Compost Certification Scheme

Biofertiliser certification scheme

Annual Report 2019

Compost / Biofertiliser Certification Schemes

Contents

Introduction

Renewable Energy Assurance Ltd (REAL) carries out a range of certification and consumer protection activities. All of 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 sets out REAL's work during 2019 to manage and develop the Compost Certification Scheme (CCS) and the Biofertiliser Certification Schemes (BCS). It also sheds light on the data collected during the course of the year.

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), the major trade association in the renewable energy sector.

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 2020 to reflect the status of the schemes during and at the end of 2019. 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.

Contact

Justyna Staff
Head of the Certification Schemes
justyna@realschemes.org.uk

Georgia Phetmanh
Schemes Manager
georgia@realschemes.org.uk

Olivia Furssedonn
Research Hub Manager
olivia@realschemes.org.uk

Molly Rogers
Research and Communications Assistant
molly@realschemes.org.uk

A word from our Chair

Throughout 2019, the trend of increasing awareness amongst the public on matters such as efficient resource use and minimising environmental damage going forwards has been maintained.

Rather than being a 'niche' interest, environmental awareness is now widespread amongst the population and there are increasing public demands to ensure wherever possible recycling should be maximised, and waste kept to a minimum. The efforts of both BCS and CCS participants play a significant role in achieving these aims. During the year there was a continued high level of activity amongst CCS participants and the number of BCS participants continued to rise with a commensurate increase in the volumes of material recycled and the amount of biofertiliser produced. With the plans for increased local recycling of household food waste, the biofertiliser production is likely to continue to increase. The population will expect the compost and biofertiliser to be of high and consistent quality. The CCS and BCS are key to ensuring that quality standards are maintained and public confidence retained.

To ensure that the high quality standards are maintained, REAL has an ongoing review programme of the methods used in determining the quality of the products, and works in close collaboration with the approved laboratories to maintain the efficacy of the procedures used. The first step in the sample analysis is the on-site sampling. During the year, REAL produced a detailed document on sampling guidance for CCS participants, supported by a very successful workshop held in Edinburgh in October. The feedback from the workshop was excellent and plans for further workshops are being developed, together with presentations in the form of webinars to ensure as wide an audience as possible.

2019 saw the launch of the Research Hub within REAL. The aim of the Research Hub is to commission research which will identify gaps in our knowledge and also investigate strategies which will enable continued improvements in the quality of the products across the two Schemes. The Research Hub was welcomed by Scheme Participants and 32 proposals were received in response to the first call. The Research Panel considered these proposals in detail and where appropriate consolidating proposals where there were high degrees of communality. Following these discussions, the first project was identified 'The development of a Research Library for the Organics Recycling Industry' which will be put out to tender in early 2020.

The Organics Recycling Industry continues to grow and BCS and CCS are key players in ensuring that the quality of the outputs are continually monitored, and appropriate changes made to ensure the public perception of the products remains positive.

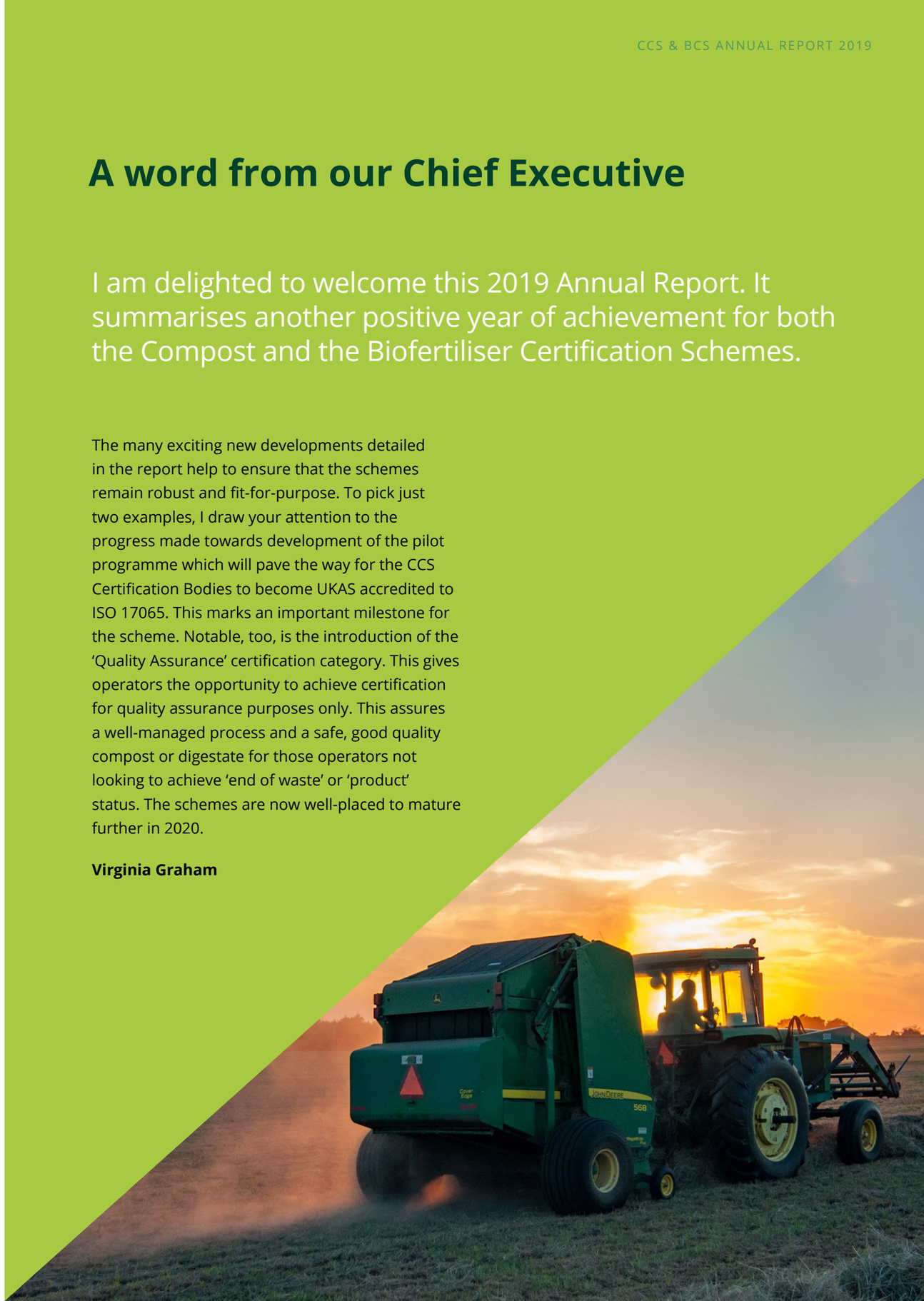
Professor Stephen Nortcliff (Chair of the CCS/ BCS Technical Advisory Committee)

A word from our Chief Executive

I am delighted to welcome this 2019 Annual Report. It summarises another positive year of achievement for both the Compost and the Biofertiliser Certification Schemes.

The many exciting new developments detailed in the report help to ensure that the schemes remain robust and fit-for-purpose. To pick just two examples, I draw your attention to the progress made towards development of the pilot programme which will pave the way for the CCS Certification Bodies to become UKAS accredited to ISO 17065. This marks an important milestone for the scheme. Notable, too, is the introduction of the 'Quality Assurance' certification category. This gives operators the opportunity to achieve certification for quality assurance purposes only. This assures a well-managed process and a safe, good quality compost or digestate for those operators not looking to achieve 'end of waste' or 'product' status. The schemes are now well-placed to mature further in 2020.

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. Certification 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 2019, 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 (34.62% of the total). The category with the smallest number of producers was for those processing between 3000 and 6000 tonnes of organic waste per annum (6.5% 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 compost production over the course of 2019. 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 for the rest of the year. The input tonnage processed also fluctuated throughout the year and the compost produced remained almost constant throughout the year, with an average of 1.84 million tonnes of compost produced per annum.

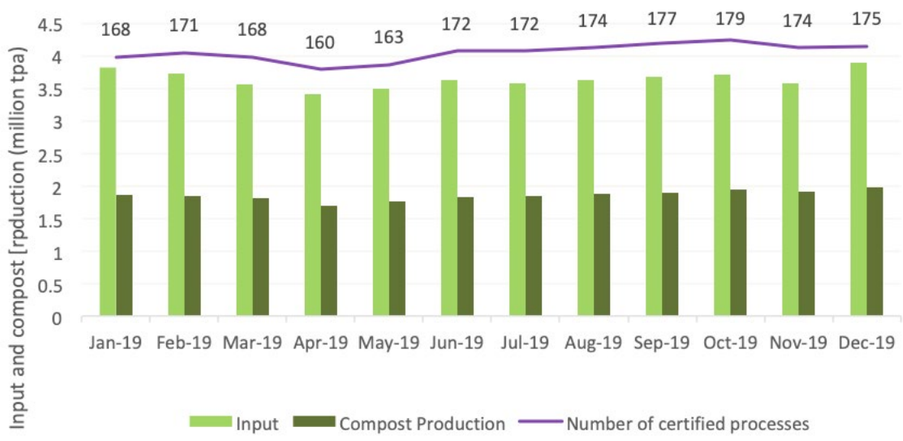


Figure 1 Total number of certified processes, input tonnage, and compost production in the UK in 2019

Figure 2 presents the number of certified processes in each country of the UK, as a percentage of the total. By the end of 2019, there were 182 certified processes in the UK. There were 142 certified processes in England, 22 in Scotland, 12 in Wales, and 6 in Northern Ireland.

In 2020, data was collected from the environmental regulators on the permitted/licensed compost sites in each country in the UK. We used this data to calculate the proportion of certified sites at that time (May 2020 or July 2020).

In May 2020, 100% of sites with waste permits and 29% of sites with waste licences in Northern Ireland were certified through the CCS. In Wales, 50% of all bespoke sites were certified through the CCS.

In July 2020, 50% of sites with WML and 80% of sites with PPC permits in Scotland were certified. In England, 47% of all sites with biowaste treatment sector permits covering composting as an activity were certified.

These percentages are based on the table of data below. The total number of sites in England with permits for composting are biowaste treatment sector sites. The data table includes the number of certified sites with other permits/ exemptions (e.g. food and drink sector), however, it does not include the total number of sites in England with other permits/ exemptions where composting is not the primary activity.

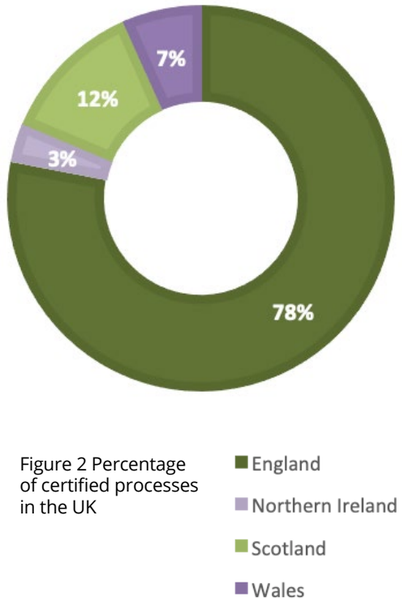


Figure 2 Percentage of certified processes in the UK

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	- 3 with waste permits - 7 with waste licences	- 3 with waste permits - 2 with waste licences	- 0
Wales	- 18 bespoke (waste or installation)	- 9 bespoke (waste or installation)	- 2
Scotland	- 12 with WML - 5 with PPC permits	- 6 with WML - 4 with PPC permits	- 7
England	- 278 with biowaste treatment sector permits	- 131 with biowaste treatment sector permits	- 8 with permits in other sectors including composting as an activity

Process types

Figure 3 presents the proportion of different types of composting processes in the UK as percentages. 118 out of 182 composting processes were operated as open air, turned windrows. A small number of sites were operated as in-vessel composting (11) or as aerated static piles (10) with no subsequent processing step. Only a fraction of processes used an Eco Pod system (2 out of 182). There were 13 processes that operated as a combination of in-vessel composting with subsequent aerated static piling and 28 as in-vessel composting with subsequent open air turned windrow processing.

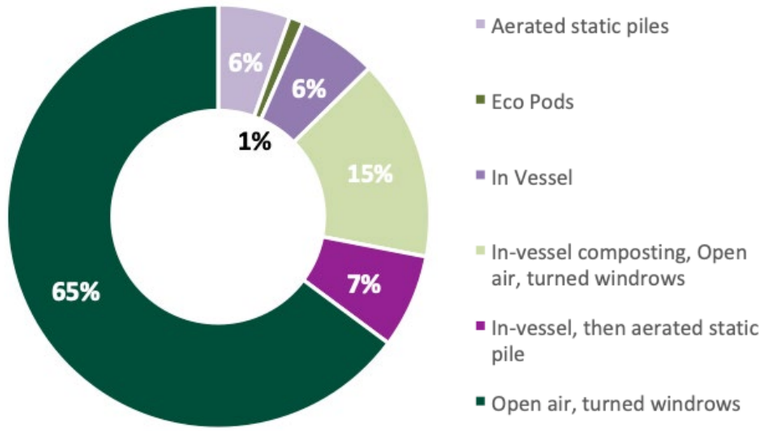


Figure 3 Percentage of certified process types in the UK

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.

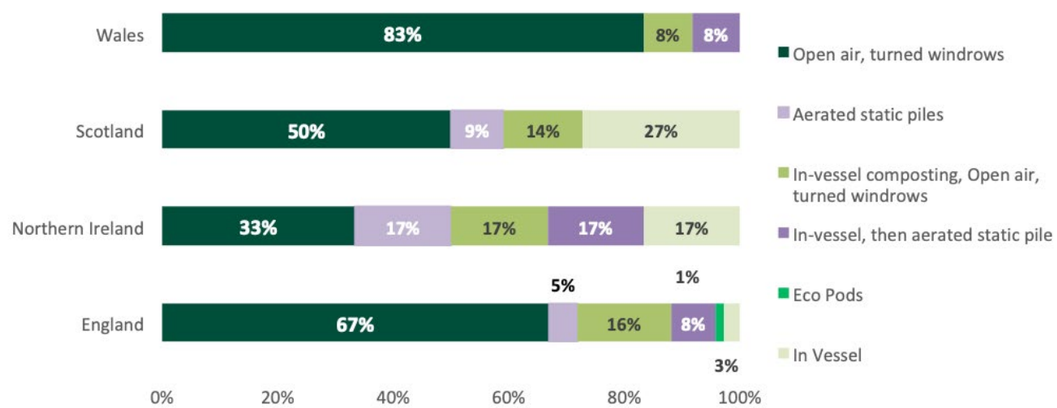


Figure 4 Percentage of certified process types per country

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 2019, 85% of certified sites in England, 73% in Scotland, 92% in Wales, and 67% in Northern Ireland were processing green waste only.

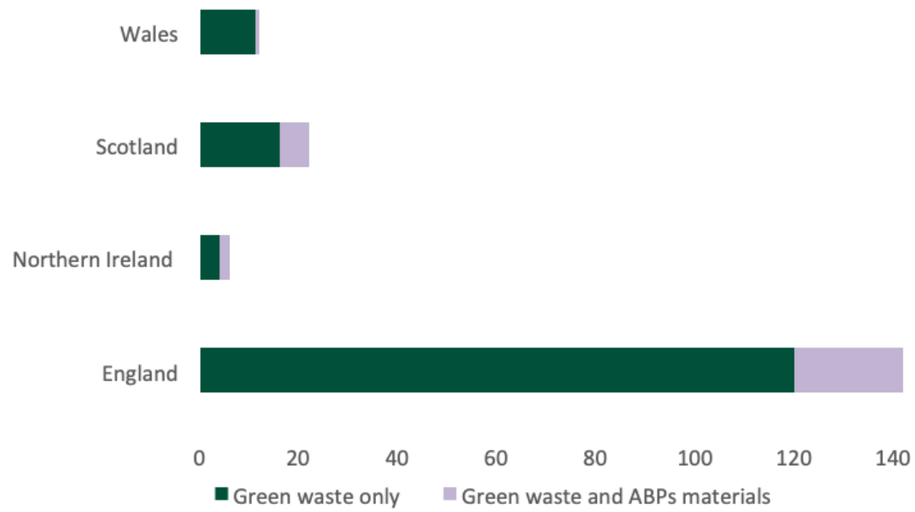


Figure 5 Number of certified processes and feedstock per country

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 2019. Approximately 2,426,000 tonnes of green waste only were being processed by sites in England, 150,000 tonnes in Scotland, 117,000 tonnes in Wales, and 85,000 tonnes in Northern Ireland. Approximately 770,000 tonnes of green waste and ABPs materials was being processed annually by sites in England, 212,000 tonnes in Scotland, 10,000 tonnes in Wales, and 156,000 in Northern Ireland.

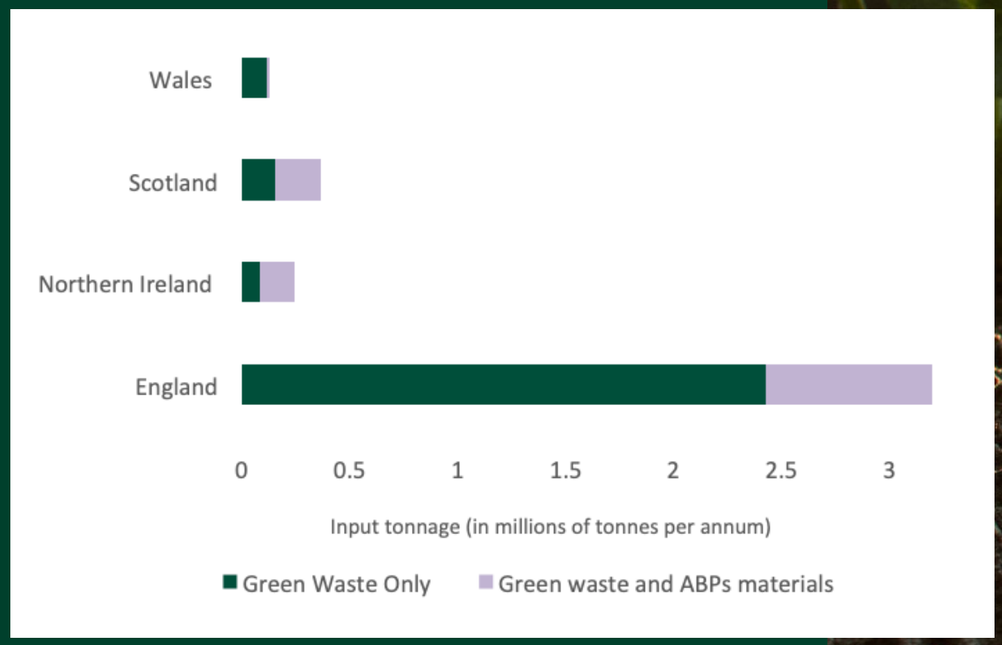


Figure 6 Annual input tonnage and input type per country

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 2019. Approximately 1.6 million tonnes of quality compost were being produced annually by sites in England, 62,000 tonnes in Wales, 177,000 tonnes in Scotland and 123,000 tonnes in Northern Ireland.

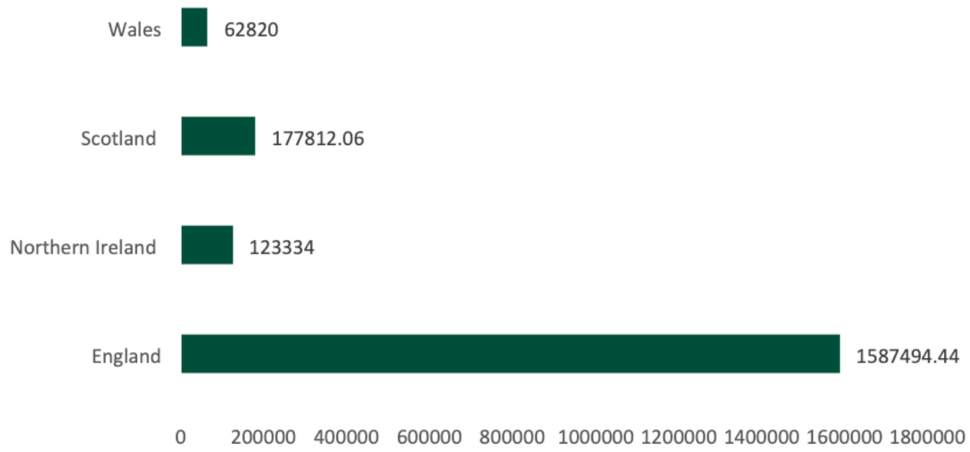


Figure 7 Annual tonnage of quality compost produced per country

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 2019, 95% of principal grade compost (certified product) was recorded as soil conditioner, 2% mulch, 2% growing medium ingredient, < 1% landscape blend and < 1% manufactured topsoil ingredient.

* The definition of principal compost grade in clause 3.54 of PAS 100 states: 'grade of compost for which PAS 100 conformance is claimed, or intended to be claimed, normally the one that is composted for the shortest total time and includes sufficient particles less than 2 mm to support plant germination and growth.'

Markets

The end market sectors for all certified compost processes were recorded throughout 2019. Figure 8 demonstrates that 52% of certified processes were producing quality compost supplied to the agriculture and soil-grown horticulture markets, 24% to domestic or professional horticulture markets, 23% to land restoration, and 1% to forestry. Out of 182 total certified composting processes we had market data for at the beginning of 2020, 94 were supplying compost to a single market category, 57 to two markets, 29 to three markets, and two to all four markets.

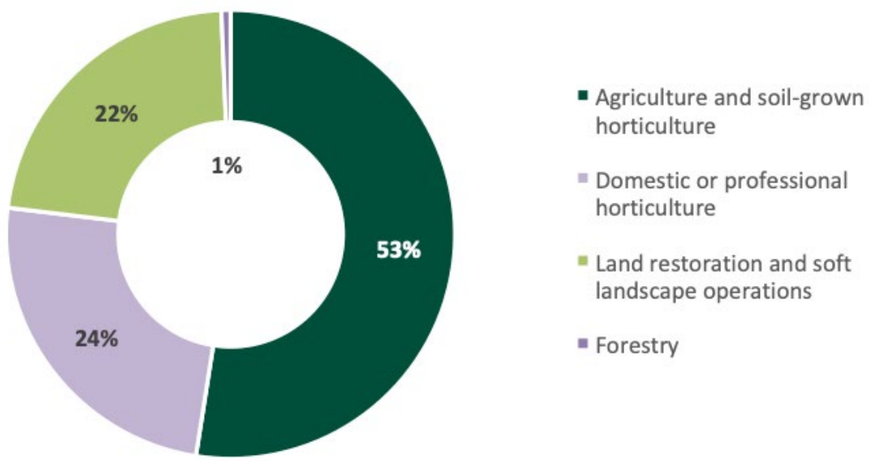


Figure 8 End markets of a portion of certified compost producers

Figure 9 shows the number, in percentage, of different market sectors per country that quality compost is being distributed to. If producers in a country are 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.

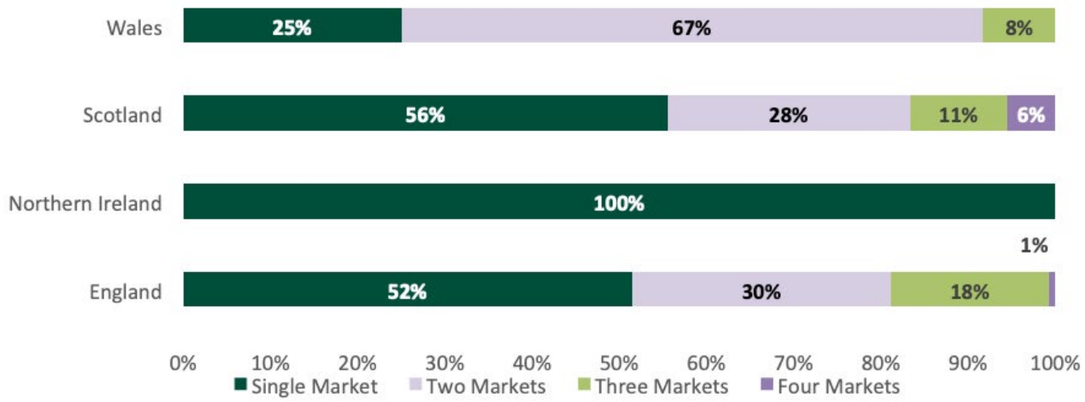


Figure 9 End markets of compost per country

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. 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'.

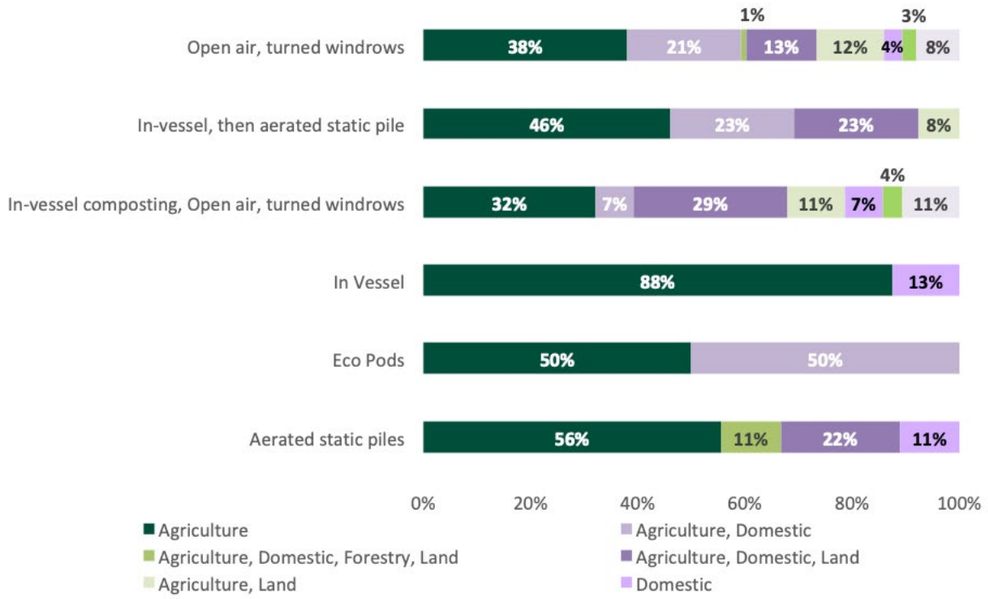


Figure 10 End markets per process type

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 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 84 plants certified under the BCS by the end of 2019, with a total registered annual throughput of approximately 4.5 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 (31% of the total). The category with the least number of producers was comprised of those processing up to 6000 tonnes of organic waste per annum (2% of the total).

Figure 11 shows that most certified plants were in England (74%). Of the 84 certified plants, 62 were in England, 11 in Scotland, eight in Wales, and three in Northern Ireland.

4.5 million tonnes

84 certified plants

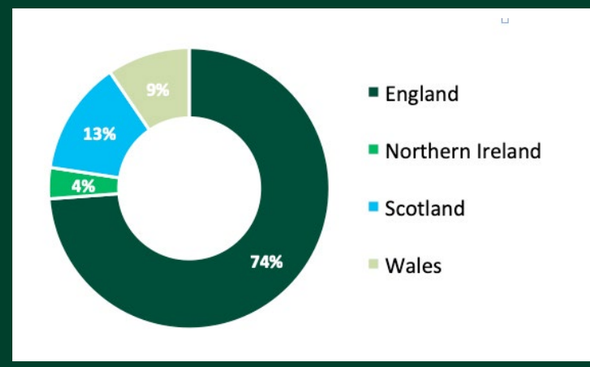


Figure 11 Percentage of certified plants per country

In 2020, data was collected from the environmental regulators on the permitted/licensed AD sites in each country in the UK. We used this data to calculate the proportion of certified sites in the UK at that time (May 2020 or July 2020).

In May 2020, 40% of sites with waste permits and 9% of sites with waste licences in Northern Ireland were certified through the BCS. In Wales, 64% of all bespoke sites were certified through the BCS.

In July 2020, 63% of sites in Scotland with PPC permits were certified. In England, 26% of all sites with biowaste treatment sector permits covering AD/biogas as an activity were certified.

These percentages are based on the table of data below. The total number of sites in England with permits for AD/biogas are biowaste treatment sector sites. The data table includes the number of certified sites with other permits/exemptions (e.g. food and drink sector), however, it does not include the total number of sites in England with other permits/exemptions where AD/biogas is not the primary activity.

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	- 5 with waste permits - 35 with waste licences	- 2 with waste permits - 3 with waste licences	- 0
Wales	- 14 bespoke (waste or installation)	- 9 bespoke (waste or installation)	- 0
Scotland	- 8 with PPC permits	- 5 with PPC permits	- 6
England	- 234 with biowaste treatment sector permits	- 60 with biowaste treatment sector permits	- 3 with permits in other sectors including AD/ biogas as an activity

Contains Environment Agency information © Environment Agency and/or database right

Feedstock and output

Feedstock materials processed by certified plants vary. Data recorded in the BCS database shows that all AD facilities accept input materials 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 per country. Approximately 3.4 million tonnes of organic waste were being processed annually by certified plants in England, 186,000 tonnes in Wales, 880,000 tonnes in Scotland, and 105,000 tonnes in Northern Ireland.

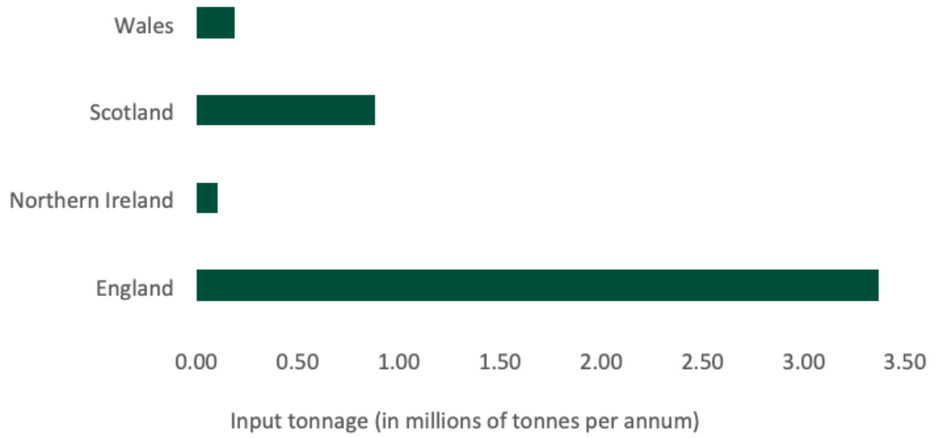


Figure 12 Registered annual throughput per country

Figure 13 shows the certified digestate outputs produced from BCS plants, in percentages. Many facilities produced certified whole digestate and 18 plants produced more than one type of output. In total, 49 plants were producing certified whole digestate, 14 producing certified separated liquor, and three producing certified separated fibre.

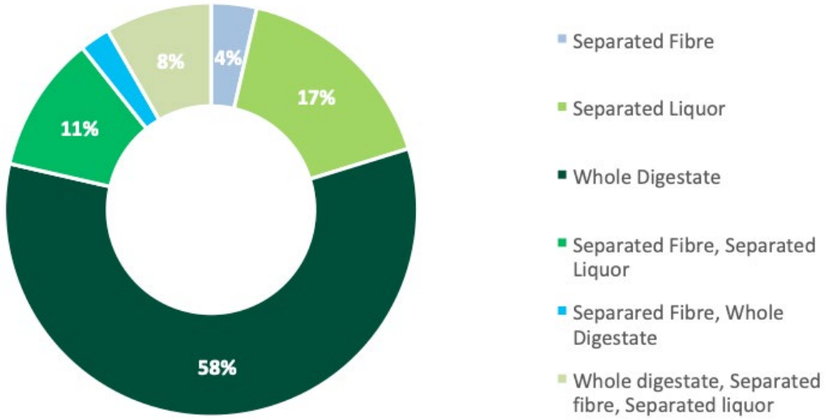


Figure 13 Percentage of certified plants producing different certified digestates

Figure 14 shows the percentage of plants producing various types of certified digestate in each country of the UK. A variety of output types were produced in each country, with whole digestate being favoured in most countries, except for Wales, where 75% of digestate produced was separated fibre.

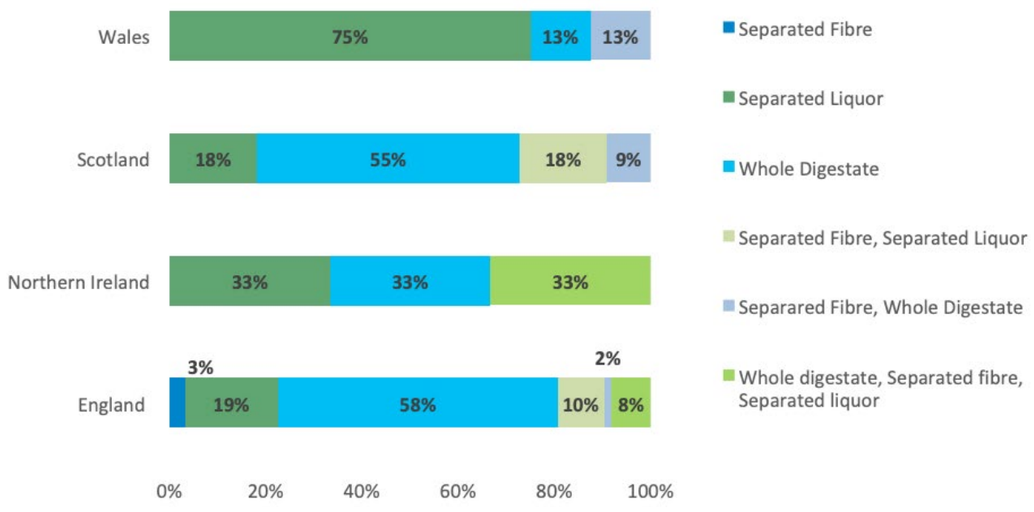


Figure 14 Percentage of certified plants producing certified digestate per country

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 2019, which are summarised below.

PAS 110 review and PAS 110 survey

REAL initiated a review of PAS 110 in 2018 which continued throughout 2019. In May 2019, REAL issued a survey to all BCS operators to ask 'Do you think there is a need to initiate a PAS 110 revision process in the near future?' and gave operators the opportunity to provide any additional comments. The survey results were compiled and analysed by REAL and later presented to the Technical Advisory Committee for discussion.

UKAS accreditation progress

Further progress was made with working towards the development of the CCS Pilot Programme for the Certification Bodies to become accredited to ISO 17065 for the CCS. REAL facilitated discussions between UKAS and SEPA to address UKAS' questions and comments on SEPA's Regulatory Position Statement for Compost. REAL also obtained information from the Certification Bodies on compliance with the CQP to feed back to UKAS and input into the CQP call for evidence consultation.

BCS database

The REAL BCS database was developed to incorporate PAS 110 test results generated for certification purposes. The BCS Certification Bodies only have access to the test results for the producers they certify and only test results uploaded to the database will count towards certification.

Market Development Working Group

The first two meetings of REAL's Market Development Working Group (MDWG) took place in 2019. This group was set up to provide industry with the opportunity to build and develop new and existing markets for quality compost and biofertiliser. The MDWG liaise with the markets for certified compost and digestate, the environmental regulators, the Research Hub, certified compost and digestate producers, and report to REAL's Technical Advisory Committee. The MDWG set an agenda for work in 2019, which included meeting with the Soil Association, and running a survey for CCS and BCS operators as an evidence-gathering exercise to feed into the QP review processes.

Quality Assurance

In 2019, the new version of the CCS and BCS Scheme Rules introduced a third category of certification. The 'Quality Assurance' category provides the opportunity for operators to join the schemes for quality assurance purposes only. If digestate or compost producers do not require or do not wish to attain 'end-of-waste' status, they can apply to the scheme for certification to PAS 100/110 and the Scheme Rules. Certification will assure a well-managed process and a safe, good quality compost or digestate without the need to achieve 'product' status.

Position on Technical Requirements

REAL updated the CCS and BCS Position on Technical Requirements documents. These are the accompanying documents to the CCS and BCS Scheme Rules. The purpose of the Position on Technical Requirements documents is to provide clarity on specific technical requirements within the scheme documents and ensure consistency in the interpretation of these requirements. These positions were discussed and agreed with all the appointed Certification Bodies.

Laboratory audits and T&C's revision

In summer 2019, the CCS Approved Laboratories went through their fifth round of annual audits and BCS Approved Laboratories through their third round of audits. This was the first combined BCS and CCS audit process with the laboratories being assessed against a new set of Terms and Conditions.

The CCS and BCS Terms and Conditions for Approved Laboratories (T&C's) were revised in autumn 2019 to reflect the development of the Laboratory Approval Scheme (in place from January 2020). The T&C's introduced additional requirements for UKAS accreditation and a focus on 'scheme-specific' tests for the independent audits.

Independent Laboratory Auditor Tender

REAL ran an open tender in autumn 2019 for the appointment of a new Independent Laboratory Auditor. The tender called for one or several independent auditors to provide independent checks of the Approved Laboratories for conformance with the Laboratory. Following this tender, REAL managed an evaluation and interview process at the end of 2019 and appointed a new auditor.

CCS Sampling Guidance

REAL updated and issued a new version of the CCS sampling guidance, which replaced the previous 'Guidelines on Sampling Compost' document, issued in 2012. The sampling guidance was updated from the previous document to reflect and include changes made to PAS 100, as well as changes to the British Standard BS EN 12579. The document intends to guide operators to take representative samples of their compost and ensure consistency of sampling.

CCS Sampling Workshop

REAL ran a half-day sampling workshop near Edinburgh in October 2019 for composting site operators and staff. This workshop was based on REAL's sampling guidance. It had a three-part structure starting with an introduction to the sampling guidance, followed by a demonstration of on-site sampling and ending with discussion on how to develop site standard operating procedures to support a consistent approach to sampling.

Annual Report 2018

REAL published the second combined Annual Report of the Compost and Biofertiliser Certification Schemes. The report provided an overview of both schemes in 2018 using data representing the status of the schemes by the end of 2018. The report also included information regarding the Compostable Packaging Certification Scheme and the Green Gas Certification Scheme, both owned and administered by REAL.

The Research Hub Annual Report 2019

About the Research Hub

The Research Hub was established in 2018, and 2019 was the first full year of its operation. The Research Hub is part of the Compost Certification Scheme (CCS) and Biofertiliser Certification Scheme (BCS), both of which are administered by Renewable Energy Assurance Ltd (REAL). REAL is a wholly owned subsidiary of The Association for Renewable Energy and Clean Technology. It carries out a range of certification and consumer protection activities.

The CCS 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. The BCS 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 used for the digestate certified under the BCS.

REAL recognised that there was a need for new, accessible research to support innovation and revisions to the CCS/BCS and the standards they rely on (BSI PAS 100 and PAS 110). These standards, and their associated laboratory test methods, must be reviewed and updated on a regular basis to reflect evolving legislation, the latest scientific evidence and good practice.

In view of this, in cooperation with the members of the CCS/BCS Technical Advisory Committee (TAC), and in discussion with industry, REAL designed The Research Hub as a mechanism for fulfilling these objectives. REAL intends that evidence generated through the funded research projects will underpin the long-term competitiveness and growth of the sector. The Research Hub is funded by contributions from CCS/BCS operators. The funds are ring-fenced.

Governance of the Research Hub

REAL set up the Research Hub Governance Committee to review the Research Hub's development and manage the funds. The Governance Committee meets three times a year. The members of the Governance Committee are:

- **Michael Chesshire (Chair)**
- **Virginia Graham**
- **Justyna Staff**
- **Stephen Lister**
- **Toyin Owadayo**

REAL also set up a Research Panel to ensure that the Research Hub meets its objectives in an efficient and effective manner. The Research Panel is responsible for deciding which research projects the Research Hub will fund. Once selected, it is responsible for overseeing the management of each research project. The Research Panel consists of independent stakeholders with expertise in the composting and anaerobic digestion sectors including representatives from the Environmental Regulators, Government, Trade Bodies, and the BCS/CCS operators.

The Research Hub Project Selection Process

A clear and transparent process has been set-up for the annual selection of research projects, as follows:

I. In January, REAL circulates a call for research ideas among CCS/BCS operators and the wider industry.

II. In April, the Research Panel evaluates the research proposals submitted and draws up a shortlist of projects.

III. In May, REAL invites CCS/BCS operators to score each shortlisted project by means of a SurveyMonkey poll and to provide comments, should they wish.

IV. In June, the Research Panel meets again to determine which project should be selected for commissioning, taking account of the SurveyMonkey results, and sets up a Project Management Team.

V. In July, the Project Management Team draws up a Project Brief for the selected project and announces the chosen project to BCS/CCS scheme operators and the wider industry.

VI. In September, REAL issues an Invitation to Tender for contractors to carry out the research.

VII. In November, the Project Management Team evaluates the responses to the Invitation to Tender received and decides which should go forward for interview. Following the interviews, and taking everything into account, the Project Management Team recommends the successful bidder for the research project.

VIII. In December, the contract is awarded to the successful bidder.

The first project of the Research Hub

The first project selected for funding by the Research Hub is "The development of a Research Library for the Organics Recycling industry". NNFCC (The Bioeconomy Consultants) was selected to carry out the research through a competitive tender process. The Research Library will be an informative and valuable resource for both the composting and anaerobic digestion industries. Its establishment will help prevent the duplication of research in future and in this way ensure the best use of research funds. As such the Research Library will shape and inform the objectives of future research projects selected for funding by the Research Hub.

You can find further information on the project within the Research Hub website here: (www.realresearchhub.org.uk) .

Research Hub Funds

The total funds available for research projects in 2019 was £139,034. The first project of the Research Hub will cost £68,674. The contract for the first project of the Research Hub was agreed at the beginning of 2020 and therefore the total amount of funds carried forward from 2019 into 2020 was £139,034.

REAL

RENEWABLE ENERGY ASSURANCE LIMITED

Registered in England and Wales
Company No. 05720606
Brettenham House
2-19 Lancaster Place
London
WC2E 7EN