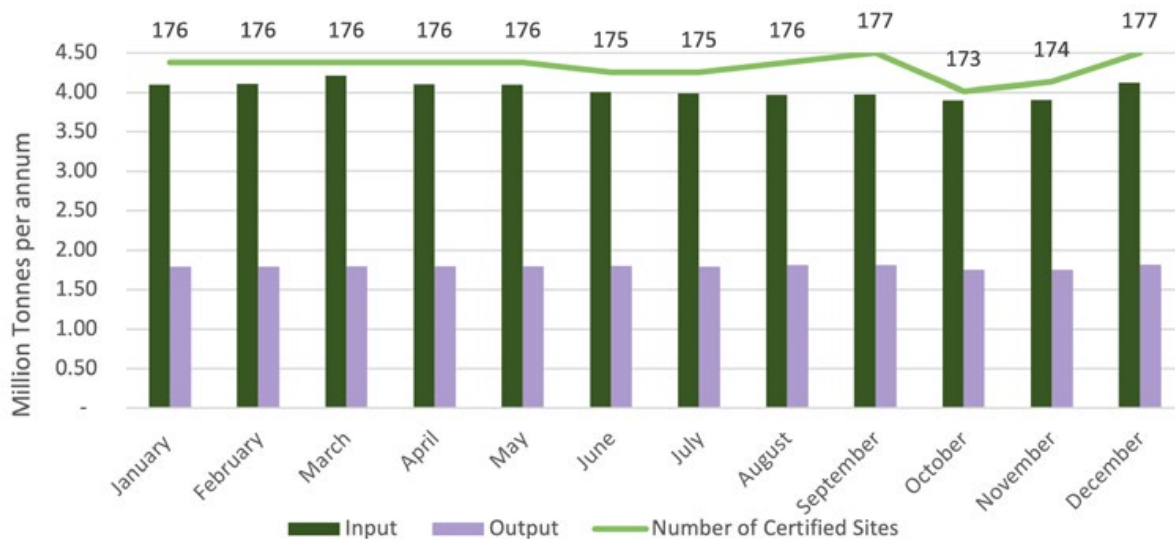


Figure 1 - Total number of certified processes, input tonnage, and compost production in the UK in 2022

Figure 2 presents the number of certified processes by country as a percentage of the total. By the end of 2022, there were 177 certified processes in the UK: 138 certified processes in England, 6 in Northern Ireland, 21 in Scotland, and 11 in Wales. 2022 also saw the first producer certified outside of the UK, with one certified producer in the Republic of Ireland.

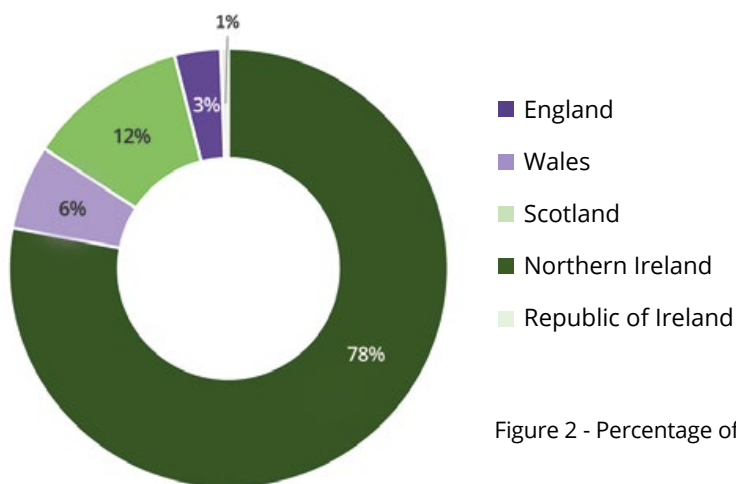


Figure 2 - Percentage of certified processes by country

Proportion of certified processes

Data was collected from the environmental regulators on the permitted/licensed compost sites in each country of the UK (excluding Wales) to show the proportion of certified sites by the end of 2022. The data is shown in the table below:

Country	Total no. of sites with permits for composting	No. of certified sites with permits for composting	No. of certified sites with other permits/exemptions
Northern Ireland	11 (WML and WPPC)	5 (1 WML + 4 WPPC)	1
England	254 (173 WML and 81 PPC) Biowaste treatment sector permits incl. composting as the FAR activity description	127 (61 WML and 66 PPC) Biowaste treatment sector permits incl. composting as the FAR activity description	12 Other permits or exemptions (or biowaste treatment sector permits not incl. composting as the FAR activity description)
Scotland	20 (13 WML and 7 PPC*)	15 (9 WML and 6 PPC)	3

* These numbers might have been higher at the time

Of the remaining 127 sites in England with biowaste treatment sector permits incl. composting as the FAR activity description, 26 had permits for composting < 500 tonnes in total (20%).

Process types

Figure 3 presents the proportion of different types of composting processes certified by the CCS as percentages. 111 out of 177 composting processes were operated as open air, turned windrows. A smaller number of sites were operated as in-vessel composting only (11) or as aerated static piles with no subsequent processing step (11). Only a fraction of processes used an Eco Pod system (1 out of 177). There were 8 processes that operated as a combination of in-vessel composting with subsequent aerated static piling, and 35 as in-vessel composting with subsequent open air turned windrow processing.

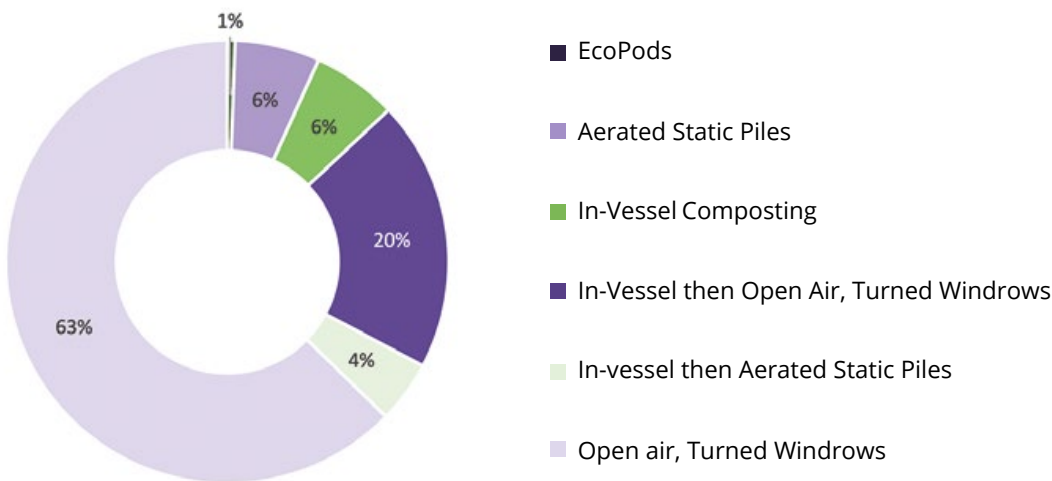


Figure 3 - Percentage of certified process types on CCS

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.

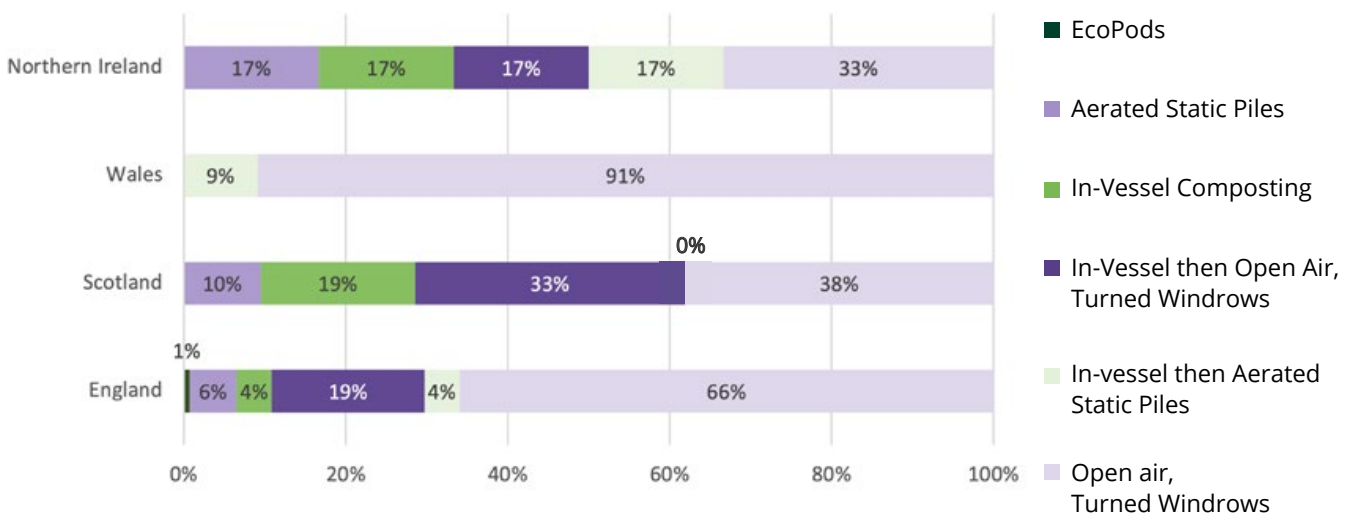


Figure 4 - Percentage of certified process types per country

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. At the end of 2022, 146 processes were composting green waste only and 31 composting green waste and ABP materials.

Figure 5 shows the total number of processes by feedstock type per country; the majority of processes were composting green waste only. At the end of 2022, 100% of certified processes in Wales, 71% in Scotland, 50% in Northern Ireland, and 85% of certified processes in England were composting green waste only.

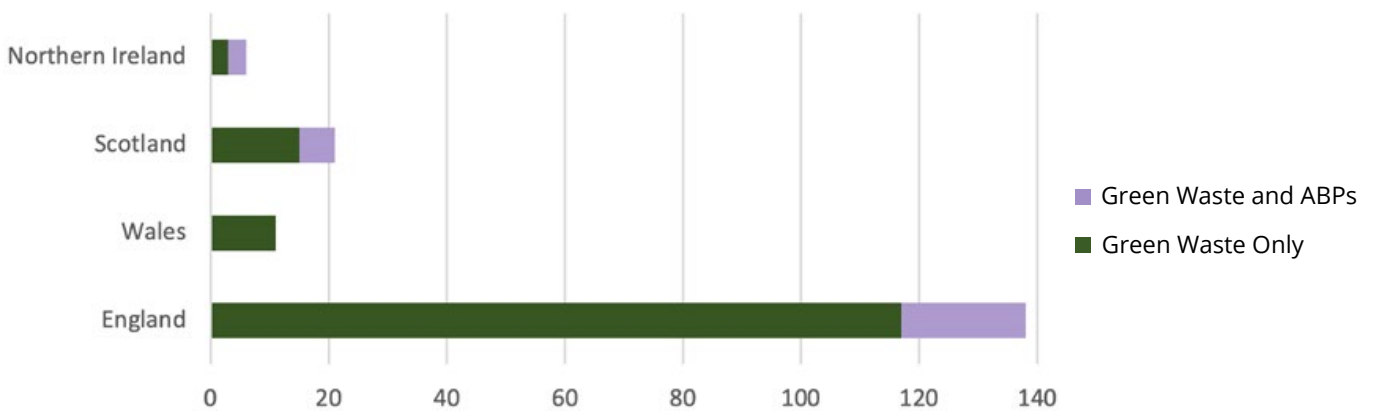


Figure 5 - Number of certified processes by feedstock type per country

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 2022. Approximately 130,000 tonnes of green waste only were being processed by sites in Wales, 127,000 tonnes in Scotland, 70,000 tonnes in Northern Ireland, and 2,530,000 in England. Approximately 180,000 tonnes of green waste and ABPs materials was being processed annually by sites in Scotland, 270,000 in Northern Ireland, and 800,000 tonnes in England.

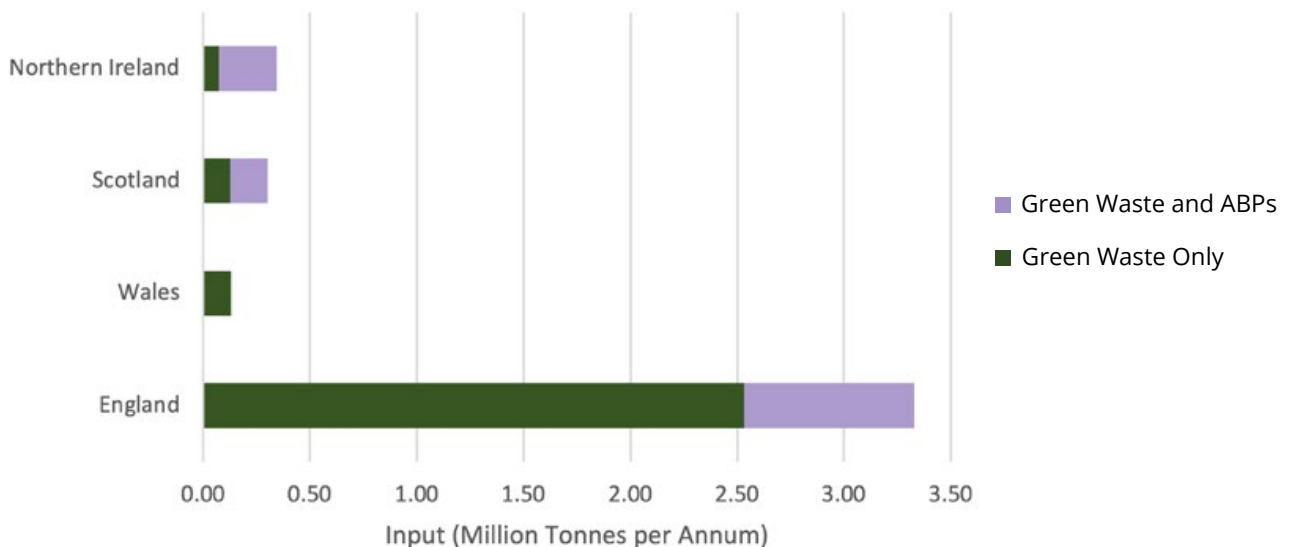


Figure 6 - Annual input tonnage and input type per country

Figure 7 shows the quantity of compost which was being produced by certified sites in each country on an annual basis by the end of 2022. Approximately 64,000 tonnes of quality compost were being produced annually by sites in Wales, 157,000 tonnes in Scotland, 160,000 tonnes in Northern Ireland, and 1.4 million tonnes in England.

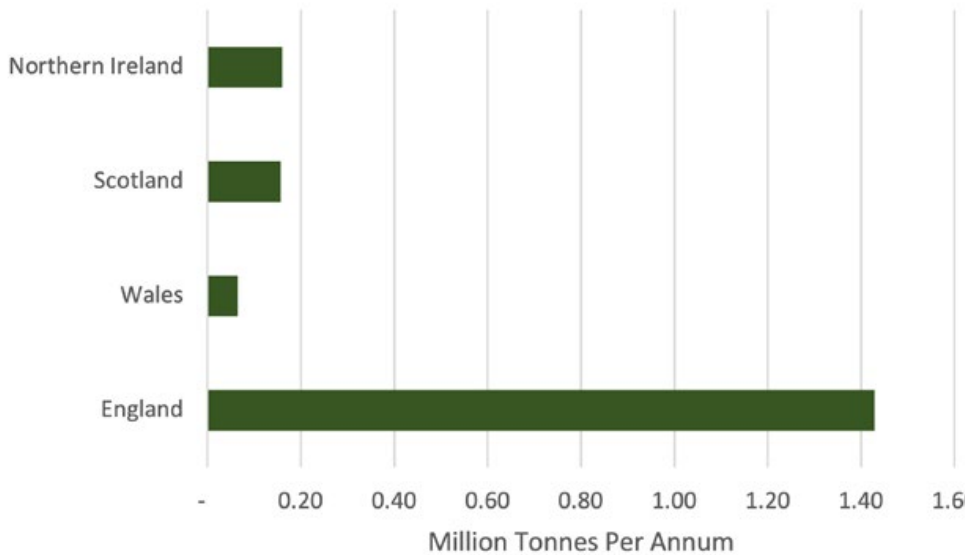


Figure 7 - Annual tonnage of quality compost produced per country

Certified compost is categorised into the following product types; 'Soil conditioner', 'Manufactured topsoil ingredient', 'Mulch', 'Growing medium ingredient' and 'Landscape blend'. By the end of 2022, 96.6% of principal grade compost was labelled as soil conditioner, 1.7% mulch, 0.6% growing medium ingredient, 0.6% landscape blend, and 0.6% manufactured topsoil ingredient. Principle grade compost is the main grade of compost in terms of size produced at each site e.g., 0-10mm.

Markets

The end market sectors for all certified compost processes were recorded throughout 2022. Markets are categorised as follows: “Agriculture and soil-grown horticulture”, “Domestic or professional horticulture”, “Land restoration and soft landscape operations” and “Forestry”.

Figure 8 shows the number of different market sectors per certified composting process per country that quality compost is being distributed to. Figure 9 displays which markets are being supplied to in each country.

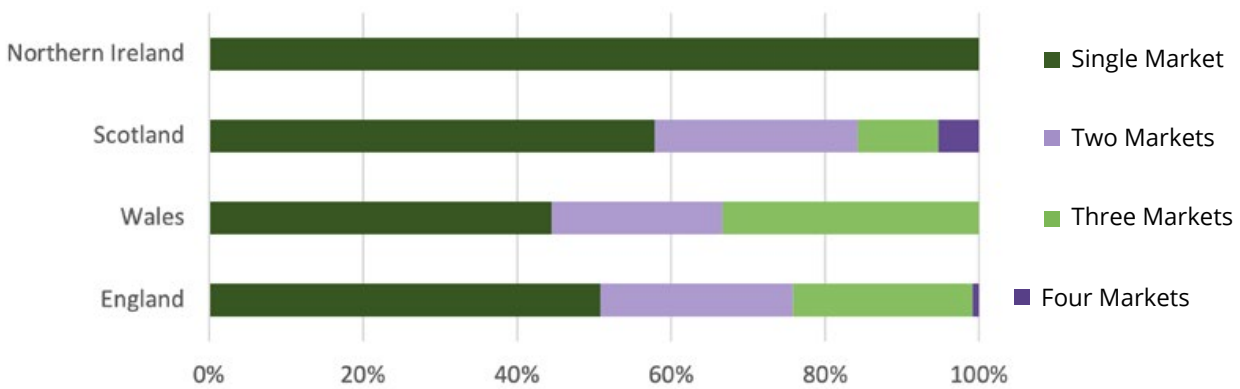


Figure 8 - Number of end markets of certified compost per country

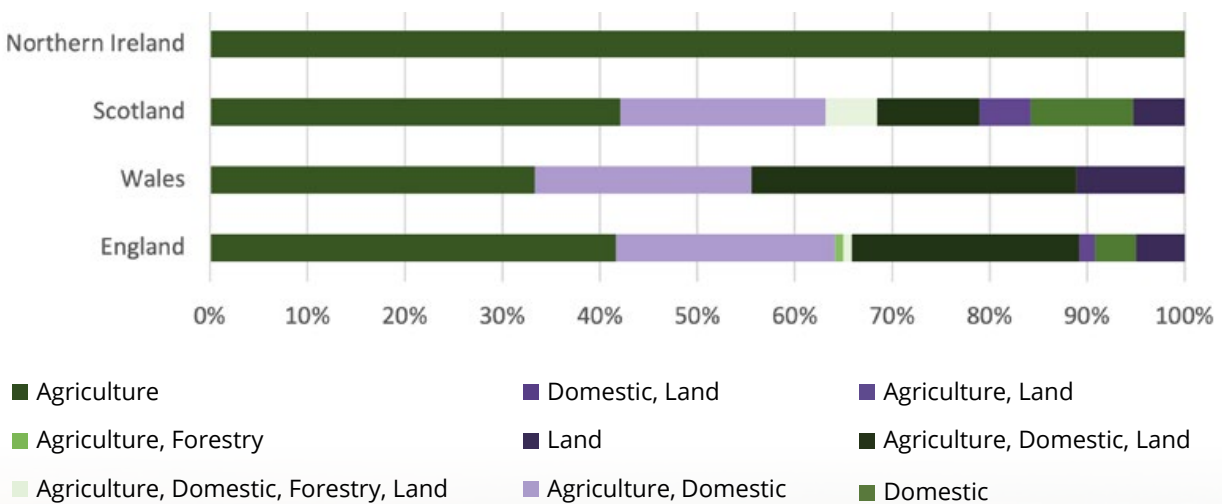


Figure 9 - End markets per process by country



Compost produced by each process type was analysed according to the end market it was destined for. All process types supplied compost to agriculture and soil grown horticulture, with most of the compost from each process supplied to this market. Eco pods supplied to the smallest range of markets, supplying to only one market. This is followed by In-vessel composting (IVC), and IVC and aerated static piles which both supplied to three different markets. Open air turned windrows and aerated static piles were the only process types that supplied compost to all market sectors (agriculture, land, forestry and domestic). This can be seen depicted in Figure 10 below.

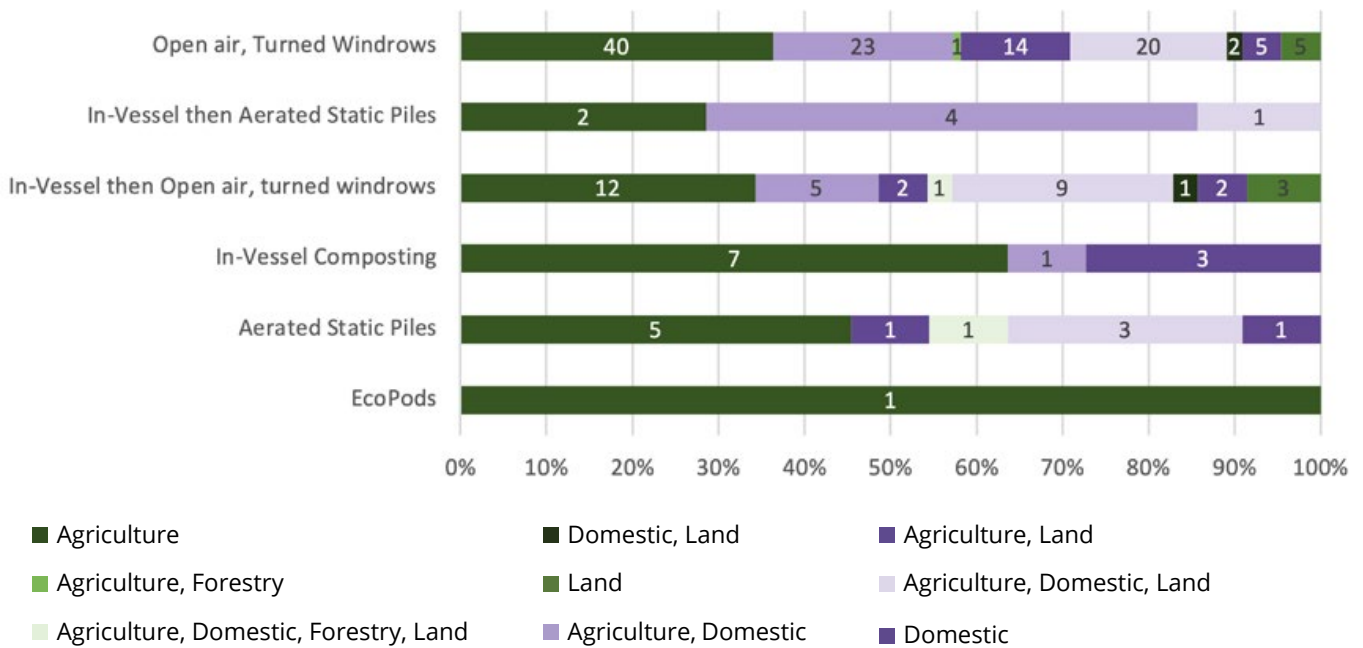


Figure 10 - Total number of process types supplying to each end market



Figure 11 shows the markets that each product type is being supplied to. Soil conditioner is the most common product type on CCS, and was being supplied to the greatest variety of markets. Manufactured topsoil ingredient was only being supplied to land restoration and soft landscape operations.

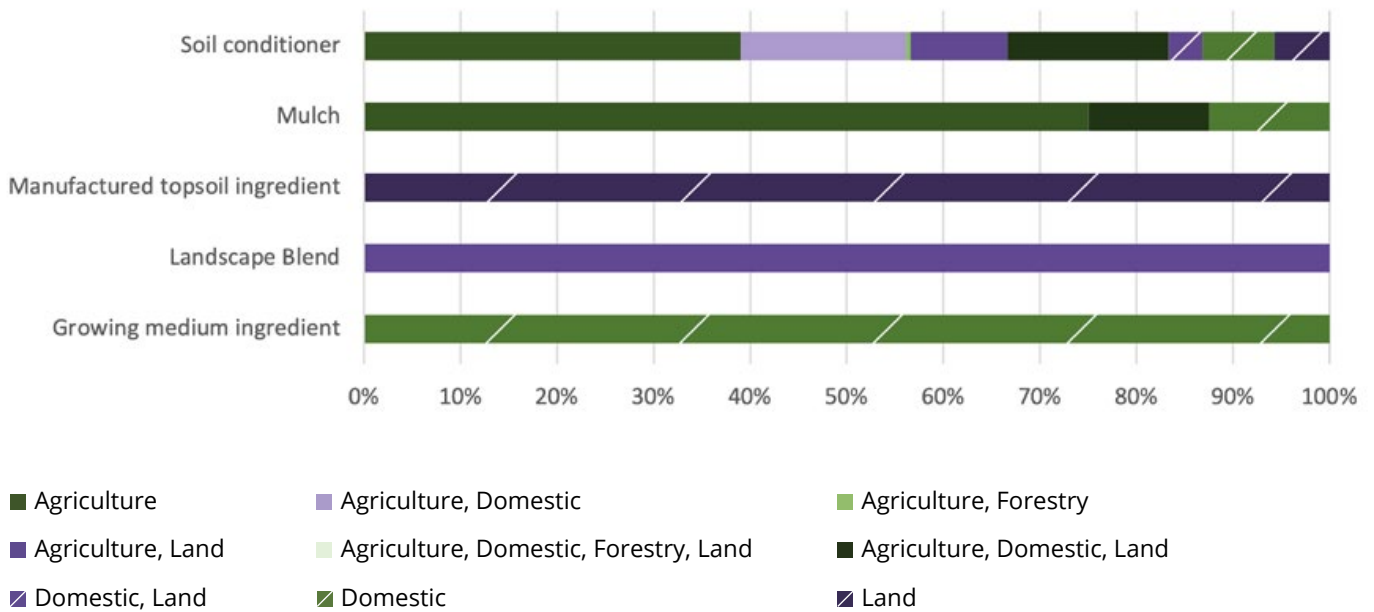


Figure 11 - End market by product type

Compostables

This section details the number of composting sites in 2022 that were accepting compostable packaging and/or liners (compostables) into their process. CCS certified sites can only accept compostables which are independently certified to BS EN 13432, BS EN 14995 and ASTM D6400 for industrial compostability.

There were 23 certified processes in total using compostables in the following process types: IVC, IVC followed by open air turned windrows, IVC followed by aerated static piles, as well as open air turned windrows, and aerated static piles.

Of these 23 processes, 14 were taking green waste and ABP materials, and the remaining 11 were taking green waste only.

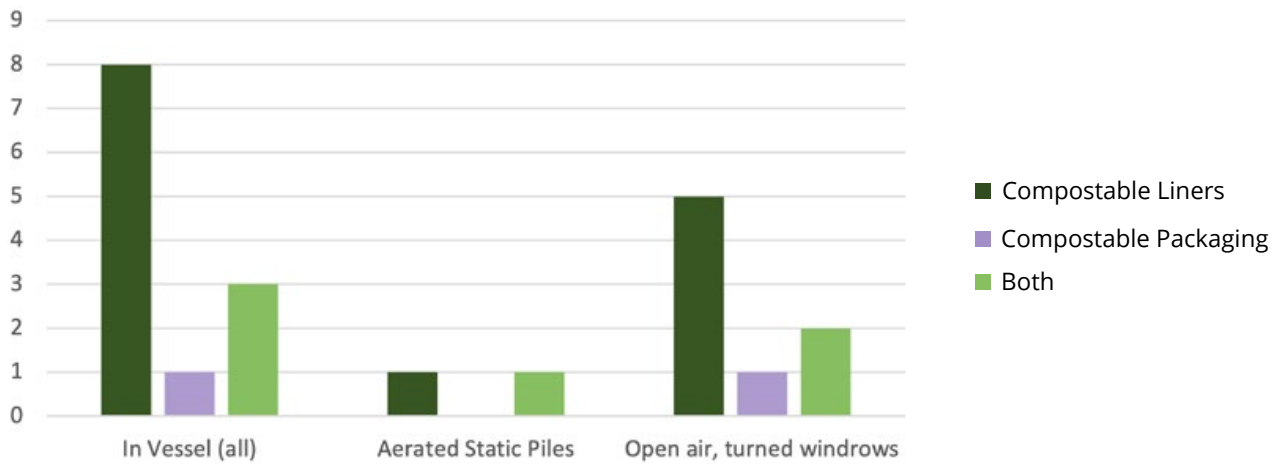


Figure 12 - Types of compostable accepted by different process types

As shown in Figure 12 there were 14 processes in 2022 accepting only compostable liners, 2 accepting only compostable packaging, and 6 processes accepting both. Figure 13 shows the number of sites accepting different types of compostables in each country in the UK.

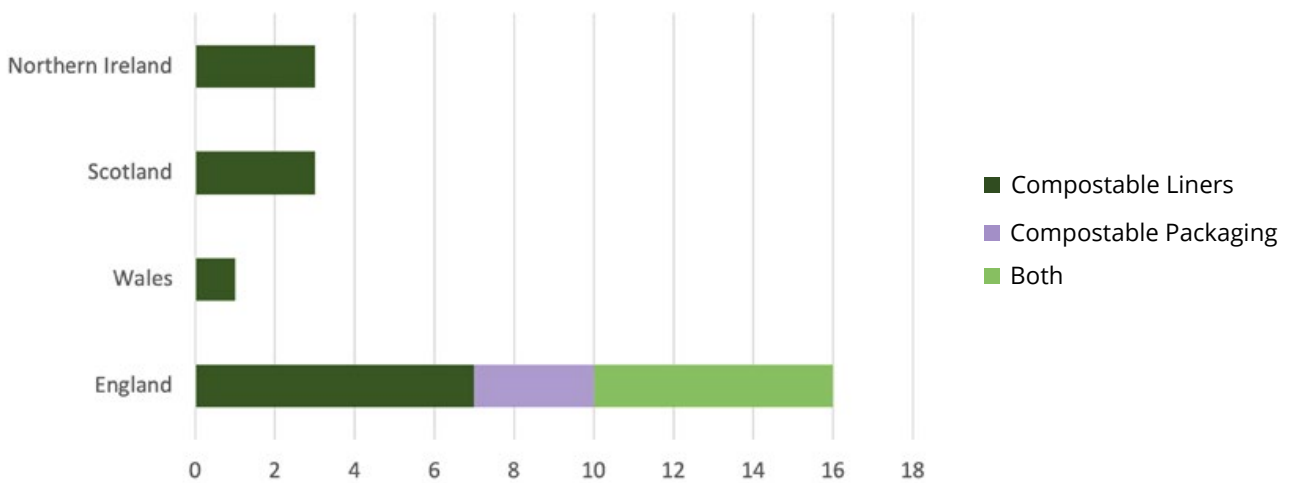


Figure 13 - Compostables accepted by country

Biofertiliser Certification Scheme

This scheme provides assurance to consumers, farmers, food producers, and retailers that 'biofertiliser' produced from certified anaerobic digestion processes is safe for human, animal, and plant health. Biofertiliser is the name adopted for the 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. Certification 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 103 plants certified under the BCS by the end of 2022 with a total registered annual throughput of approximately 6 million tonnes. The largest portion of certified operators fell in the category of operators processing between 25,001 and 50,000 tonnes of organic waste per annum (25% of the total). Of the 103 certified plants, 75 were located in England, 7 in Northern Ireland, 13 in Scotland, and 8 in Wales. This is shown as a percentage in figure 14.

6 million tonnes

103 certified plants

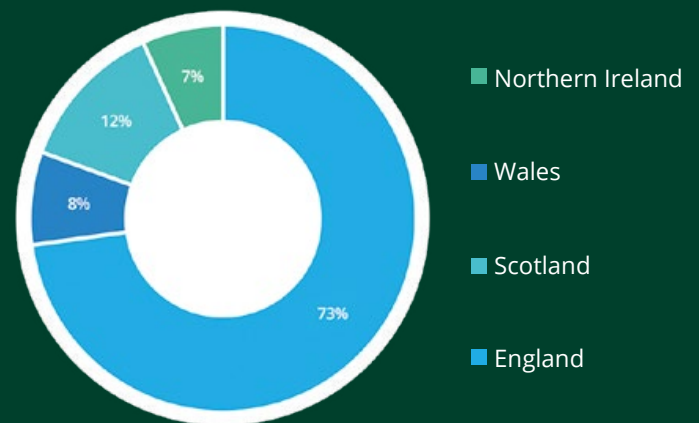


Figure 14 - Percentage of certified plants in the UK per country

Proportion of certified processes

Data was collected from the environmental regulators on the permitted/licensed AD/biogas sites in each country of the UK (excluding Wales) to show the proportion of certified sites by the end of 2022. The data is shown in the table below:

Country	Total no. of sites with permits for AD/biogas	No. of certified sites with permits for AD/biogas	No. of certified sites with other permits/exemptions
Northern Ireland	43 (WML and WPPC)	6 (4 WML and 2 WPPC)	1 (PPC)
England	220 (114 WML and 106 PPC) Biowaste treatment sector permits incl. AD/biogas as the FAR activity description	67 (14 WML and 53 PPC) Biowaste treatment sector permits incl. AD/biogas as the FAR activity description	8 Other permits or exemptions (or biowaste treatment sector permits not incl. AD/biogas as the FAR activity description)
Scotland	9 (1 WML and 8 PPC)	8 (1 WML and 7 PPC)	5

Of the remaining 153 sites in England with biowaste treatment sector permits incl. AD/biogas as the FAR activity description, 75 had permits for on-farm anaerobic digestion of farm wastes only (49%).



Input and output

Feedstock materials processed by certified AD plants vary. Operators accept input materials from agricultural, municipal, commercial, and industrial sources. They also accept a combination of ABP and non-ABP materials, products, co-products, wastes, and residues. A combination of these input materials is common.

The input materials that AD plants process are categorised under the scheme as 'farm', 'waste' or 'other'. Farm-fed plants are those processing over 50% agricultural feedstock e.g., manures and crops, waste-fed plants are those processing over 50% waste feedstock e.g., food waste, and plants in the 'other' category are those processing over 50% non-waste/agricultural feedstock e.g., distillery by-products.

By the end of 2022, 82 plants fell in the 'waste' category, 16 in 'farm', and 5 in the 'other' category. Figure 15 shows the percentage split of those certified plants and their input type.

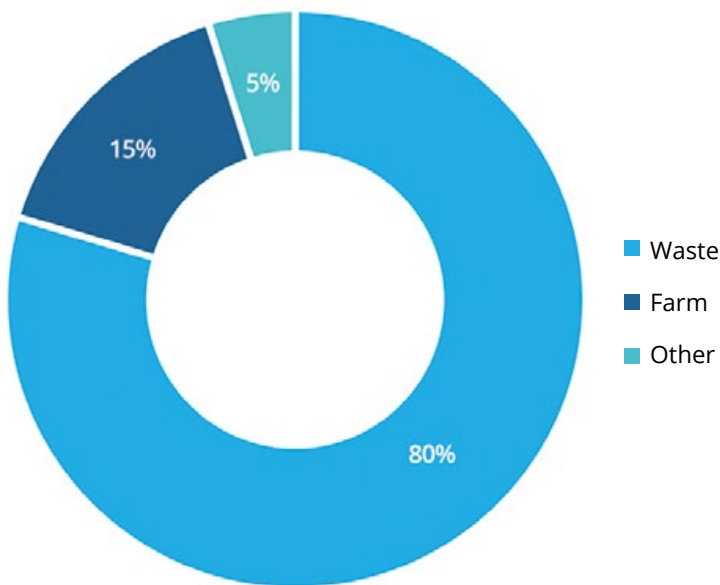


Figure 15 - Percentage of plants in each feedstock type category

Figure 16 shows the total annual throughput per country broken down by feedstock type. In total, approximately 270,000 tonnes of organic waste materials were being processed annually by certified plants in Wales, 1.0 million tonnes in Scotland, 240,000 tonnes in Northern Ireland, and 3.9 million tonnes in England.

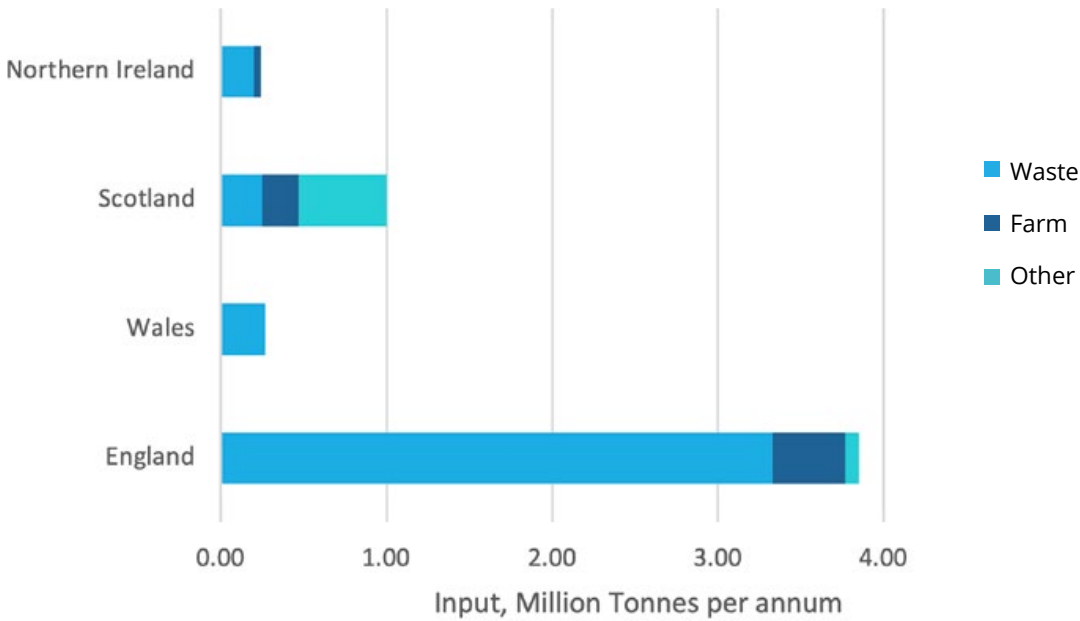


Figure 16 - Registered annual throughput per country

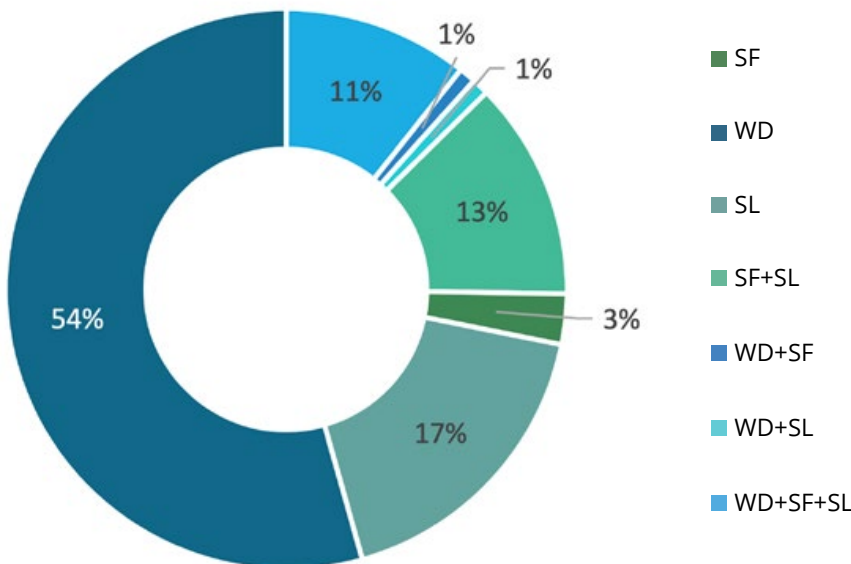


Figure 17 - Percentage of certified plants producing different certified output types

Figure 17 shows the certified digestate outputs produced by plants, in percentages. Most facilities produced certified whole digestate and 26 plants produced more than one type of certified output. In total, 56 plants were producing only certified whole digestate, 18 producing only certified separated liquor, and only three producing certified separated fibre alone. Figure 18 shows the tonnage of each digestate output type produced.

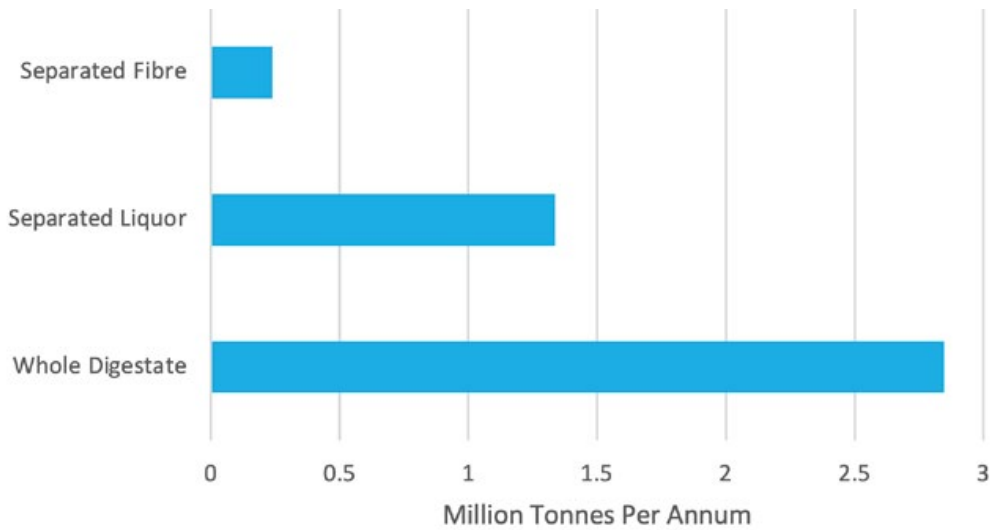


Figure 18 - Annual output tonnage by output type

Markets

Figure 19 shows the percentage of plants producing various types of certified digestate in each country of the UK. A variety of certified output types were produced in each country.

Figure 20 shows which market different output types are being supplied to.

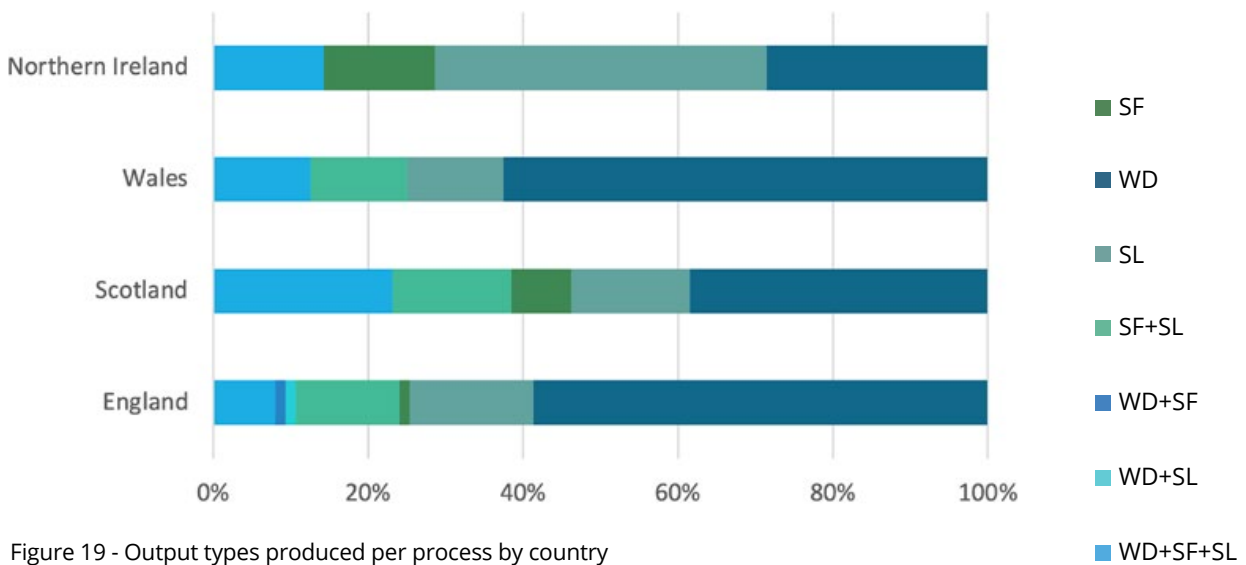


Figure 19 - Output types produced per process by country

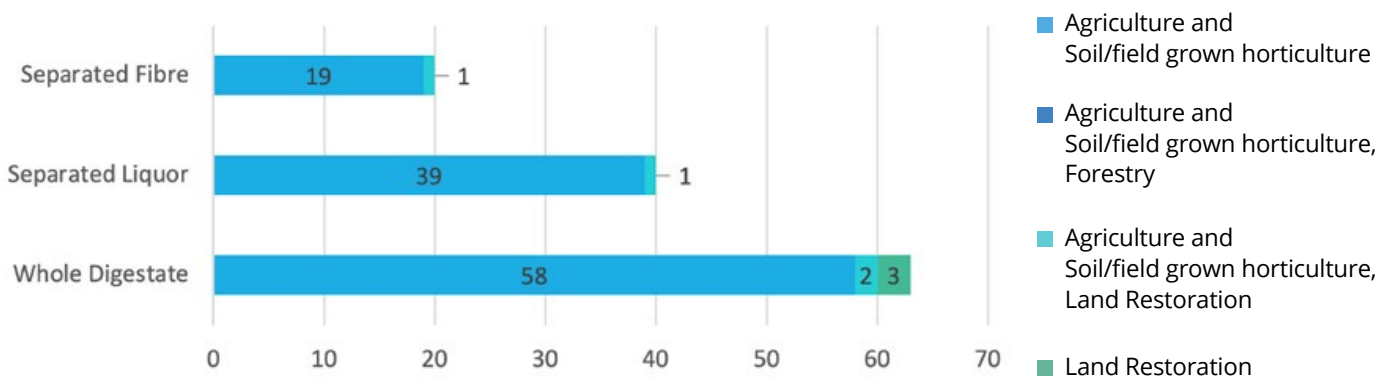


Figure 20 - Output types by market

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. REAL developed several aspects of CCS and BCS in 2022, which are summarised below.

Remote Audits

A final review meeting took place between REAL and the environmental regulators in January 2022 to discuss remote auditing while the Covid-19 pandemic continued. The previous agreement with NIEA was reintroduced until 31st March, allowing remote audits in Northern Ireland under exceptional circumstances. This agreement lapsed after that date, meaning a return to all audits on-site across the UK for the first time since March 2020.

ADQP and CQP Revision

The Environment Agency's Task and Finish Group for the CQP and ADQP, with REAL a member of this group, held their first meetings in September 2022. The scope of the revision and evidence available to date were considered, with the focus on risk assessment. The group met again in November, during which the timeline for this work was discussed in further detail. REAL produced and shared a report on plastic contamination in QP certified compost and digestate in England with the members of the group. This data and research will be considered when discussing plastic limits in the future end of waste framework. REAL will continue to contribute to these meetings in 2023 and look forward to seeing the revision process progress.

Tender for Certification Services

REAL opened a tender for provision of certification services under CCS and BCS in July 2022. The tender period ran for six weeks. Following a careful review of submissions and responses to requests for further information, REAL reappointed the three existing certification bodies. The selected certification bodies provide certification services on behalf of REAL, in compliance with the most recent issued versions of the REAL CCS and BCS Scheme Rules.

Working Groups

The PRT TWG submitted a proposal to the Research Hub in January 2022. This project was selected, and a tender opened for this work in Autumn 2022, however unfortunately, no responses to this tender were received, so REAL are considering other options for running this project.

The MDWG met in April 2022 and the group discussed market-related changes over the last year, for example the increased value of digestate. David Tompkins from Aqua Enviro also attended to discuss the WRAP project on plastics in compost and digestate and a BEIS project relating to digestate. Following this meeting, the MDWG submitted a proposal to the Research Hub to gather evidence for potential future revisions to the plastic limits in PAS 100 and PAS 110.

In addition, REAL were considering the future directions of the working groups in general. 2023 marks four years since the MDWG was created, and three since the setup of the PRT TWG. REAL discussed potential future areas of focus and considered if new working groups needed to be set up to focus on specific areas in the existing groups' stead.

Scheme Rules Review

Following a review in early 2022, a decision was made to revise the CCS and BCS Scheme Rules. In particular, REAL was looking to consult on changes to the requirements around the use of the CCS conformity mark, collection of additional data and information from producers, and the reintroduction of remote annual audits, the reintroduction of independent sampling. Draft versions were circulated to scheme participants and TAC members in September 2022 for consultation which closed in late 2022. REAL considered feedback provided and final comments from the regulators towards the end of the year with the aim to publish the new versions in mid-2023.

Plastic Contamination Paper

REAL carried out research internally to publish a paper in December 2022 sharing data on plastic contamination in compost and digestate independently certified to end-of-waste criteria in England. The analysis in the paper shows 98.5% of compost samples and 98.1% of digestate samples tested were within the limits for physical contaminants. The results provide conclusive evidence that the levels of plastic contamination in compost and digestate that has been independently certified to end-of waste criteria in England are lower than those required by the standards.

Compostables Capacity Paper

REAL also published a paper in 2022 titled 'Composting compostables in the UK: Capacity for the composting of certified industrially compostable materials at certified industrial composting facilities in the UK'. This paper was produced to share data collected through CCS as of September 2022, presenting a picture on the number of industrial composting processes in the UK that are both certified by CCS and accept independently certified compostable materials. The paper shows that there were 24 CCS certified sites in the UK which confirmed they accept and feed compostables into their process.

Scheme Participants and Research Hub Survey

In September 2022, REAL conducted the annual participant satisfaction surveys, combined with the Research Hub feedback survey. Using these surveys, REAL also sought feedback on any new guidance documents or webinars that scheme participants or applicants would find beneficial. The feedback we received indicated that overall, there was a positive view of the work being carried out by REAL and highlighted some useful additions we could make to our webinars. The Research Hub survey indicated that operators' views of the Hub are positive, but that more could be done to promote the outputs of Hub projects which are available to operators.

Laboratory Terms and Conditions

The new T&Cs for approved laboratories on the BCS/CCS were issued in December 2022. The new T&Cs are the result of our annual review and revision process carried out in consultation with both certification bodies and approved laboratories. A significant legal review was undertaken alongside the usual technical review further strengthening this important scheme(s) document.

New Guidance Documents

REAL published two new guidance documents; the 'Guidance on assessing PAS 100/PAS 110 test results against SEPA plastic limits' and the 'REAL CCS/BCS guidance note on RPS 241'.

The guidance on assessing PAS test results against SEPA plastic limits details the additional mandatory requirement in respect of plastic contamination for compost outputs to meet 'end of waste status' under the Scheme in Scotland, and how to assess results against this requirement. The guidance note on RPS 241 provides guidance to scheme participants and appointed CBs on the changes outlined in the EA's RPS 241. This RPS allows producers to accept waste with codes that are not in their waste authorisation or the QPs instead of the 'not otherwise specified' '99' waste codes.

Liaison with DEFRA

In 2022, REAL strengthened the relationship between the CCS, BCS and DEFRA; REAL held a series of liaison meetings with DEFRA in which relevant policy-related issues were discussed, including the implementation of GB Fertilising Products Regulations (FPR). Representatives from DEFRA also attended the TAC meetings to learn of scheme developments, provide updates on the FPR and contribute to discussions.

Site Map and Events Webpage

REAL introduced two developments to the CCS and BCS websites in 2022; the first being the inclusion of a map showing where certified processes are located, and the second being an events page which shows information regarding upcoming webinars, workshops, and forum meetings, as well as REA training courses or other industry events and how to attend these.

The events page was created following feedback from operators regarding a lack of awareness around scheme-related events.





About the Research Hub

Background

REAL established the Research Hub in 2018 to fund research to support technical and regulatory developments related to the production, testing, and use of quality-certified compost and digestate. Research Hub-funded research is intended to contribute to the continued improvement of the Schemes (i.e., CCS and BCS) and associated Standards (i.e., BSI PAS100 and BSI PAS110, respectively).

Governance

The Research Hub is managed by REAL. To ensure that the work of the Research Hub is transparent and in line with its objectives, REAL have established the Governance Committee, Research Panel, and Project Management Team(s). These groups are responsible for different parts of the Research Hub's governance and operation:

- The Governance Committee oversees the operation of the Research Hub.
- The Research Panel decides which research projects will be funded and is comprised of independent stakeholders, including CCS/BCS Participants, Environmental Regulators, Government Representatives, and Trade Bodies.
- The Project Management Team provides management support for a specified project.

About the Hub

Scope and Objectives:

The Research Hub funds research in support of the following objectives:

- Maintain and improve the robustness of the Schemes and related Standards
- Reinforce confidence in the compost and anaerobic digestion markets; and
- Contribute to development of new markets, including identifying barriers

How it Works

How Projects are Selected

Each January, the Hub issues a Call for Proposals to source research ideas from any party who wishes to submit a proposal. In May, BCS and CCS participants are invited to provide feedback on the submitted research proposals via an online survey.

The Research Panel then meets to evaluate and shortlist the research proposals according to the Phase One Evaluation Criteria. In June, REAL's advisor further develops each shortlisted proposal. In July, the Research Panel meets for a second time to evaluate the shortlisted and further developed proposals according to the Phase Two Evaluation Criteria. Following this evaluation, the Panel recommends the project(s) to be selected for funding.

How Contractors are Appointed

A unique Project Management Team (PMT) is appointed for each newly selected research project. On most occasions, each project will undergo a competitive tender process to source potential delivery contractors. The PMT will evaluate all bids received and make recommendations. REAL will appoint a contractor considering the PMT's recommendations. Upon completion of the tender process, the PMT and REAL provide feedback to all tenderers.

Funding

Funding for the Hub is generated through the Research Fee paid annually by CCS and BCS participants. The Research Fee is calculated on a case-by-case basis according to the annual input tonnage (tpa) of each plant. The Research Fees are ring-fenced. The effective amount for future projects at the end of 2022 is approximately £269,000.

More information about the Hub's operations, objectives and funding can be found at www.realresearchhub.org.uk/about

Research Projects

Two new projects were selected for funding in 2022:

How the benefits of applying compost and digestate to soils can be accounted for under the Greenhouse Gas (GHG) Protocol

The project aims to evaluate the carbon accounting benefits associated with producing and applying compost and digestate to land. Further, the project endeavours to develop guidance to account for these benefits under the Greenhouse Gas Protocol.

To fulfil this aim, the project's key objectives are as follows:

1. To demonstrate to compost producers and AD operators the benefits of engaging with the GHG Protocol as a key step towards understanding their commercial activities within the global imperative to minimise climate-warming emissions.
2. To provide guidance to operators on how to account for the production and application of compost and digestate under the GHG Protocol.

Plastic contamination method assessment: Evaluating current mass-based method and possible alternative methods of assessment for plastics in compost and digestate

This project aims to investigate whether the current methods for determining physical contaminants are fit for purpose and to explore the efficacy of alternative plastic assessment methods for potential adoption and to inform future limits under PAS100 and PAS110.

To fulfil this aim, the project's key objectives are as follows:

1. To assess the robustness (sensitivity and efficacy) of the current mass-based method for assessing plastic (physical contaminants) under PAS100 and PAS110.
2. To assess the robustness and sensitivity of the current mass-based method for assessing plastic (physical contaminants) under PAS100 and PAS110.
3. To investigate the feasibility of implementing microplastic analysis for compost and digestate on a research and development basis.

Completed and Current Project Updates

To develop a Research Library for the Organics Recycling industry

Contractor NNFCC and subcontractor Vital continued maintaining the virtual Organics Recycling Research Library throughout 2022. The Research Library collates research conducted across the composting and anaerobic digestion industries and highlights 'research gaps' – areas where research is currently limited or absent. The Research Library can be found at www.realresearchlibrary.org.uk

To develop a 'data pack' on the properties, characteristics, and content of digestate that will provide context for the development of new uses of outputs from Anaerobic Digesters

Upon completion of the project in December 2021, the Solidsense Ltd Consortium produced two reports: a standalone Digestate Data Pack and an associated Digestate Valorisation Report.

In 2022, the Digestate Data Pack and Valorisation report were requested for use by key stakeholders across the sector including representatives from government, industry, and trade bodies.

To request access to the Research Hub's projects, including the Research Library and Digestate Data Pack and Valorisation Report, please email info@realschemes.org.uk

Evaluation of the potential for the improvement of the Residual Biogas Potential test and investigation of alternative test procedures for PAS110 biofertilisers

In 2021, REAL selected a project to explore improvements to the Residual Biogas Potential (RBP) test, the only digestate stability testing regime currently recognised under PAS110. In February 2022, REAL appointed Aqua Enviro to conduct the project. Work began on the project in May 2022 and is expected to be completed in June 2023.

Plant Response Test Failures: Investigation of contaminants and phytotoxins in 'End of Waste' composting feedstocks and finished composts

In September 2021 the Research Panel commissioned a project to explore improvements and alternatives to the Plant Response Test (PRT), a test method specified in PAS100.

After the project received no bids in 2021, feedback was collected in Spring 2022 and put back out to tender in October 2022. The project again received no bids and currently under internal review.

To learn more about the Research Hub's work, please visit our website at www.realresearchlibrary.org.uk. Please send any queries to info@realschemes.org.uk



In 2019 REAL achieved certification of its Quality Management System to the ISO 9001:2015 standard.

The ISO 9001:2015 standard is based on a number of quality management principles including a strong customer focus, the motivation and implication of top management, the process approach and continual improvement. Using ISO 9001 helps ensure that customers get consistent, good-quality products and services, which in turn brings many business benefits.

The seven quality management principles are:

- customer focus
- leadership
- engagement of people
- process approach
- improvement
- evidence-based decision making
- relationship management.



Compost Certification Scheme (CCS) is part of Renewable Energy Assurance Limited.

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