

Organics Recycling & Biogas

Autumn 2020 Issue 46

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Odour-control systems

The quarterly members' magazine from REA Organics and Biogas



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Welcome

Kiara Zennaro, Head of Biogas

Jenny Grant, Head of

Organics and Natural Capital



Well, 2020 doesn't seem to be letting up much. We hope you are well, and have managed to enjoy some time off over summer. As we write, we are facing new restrictions due to the pandemic. And, whilst we are disappointed about the social aspect, we very much hope that the impact on your business is minimised.

It's been a season of consultations, with plenty to keep us busy. Page 7 gives a summary of those we've responded to already. There are lots of changes in the pipeline, with some challenges for organics recycling sites, including the operational requirements to meet the Best Available Techniques.

There have also been some positive announcements from the government: in particular, BEIS consultation on the future Green Gas Support Scheme showed a commitment to support biomethane. The government followed these announcements with another important consultation on the mechanism for funding the Green Gas Support Scheme – the so-called Green Gas Levy.

We are anticipating the response to the Quality Protocol review from the Environment Agency; we believe it will say that the EA no longer supports the Compost or AD Quality Protocols as they stand, and that they need revision; industry will be expected to pay for it. We are planning to organise a workshop to discuss the changes and look at the evidence following the EA's response.

We've been engaging with Defra and BEIS on your behalf on a number of issues, and we are also participating in WRAP's organics roadmap. This is a group set up to find ways to protect the environment and deliver quality outputs (compost and digestate) that are valued in their markets.

We'd be happy to hear from you if you'd like more information on what we're doing, or if there's anything we can help you with. And we hope you enjoy the magazine!

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Organics Recycling & Biogas is the magazine of REA Organics and REA Biogas member forums

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2-19 Lancaster Place,
London
WC2E 7EN

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ISSN 2041 - 2169

Printed by Pensord Press
Printed on Revive 100% recycled

Published by
Resource Media Limited
CREATE Centre
Smeaton Road
Bristol
BS1 6XN
resourcemedia.co.uk

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Government to set legally binding waste targets



Defra is set to introduce legally binding targets for waste and other environmental issue areas as part of the government's Environment Bill.

Announced on 19 August, the bill will introduce at least one long-term target in four priority areas – waste, air quality, biodiversity and water – to improve environmental outcomes in these areas and support the government's ambition to 'build back better' in its plans for economic recovery in the aftermath of the coronavirus pandemic.

The government's potential waste targets will focus on increasing resource productivity and reducing the volume of residual waste and plastic pollution produced in the UK, with a view to supporting the policy aims of the Resources and Waste Strategy.

The government will be required to periodically review its targets every five years, carrying out a Significant

Improvement Test, which would assess whether meeting the long-term targets set would "significantly improve the natural environment in England".

Environment Secretary George Eustice said: "The targets we set under our landmark Environment Bill will be the driving force behind our bold action to protect and enhance our natural world – guaranteeing real and lasting progress on some of the biggest environmental issues facing us today."

"I hope these targets will provide some much-needed certainty to businesses and society, as we work together to build back better and greener."

Businesses, communities and civil society will be invited to share their views on the targets once they are proposed in a public consultation expected in early 2022.

UK to adopt EU circular economy targets

The UK Government is expected this autumn to commit to a 65 per cent municipal recycling rate by 2035 after it announced it would be transposing the vast majority of the EU's Circular Economy Package (CEP) into UK law.

The UK CEP will replicate almost all of the EU's CEP, passed into law in June 2018, including a limit of 10 per cent municipal waste to landfill by 2035, a ban on separately collected waste going to landfill or incineration, and restrictions on the materials that can be sent for landfill or incineration.

The government states that bringing over the CEP into UK law will build on its commitments to be a world leader in environmental legislation, building on commitments made in the Resources and Waste Strategy, 25 Year Environment Plan and Environment Bill to make the UK a resource-efficient, high-recycling nation.

Commenting on the announcement, Environment Minister Rebecca Pow said: "We are committed to increasing our recycling rates and reducing the amount of waste that is sent to landfill to create a cleaner waste industry and reduce carbon emissions.

"Through our landmark Environment Bill, we will be bringing forward a raft of measures to do just that, and this new Circular Economy Package takes us yet another step forward to transforming our waste industry."

The UK Government's decision ends the uncertainty over whether the UK would fulfil its commitment to bring over the CEP into UK law after Brexit.



CCS and BCS auditor Greg Anderson

We are very sad to let you know that Greg Anderson tragically passed away on 14 August after being involved in a car accident. Greg was well known to many compost and AD operators, as he had been an auditor for NSF for many years. He was a lovely man, well liked and much respected. We will miss him, and our thoughts are with his family and friends.



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EA announce permits delays

Jenny Grant

The Environment Agency (EA) has announced a delay to the planned review of permits from certain sectors. Due to the impacts of Covid-19, the agency is experiencing a significant backlog in permitting work, which includes applications made by operators for proposed new or expanded operations.

In order to aid economic recovery, support green renewal and enable the country to restart, the EA has decided to focus its resources on this permitting work. It aims to have the backlog cleared by Christmas. Work to review permits will recommence as soon as

possible, and we will keep you updated on the situation.

As a reminder, alongside the standard rule permit consultation, the EA has been issuing Regulation 61 notices to biowaste (compost and AD) treatment sites with installation permits since July 2019, and the work is ongoing. These notices require operators to demonstrate how they are complying with the Best Available Techniques (BAT) requirements in the Waste Treatment Best Available Techniques reference documents (BREFs), and operators have until August 2022 to comply. Once the operators have responded, the EA will vary the permits. These reviews have been slowed due to the focus on tackling the permit queue.

BEIS gives extension to projects non-eligible for Tariff Guarantees under the RHI

In the previous edition of *Organics Recycling & Biogas*, we told you that the UK Government had issued an extension to the commissioning deadlines for projects with Tariff Guarantees.

Since then, in response to extensive lobbying from REA and industry – including a letter from REA to BEIS Minister of State Kwasi Kwarteng MP – the government has also announced plans to bring further changes to the Non-Domestic RHI scheme to benefit smaller projects that are not eligible for Tariff Guarantees.

Specifically, these changes are being brought forward in order to aid projects that are non-Tariff Guarantee (TG) eligible, which have invested capital into project development and will not be able to accredit to the scheme prior to its closure in March 2021.

The changes follow several concerns raised by industry to BEIS that there are projects that would likely struggle to apply for accreditation before the Non-Domestic RHI scheme closure deadline of 31 March 2021, as a result of delays related to Covid-19.

These projects will now have an additional six months after scheme closure (on or before 30 September 2021) to submit a full application for accreditation, providing that they submit an extension application to the scheme during a window opening in March 2021.

Evidence to support an extension application must be provided no later than 31 March 2021, and should be as complete as possible. This evidence will also need to show that the project was under development prior to 17 August of this year.

The REA welcomed these additional changes, but also put the case across for a 12-month extension to bring the Non-Domestic scheme in line with the Domestic RHI.

Among other points, we also highlighted that the proposed extension must be accompanied by the swift and pragmatic processing of applications by Ofgem. For further details, please visit: www.r-e-a.net/resources/government-announcement-to-help-non-tg-eligible-projects-affected-by-covid-19.

REA strategy

Dr Nina Skorupska CBE
Chief Executive,
REA



In 2021, the REA will enter its 20th year of supporting members in delivering the renewable energy and clean technology solutions that this country desperately needs. It feels all the more significant as we now, to quote our current Prime Minister, finally embrace a “green Industrial Revolution”.

At the REA, we are updating our strategy. While our vision has always been “a future built on renewable energy and clean technology”, our strategy will be one based firmly on the premise that, with the technologies and capabilities of our members, we can deliver net-zero GHG by 2050 based on 100 per cent renewable energy and clean technologies across power, heat and transport. At the same time, critical to our plans will be preserving our natural capital with a circular economy.

We are currently working through the strategy’s important ‘pillars’ – power, heat, transport and the circular economy – to identify ambitious and evidence-based milestones, such as when renewable energy and clean technologies surpass the need for reliance on unabated fossil fuels and other forms of energy that are detrimental to society.

While steering the delivery of a strategy over the next few years can be more an art than a science, I am keen to be clear that the ambitions we share on behalf of our members are based on science and facts.

Many of our member organisations are engaged across more than one of our pillars – either delivering the solutions we desperately need or ensuring that they themselves tread with a very light carbon footprint. I hope to share more of our work in this area in forthcoming editions of this important magazine.

Consultation roundup

Jenny Grant,
Head of Organics
and Natural
Capital, REA



It's been a hectic few months with consultations, and we still have a few to respond to at the time of writing. Thanks very much to those members who have provided invaluable input and feedback on our draft responses. We've listed below the ones that we've responded to, and those that are still open. Copies of the consultation responses can be found on the REA website; or you may contact jenny@r-e-a.net for more information.

Responses submitted:

- Discussion on the "Future Recycling and Separate Collection of Waste of a Household Nature in Northern Ireland";
- Consultation on reforms to tax on red diesel;
- REAL's Compost and Biofertiliser Certification Scheme Rules;
- Compostables in WRAP's UK

- Plastics Pact headline targets;
- EA's guidance on the appropriate measures for biowaste treatment;
- HMRC's Plastic Packaging tax;
- Defra's Environment Land Management Scheme (ELMs);
- Defra's Peat Strategy for England policy discussion document;
- EA's Fire Prevention Plan guidance;
- The government's White Paper on how the UK's internal market will operate after the Brexit transition period;
- BSI consultation on draft PAS9017 Biodegradation of polyolefins in an open-air terrestrial environment - standard;
- BEIS consultation on future support for low-carbon heat, including the future Green Gas Support Scheme, and on the closure and future-proof of the Renewable Heat Incentive.

Open consultations:

- The waste management plan for England;
- Reducing single-use plastic in Wales.

Appropriate measures for biowaste treatment consultation

This consultation sets out the measures that all biowaste treatment sites (i.e. composting, AD, MBT, sewage sludge) and storage of composts and digestates in England will have to comply with. It applies to both new and existing facilities.

Our response to the consultation – whilst broadly supporting the aims to improve environmental performance – highlighted several issues. The concerns we set out were mostly related to clarity, consistency, and cost of implementing the measures; we also raised detailed concerns about some of the technical requirements.

We supported the risk-based approach, where size, operations, location and impacts are considered when assessing what measures are appropriate. We highlighted the need for the requirements to be introduced and

implemented at the same time across the industry, regardless of the type of permit a facility has, to ensure that there is a level playing field.

We called for clarity around the legal basis for changes, i.e. the change in requirements in this guidance; and whether the change in permit conditions will enable operators to revisit existing contracts where their conditions conflict with the new requirements.

The need for clarity on covers was also highlighted. Covering of windrows or storage bays in many cases is impractical, could introduce Health and Safety issues, and may mean that material is less likely to be monitored and managed appropriately. The cover solution must be driven by risk assessment /odour assessment, which includes information such as location, receptors and current operations.

REA submits response to DfT Call for Ideas to decarbonise transport

Dr Kiara Zennaro
Head of Biogas



In July this year, the Department for Transport published a Call for Ideas about the next steps to reducing emissions in transport and creating a decarbonisation plan to ensure that UK transport is net-zero in emissions by 2050.

The REA submitted a comprehensive response to the consultation, highlighting that the decarbonisation of transport is a significant challenge. It has become the highest carbon-emitting sector of the economy and encompasses some of the most difficult areas to decarbonise: aviation, heavy road freight and maritime. The technical and investment challenges in getting from where we are now to net-zero carbon emissions require disruptive thinking and coordinated response from the government, society, industry and the investment community. The REA believes that this represents a major economic opportunity for the UK, and that a multi-technology approach will be critical.

We strongly emphasised that sustainable renewable fuels such as biomethane, biodiesel, bioethanol and biopropane are available today, and there is a huge opportunity to unlock further potential in their development and use as road transport decarbonisation tools in the short and medium term.

We also believe that electrification, hydrogen and renewable transport fuels have a key role in sectors including rail, buses, coaches and heavy goods vehicles as we transition towards net-zero transport. You can download the full response at www.r-e-a.net/resources/final-re-a-tdp-response-sept-2020.

Do the environmental benefits of the EA's appropriate measures guidance justify the economic impacts on organics sites?

Emma Cheetham,
Technical Director,
Elleteq Ltd



In the guidance, the word 'must' occurs 961 times, and as a Permit Operator and COTC holder, that makes me sweat!

However, there is a chink of light, in a paragraph that states: "Some measures may not be suitable for, or relevant to your operation, appropriate measures will depend on the activities being carried out, the size and nature of the activities, and the location of the site."

No two sites are the same, with differences ranging from infrastructure and inputs to weather, equipment and management techniques. Our site permissions (including planning) set out the conditions we must follow. Plus, many of us also operate under a Quality Protocol.

Following the Appropriate Measures

guidance will generate costs such as covering windrows or reception bays. And past experience has shown that whilst these measures may solve one problem, they may generate others, such as biological inefficiencies, or increased workplace hazards.

If an operator manages permit parameters appropriately, has a history of zero scores on their Compliance Assessment Reports, no complaints, and has accountable operational procedures, then the words 'relevant to your operation' should apply. But if a site is a poor performer with substantiated complaints, then change must happen – and quickly – starting with a robust investigation to pinpoint the breach source, followed by application of corrective 'Best Available Techniques'.

I'm not convinced that the guidance will be effective. It's complex, and many of us operators are struggling to establish which 'appropriate measures' are actually being asked for, and more importantly, why?

Graeme Kennett,
360 Environmental



I've been in the waste sector long enough to know that when things go wrong, they can go wrong in a very expensive manner – and usually at the most inopportune time. We all know how much resource can get soaked up by accidents, incidents and permit non-compliances. These non-compliances are given in response to permit breaches that are defined by EA as having an impact, actual or potential, upon the environment or sensitive receptors.

The Appropriate Measures (AM) guidance outlines what should be in place to prevent accidents and incidents from impacting upon the environment and sensitive receptors, by means of physical measures, such as lagoon covers, to ensuring staff are properly trained in their roles and the possible impact that can have on permit compliance.

However, the sector should not be expected to carry this burden itself, and it needs to be acknowledged that higher gate fees, especially for compost sites, will need to be in place. From local authority-generated greenwaste, this will have to be met from central funds, as the aims of AM are aligned with the government commitment "to deliver the most ambitious environmental programme of any country on earth".

The biowaste sector is critical to the closed-loop circular economy that not only supports agriculture but also helps reduce fossil-fuel use and the impact upon climate change emissions. As such, the sector should stand alongside the government commitment and look to implement AM. Can it afford not to?

Andy Sibley,
Managing Director,
Envar Composting



There is little doubt that any compost operator welcomes the new guidance. We all want to protect the environment and ensure that our activities are adhering to the best available techniques.

However the Environment Agency need to ensure that they act reasonably in the implementation of the new changes, some of these will mean substantial capital investment on sites that was not foreseen or budgeted for.

There needs to be a longer time period than is currently suggested for those effected to either try and recoup the investment through

higher gate fees or restructure their business so they remain profitable.

Inevitably this will lead to operators that do not have the resource to either invest in or understand and comply with the new guidance calling it a day on composting.

Secondly and more importantly the Environment Agency needs to ensure that there is a level playing field from day one, by implementing the changes on some but not all operators will and has put some at an unfair competitive advantage.

With feedstock tenders typically around for two or three years those composting businesses already working to the new guidelines will have their operating costs substantially higher than those who have not and those now tendering will be on two different operating cost levels.

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Biogas must support industrial emissions reduction

With carbon reduction at the top of the environmental agenda, Richard Gueterbock, an adviser on industrial bioenergy for FoodChains, explains how biogas and biomethane can contribute to carbon-emission reduction through on-site AD location and use as vehicle fuel.

Richard Gueterbock

Industrial Bioenergy Adviser, FoodChains



As we continue to deal with the Covid-19 pandemic while addressing the challenges posed by the climate emergency, industry is re-evaluating its use of natural resources. Creating a more circular economy across the agri-food sector will require the redesign and re-engineering of industrial processes and production activity. This includes capture and reuse of biowaste streams and novel approaches to bio-transformation of process residues.

The government is calling for innovative, shovel-ready projects to support a Covid-19 green recovery. The biogas sector must show policy advisers and ministers in key government departments (BEIS and Defra, but also the Treasury) that it can contribute to a long-term fall in emissions, including support for transition to carbon neutrality in hard-to-decarbonise sectors like freight and farming.

Anaerobic digestion (AD) is able to support the development of a more circular economy. Comments from ministers are supportive of clean tech, the circular economy and industrial decarbonisation. Government language is full of phrases like 'green recovery', 'post-Covid-19 sustainable investment' and 'build back better'. However, the current policy framework is confused and inadequate.

The reality is a lack of clarity and a failure to work with industry to deliver more radical emissions reduction. Policy has become increasingly muddled since the termination of the Feed-in Tariff (FIT) regime, with confusion over the RHI Covid extension

and doubts over biogas in the Green Gas Support Scheme.

Raw biogas (e.g. from food-processing residues) can provide low-carbon heat for factory sites, or heat networks and compressed biomethane (CBM) can be used as fuel for farm vehicles and HGV trucks.

Smaller-scale biogas must be included in future green gas support. We need a policy framework that:

- Fully supports biogas at all scales under the proposed Green Gas Support Scheme;
- Is accepting of the wider benefits AD offers in terms of resource and land management;
- Offers support for farmers and SME food companies with the transition to Carbon Net Zero; and
- Includes on-site biomethane production from bio-residues in the UK's proposed Transport Decarbonisation Plan (TDP), boosting supplies of low-carbon fuel to the agri-food sector.

We need to develop AD systems that are easier to operate and do not distract from primary production

Rethinking how food and beverage products are produced, processed and transported must include replacing fossil fuel in farming activities like cultivation and harvesting. Biogas and biomethane from bio-residues will support the initial stages of farm and factory transition to carbon neutrality.

Biogas on industrial sites

Converting such residues to on-site bioenergy, including biogas, must be an integral part of the food sector's plans to achieve Carbon Net Zero by 2050 (2045 in Scotland). Some companies

are setting the pace by re-engineering their factory sites to cut emissions.

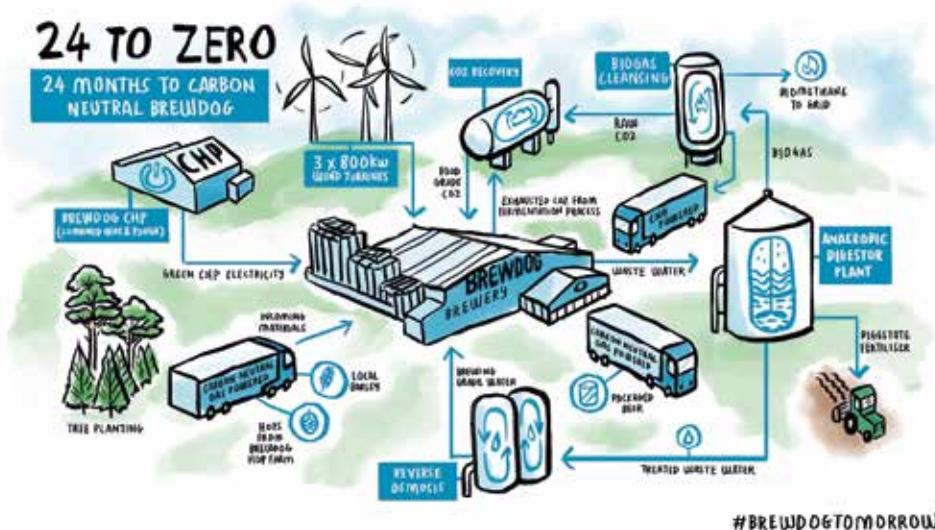
One such company is Scottish brewer Brewdog, which has ambitious plans for its brewery to become carbon neutral by 2022. Brewdog is investing in on-site biogas production, using brewery residues to fuel production and product distribution.

Elsewhere, agri-food residues are still being processed and treated in outdated aerobic systems that consume fossil fuel, ignoring their bio-energy potential. Infrastructure for by-product treatment is a major overhead for the food sector. AD offers an ideal solution for treating agri-food residues.

Installations can range from simple plants handling cow slurry through to complex systems on large factory sites. But we need to develop AD systems that are easier to operate and do not distract from primary production. Meanwhile, modular plant design should help with systems for smaller SME sites.

Biogas technology applied on factory sites can be used to extract bioenergy from process residues. Three different anaerobic systems have been installed in the UK agri-food sector in recent years:

- **Higher Solids Digestion.** Primarily municipal-type digesters for biodegradable feedstocks diverted from landfill or farming residues and higher-solids food or farm residues.
- **Liquid Digestion (some solids).** For liquid materials containing biodegradable solids, the stirred treatment reactor is the best solution, optimising COD removal and gas output.
- **Liquid Digestion (no solids).** For degradable liquids with low levels of suspended solids, the best option is the widely used up-flow anaerobic sludge blanket (UASB) system.



On-site digestion is an ideal way to handle liquid residues from food and beverage processing sites. Biogas from by-products will deliver significant, long-term carbon savings. The most efficient AD plants have just three outputs: biogas for use on-site; residual bio-solids (with a nutrient value to local farms that supply raw materials); and cleansed water for re-use or discharge.

Bioenergy from processing residues is a circular solution. Brewdog's biogas project will supply a large proportion of site energy needs. The uses for biogas include power generation, process heat supply and commercial vehicle fuel. Also, the brewery will replace imports of industrial-grade CO₂ gas.

With unexploited potential for the conversion and use of process residues, the SME businesses that predominate in the agri-food sector will need help to invest in on-site bioenergy. Process residues from factory sites can provide an on-site supply of clean energy, but we need to be more innovative in how this energy is used, and develop carbon pricing to incentivise installation on factory sites.

Biogas for product haulage

Existing AD facilities can be adapted to convert biogas into negative-carbon compressed biomethane (CBM). Supplies of biomethane in locations independent of a gas-network connection can be used to fuel HGVs or farm vehicles without the need for large-scale upgrade installations.

Transport is a significant source of greenhouse gas (GHG) emissions. Use of electric-power HGVs in decarbonising heavy haulage is

compromised by payload and range concerns. Commercially, green hydrogen fuel is over a decade away. Deployable now, CBM will deliver immediate carbon savings.

Biomethane as an HGV fuel offers an immediately available, ready-to-deploy diesel replacement. Multiple smaller upgrade units across the UK can reduce reliance on fossil fuels for hauling raw materials (grain or milk) and food products (from beer to ready meals). Upgrading just 60 cubic metres per hour of biogas will fuel five HGV trucks on a long-term basis.

Deploying modular upgrade plants on existing biogas sites will provide rural-access low-carbon HGV fuel. Building modular refuelling sites in rural areas with an ample existing supply of biogas will complement larger network-connected centralised gas fuelling stations.

CBM will reduce carbon emissions of a 42-tonne laden HGV by 80 per cent, compared to less than 20 per cent when using CNG (compressed natural gas from the grid). Grid-connected fuelling sites involve significant capex and high vehicle flow locations. Off-grid CBM is free of these constraints.

Biomethane-fuelled HGVs are available now. A two-year trial by Cenex (with Euro VI factory-fitted gas HGVs) reported that 100 per cent biomethane vehicles saved circa 81 per cent in well-to-wheel GHG emissions compared to diesel vehicles. For the 20 vehicles, this was equivalent to displacing 16 diesel trucks.

Upgrading biogas on existing AD sites can provide fuel for farm tractors or HGV trucks without using the gas grid.

Most existing biogas plants are not located close to gas-network injection points. By converting a proportion of biogas output to CBM, off-grid, modular upgrade plants can supply fuel for local HGV operators for tasks like delivering feedstock to AD sites or collecting milk from farms.

Biogas and carbon targets

As the world moves from wasteful, linear, disposal-based systems to more circular resource-efficient practices, we need a policy framework to support the transition to zero-carbon systems.

100 years ago, farmers grew hay as fuel for horses. Now, as then, the agri-food sector must supply some of its energy needs. Biogas can support this process. At Brewdog, it is the cornerstone of their plans. The brewery will use biogas to brew beer and fuel HGVs that distribute their products.

The agri-food sector also produces a range of materials that can be converted into novel products. Bio-engineering can extract useful materials and create valuable products, upstream or downstream of food-processing sites. The bio-residues can be treated in AD plants to help fuel the processes.

If the UK is to avoid embarrassment at the delayed COP26 Conference in November 2021, a more creative and coherent approach is required to curb production- and distribution-related emissions.

Government must help SMEs to follow the lead of larger businesses and facilitate UK industrial decarbonisation, supporting innovation and risk reduction. Snappy soundbites like 'build back better' are not enough. A priority in advance of COP26 should be a supportive policy framework to help businesses recovering from Covid to make the transition to carbon neutrality.

Richard Gueterbock, an adviser on industrial bioenergy, is involved in the development of biogas plants embedded on industrial sites. Current clients include Scottish brewer Brewdog, which plans to make its main brewery carbon neutral by 2022. Richard was also involved in efforts by the REA to expand the RHI Covid-19 extension to all projects, not just larger plants that qualified for Tariff Guarantees.



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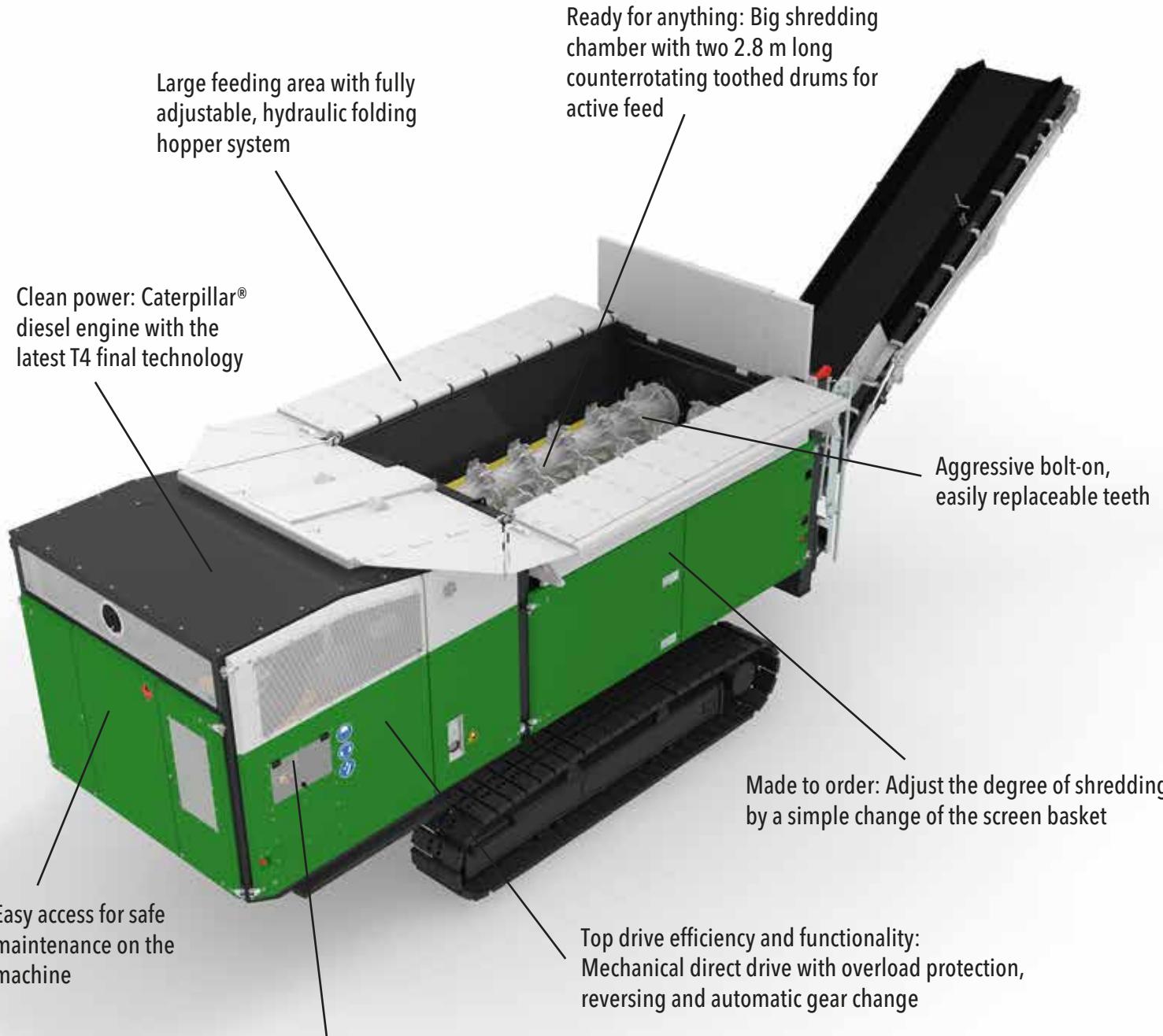
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Termination of contamination, or contracts?

Ben Brown, Director at sector specialist consultancy WRM, explores how the proposed contamination limits for biowaste treatment permits could distort the market and force existing contracts to be terminated

The consultation on the proposed changes to standard rules biowaste treatment permits are to include a 5 per cent by weight (w/w) contamination limit for plastics. It has been indicated by the Environment Agency (EA) that this limit will be gradually reduced over time, with an aim of reducing to a significantly lower level – perhaps as low as 0.5 per cent weight for weight (w/w).

At the same time, the EA has been issuing Regulation 61 notices for existing bespoke installations, and undertaking a regulator-led variation of those permits. Although not stated in any of the communications issued alongside the notices, the EA is varying those permits to include a permit condition with a 5 per cent w/w plastics contamination limit for biowaste acceptance. It was not made clear that this was to happen, and there is no indication as to how this contamination limit will be amended in the future, how many times it will be amended, on what timescales, and what if any costs are to be levied for such variations to the permit conditions.

This lack of clarity comes at an important time for the sector; the next round of consultations on the Resources and Waste Strategy for England is just over the horizon, with potential implications for local authority biowaste collection and treatment contracts. Covid-19-related delays to the next round of consultation for the strategy put increasing pressure on an already tight deadline for separate collections of food waste starting by April 2023.

Authorities planning a change of service will need to start now in planning for and executing a procurement exercise to obtain best value for their residents. If that is to include new-build assets, then the strategic work to inform which solutions meet the needs of that local authority area should be happening right now, including options modelling and market engagement.

There is a risk of forced termination as a direct result of the imposition of contamination limits in permit conditions

Primary consideration

A clear challenge to that market engagement, in order to inform how the local authority might make that procurement as attractive as possible to the market, is that operators currently do not know which contamination levels within the target material can be legally accepted in two, five or 10 years' time. This makes the procurement exercise challenging for both sides of the table, but there are contract clauses that address such uncertainty.

For currently held long-term contracts, there is a risk of forced termination as a direct result of the imposition of contamination limits in permit conditions. There is a highly variable picture across the country as to how contamination levels are adopted into contract specifications. This can vary from no limit

– and the contractor bears all costs associated with contamination disposal – through to a specification with limits on contaminants such as plastics, which, individually, can be below the 5 per cent w/w limit, but can amount to a total contamination limit in some examples of more than 10 per cent w/w.

Not all current contracts have a mechanism in which the contract can legally be continued where a change such as a contamination limit on acceptance is applied to the contractor's permit. In our experience, this can especially be the case for spot market contracts, which, due to their value and perceived simplicity, are often not as robust as those of a longer duration and higher value, such as design, build and operate (DBO) contracts.

A well-written contract should include a qualifying change in law (QCIL) clause that can accommodate a foreseeable change to legal requirements under the permit. This would enable the original procurement outcome not to be challenged where a contract specification was adopted that is contradictory to a legal change to the permit conditions, such as contamination acceptance limits. QCIL clauses should be included for all future contracts with the current uncertainty on changing plastics contamination levels.

Failing the presence of such a clause in the contract, an alternative route could be through a review mechanism. This may allow the specification to be altered in line with the permit contamination limit. However, depending on the specifics of how the original OJEU notice was written and the review mechanism function, this may not be viable. Public procurement exercises are tightly controlled through legislation to ensure a fair process and outcome are achieved. A change through a review mechanism of the contract specification could be deemed to have been fundamental to the original procurement award decision, and the market solution and prices offered by the marketplace. In such a circumstance, the contract may be required to be terminated and re-procurement undertaken.

Where neither of the stated contractual routes are available,

then the contract may be forced to go to dispute, as the contractor cannot legally accept the material at one contamination limit, and the local authority cannot legally change the contract to meet the contractor's legal requirements. The foreseeable outcome would be contract termination and re-procurement. These points may seem moot at a contamination limit for plastics at 5 per cent w/w, but at 0.5 per cent w/w, most local authorities would be challenged to deliver material at such levels of contamination.

Contractors should be reviewing contract clauses to understand how they might be impacted by these changes, and engaging with their counterparts to understand how these future changes will be managed.

Market issues

There is some logic to the process the EA is going through. Being unable to regulate the quality of source material delivered to a biowaste treatment facility, the restriction on contamination acceptance criteria provides a mechanism to affect the desired change. The environmental benefits from such a restriction are yet to be tested, with a range of outcomes foreseeable, including an increasing ratio of biowaste ending up in landfill. Irrespective, the implementation must be delivered in a way as to not distort the market, inhibit market segments or individual organisations, or provide a competitive advantage to others.

One concern WRM has raised with the Organics Steering Group is that the current implementation is creating an unequal market. Current proposals for the implementation of plastics contamination limits apply to biowaste treatment permit holders only. Other permit holders, such as waste transfer activities, are not included, providing a market advantage to contract with a local authority directly to take the target waste at the contamination level presented following collection. Decontamination at the waste-transfer

The implementation must be delivered in a way as to not distort the market, inhibit market segments or individual organisations, or provide a competitive advantage to others

facility will be required before onward transfer to the biowaste facility, which will receive the material at a lower gate fee, and in many cases could have undertaken such decontamination on the site of ultimate treatment.

The situation is further exacerbated by permit variations through the Regulation 61 notices. It has been indicated that the EA has issued approximately half of the notices; of those, many are stuck in the system, awaiting permits to be drafted and issued. The current situation is that

a portion of the market currently has a permit condition imposed with a contamination limit on waste acceptance; the rest of the market does not.

Depending on the contracting local authority and its attitude to risk, this may put those organisations at a competitive disadvantage when bidding on contracts. This may not be an issue at the current five per cent limit, but as that figure drops in subsequent permit revisions, it is vital that market dynamics are not distorted by the regulator. WRM is calling on the EA to issue whole-market, regulator-led permit variations on the exact same date to prevent this issue and to apply such conditions to any permit holder consented to accept biowaste, not just for treatment.

On the positive side, the upcoming changes to the biowaste market could provide the necessary contractual certainty to enable operators to make the capital investments to meet increasing regulatory standards. Better investment in the procurement exercise, with more robust contracts being issued with appropriate clauses, should result in contracts of longer duration and higher value. This should help meet rising compliance standards and tightening of end of waste specifications such as PAS 100/110, which might be a better mechanism for realising the original shared aim of improving product quality and reducing plastics in our natural environment.



CCS & BCS

Molly Rogers, Research and Communications Assistant at REAL, provides the latest on the Compost and Biofertiliser Schemes and the REAL Research Hub

REAL Annual Report

Our 2019 annual report was recently published, providing an overview of Compost and Biofertiliser Certification Scheme data and developments.

At the end of 2019, there were a total of 182 compost processes certified under the scheme. Approximately 1.6 million tonnes of quality compost were produced annually by sites in England, as well as 62,000 tonnes in Wales, 177,000 tonnes in Scotland and 123,000 tonnes in Northern Ireland.

There were 84 plants certified under BCS by the end of the year, with a total registered annual throughput of approximately 4.5 million tonnes. Of the 84 plants, 62 were in England, 11 in Scotland, eight in Wales and three in Northern Ireland. Out of the total number of certified plants, 49 were producing certified whole digestate, 14 producing certified separated liquor, and three producing separated fibre.

In 2020, data was collected from the environmental regulators on the permitted/licensed compost and AD 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). The full dataset is available in the report.

The 2019 CCS and BCS Annual Report can be found on both the CCS and BCS websites.

SQCS workshops

We held two workshops for compost producers in August and September 2020 on the Safety and Quality Control System (SQCS) requirements in PAS 100:2018. The SQCS introduces a number of checks and controls throughout the composting process to ensure that compost is fit for purpose. This ensures that hazards relevant for compost quality are identified and controlled.

These workshops provided a platform for discussion on the implementation of the SQCS and



compliance with HACCP requirements. The workshops were held by REAL and delivered online by a HACCP expert. They consisted of interactive sessions and individual exercises.

Research Hub

The website

The Research Hub website is now live! The website was launched on 12th June and can be accessed using realresearchhub.org.uk. The website provides information about the establishment of the Hub as well as its governance and ongoing research projects, and explains how to get involved (among other information). The site is the central platform for the latest information and developments.

The second project

The second project of the Research Hub will be 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. The project will build on the information gained from

the Hub's first project, and will consist of three phases – information gathering, operator engagement and commercial viability examination – with the aim of providing a valuable resource for the AD industry as well as those concerned with circularity principles and waste-derived products. The project brief can be found on the website.

The Research Hub will appoint a contractor for the second project, following a competitive tender process. The Tender Invitation document for the above project was released on 21 August and closed on 2 October.. You can find more information on the tender process, including the TID document, by visiting the News section of the website. Alternatively, contact Olivia Furszeddon, Hub Manager, at olivia@realschemes.org.uk.

The first annual report

The first Annual Report of the Research Hub was recently published, which showed the Hub's activity throughout 2019. The report outlines its establishment, governance, projects and fees. The full report can be found within the News section of the website.

REAL's Compostable Materials Certification Scheme

Paul Thompson, Stakeholder Engagement, Compostable Materials at REAL, explains the organisation's new Compostable Materials Certification Scheme

REAL launched the Compostable Materials Certification Scheme (CMCS) at the end of September. This article sets out what it is, how it works and what we're trying to achieve by introducing it.

Conventional plastics can be very difficult to separate out from organics, and can end up contaminating the compost or digestate produced. There are a range of opinions on how big a problem this really is, but there is no denying that the scrutiny from regulators and the public is not going to go away.

Part of the problem is confusion over which bin to put products in after use. This calls for clear, consistent messages to consumers, repeated many times – which is nearly impossible at the moment, given the inconsistencies in collection of household waste across the UK.

Some of the attempts to respond to public concerns have only added to the confusion. Terms like 'biodegradable' are effectively meaningless without specifying in what environment and under what time frame this would occur. Labelling something '100 per cent compostable' doesn't help either. Does it mean it will compost under commercial composting conditions or home composting conditions?

What we need is relatively simple:

- 1 The claim must be specific, preferably by referring to a suitable third-party standard;
- 2 The product needs to have been independently assessed for conformity to that standard;
- 3 A non-specialist should be able to check that these claims are correct and that any certificates issued are still valid; and
- 4 Messaging to the householder needs to be as consistent and streamlined as possible. If all they want to know is which bin to put it in, they should be able to figure it out easily.

Given the constraints of our existing systems, actually putting this into practice will not be so simple. But the whole system is going to be changed significantly over the next few years, so we should make the right decisions now based on where we want to get to.

The Compostable Materials Certification Scheme

The CMCS certifies materials as either industrially or home compostable – or both. It uses well-established European and international standards – EN 13432 and EN 14995 (industrial) and NF T51-800 & AS 5810 (home).

The scheme launches with DIN Certco as the Certification Body, which is already very well known in this market.

The Certification Body certifies conformance against the applicable

standards and scheme rules. Where appropriate, previous laboratory testing will be used, so as to reduce both the time and the cost of getting new materials certified. Materials that have already been assessed by the Certification Body against the standards should be able to move over to the CMCS with minimal additional work.

The producer of the material enters into a licence agreement with REAL to be able to use the industrial- and/or home-compostable certification marks:



These are registered trademarks in the UK. They can be used alongside existing logos if desired, but the intention is to have the use of the mark as widespread as possible, to reduce the number of different overlapping images seen by consumers in relation to compostability. The fee for use of the mark is £100 per year, per certification. We have kept the cost as low as possible in order to make it as easy as possible for producers to join the scheme.

Each product's certification includes a unique identifier. Our website provides an easy means to check whether the certification is valid, and gives other information on compostables. We are also working with other stakeholders to develop clear guidance on disposal of materials after use.

For further information contact:

e info@realschemes.org.uk

t 0207 981 0875

w compostablematerials.org.uk



Odour joy

Robert Sneath, Director at Silsoe Odours Ltd, outlines the main things to take into consideration when purchasing odour-control systems

Odour is an ongoing industry challenge. It causes a high number of complaints, is often highlighted as a potential concern during public consultations, and causes difficulty achieving planning permission or complying with your operating permits. Your sites must operate without causing a negative impact to the local community.

Plan ahead

It is essential to consider odour effectively in the design of any new or revised site.

Lidded hoppers and covered process equipment will contain odours to be ducted to stacks or odour-control equipment, and avoid contaminating the building atmosphere. You should contain emissions within the building by ensuring there are no leakage points in the structure of the building. Fast-acting doors and custom-made strip curtains are good starting points for the latter. An air-lock system for lorry access is best. Outside, keep concrete as clean and dry as possible.

Effective odour control

For existing operational sites, an odour-sampling survey combined with

dispersion modelling that identifies how odours from your site are likely to travel, and their impact concentration, should be considered. This data can also support your planning or permit applications. This will identify the processes that have the most odour impact in your local community, which is essential for understanding further odour-control equipment requirements. Crucially, it allows your supplier to design the most cost-effective odour solution. Once you have designed a suitable control system, you should test a pilot unit before you commit funds to the build.

Ongoing measurement

An odour-management plan (OMP) defines your ongoing approach to monitoring, measuring and controlling odour emissions. The OMP should be 'owned' by the site staff, not written by a consultant and presented as a set of rules to be followed. This way, odour emissions can be dealt with in real time to deal with issues before they impact nearby 'receptors': schools, business and homes. If complaints do occur, there will be a complaints-management procedure.

Your day-to-day odour-control activities should include regular monitoring of the emissions from your processes.

It is prudent for any nominated odour-monitoring staff to complete an odour-sensitivity test, in accordance with the EN13725 standard. Undertaking regular odour-sampling surveys will also help ensure your odour-control systems continue to work effectively.

In future

The European BREF conclusions for waste treatment, published in August 2018, call for specific Emission Limit Values for odour and ammonia from biowaste sites to be measured to reinforce odour pollution control.

Twice-yearly emissions sampling is specified with the provision for reducing this frequency if emissions are sufficiently stable.

These BAT-associated emission levels for odour channelled to air from the biological treatment of waste of 1,000 ou_E/m³ can be applied to all biowaste waste sites unless there are specific legal or technical reasons why they cannot.



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For more information, please contact Hugo Salter using the details below:

- W** www.centriair.com
E Hugo.Salter@centriair.com
M +44 (0)7483 862955

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Silsoe Odours is an industry-leading independent odour consultancy based in Bedfordshire, offering a comprehensive range of services to help customers

understand, assess and manage the effects of odorous emissions. This includes odour assessments and emission measurements, field impact surveys, dispersion modelling, testing and analysis services. The company aims to provide the necessary information to avoid costly social, regulatory and legal conflicts relating to odour emissions.

Its team of experts have decades of first-hand experience in odour management and control across a

wide range of industry sectors. Silsoe Odours' specialist odour laboratory is UKAS-accredited, and its testing is conducted to the BSEN13725 European Standard. Silsoe also offers CPD-Certified odour training, which is CIWEM accredited and endorsed by IAQM.

Contact

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Contact

- Andy Chalmers**
T +44 (0) 1666 502711
E mail@melcourt.co.uk

Keenan Recycling's success story

Keenan Recycling Ltd (KRL) was formed in 2003, originally as a garden waste composting company when Managing Director and founder Grant Keenan noticed that garden waste was being landfilled.

Grant recalls: "In those days landfill was cheap and was very much the norm, the concept of composting was known by very few people, not like the understanding the public has today"

The business started with the recycling of garden waste from skips that were collected from civic amenity sites throughout the North East of Scotland. Once the skips were set up, KRL turned their attention to households and suggested to Aberdeen City Council (ACC) that it would be a good idea to provide wheelie bins to people that had gardens. ACC agreed and the business expanded, firstly by installing large concrete pads and then by investing in new shredders and screeners.

Grant and his wife Claire were running the business at that point and were soon joined by Grant's brother Gregor who was working in London at the time. The team wanted to tackle waste streams that were not being addressed by mainstream waste companies and so decided to focus on food waste.

In 2008 a grant from WRAP of £432k was secured, plus a cash injection of £500k from the brothers' father Mel, who had recently sold his offshore survival business, provided the foundation for £3.2 million raised to build Scotland's largest in-vessel system.

The facility was opened in late 2009 and initially catered for Local Authority co-mingled food and garden waste. It soon became apparent however that in order to attract waste from the commercial sector the company were going to have to invest in a food waste collection truck.

Claire Keenan, Collections Director explained "We were blessed being in Aberdeen at the time as oil was booming and companies like BP and Shell were on a big drive to develop their green credentials and leapt at the opportunity to recycle their food waste. In turn, they also greened up their supply chain, so the collections really took off"



In 2014 it became a legal requirement to recycle food waste in Scotland and so the management team took the decision to take on board private equity in the form of BGF (Business Growth Fund). An initial investment of £2.2 million for a minority stake in the company was made by BGF in 2015.

Keenan Recycling is on a mission to have full UK coverage on their own wheels by the end of 2021

Operations Director Gregor Keenan remarks: "We wanted to have a large war chest to aggressively target the market in the central belt as it was a race for market share."

At that point, the company had learned from its experience in the North East over the years and so was well placed to become the largest food waste collection company in Scotland within a short space of time.

In 2018 KRL opened a new depot in Newcastle and in 2019 opened depots in both Leeds and Manchester. 2020 saw the opening of a further two depots, one in Salisbury and one in Gloucester, giving the company postcode coverage

from the tip of Scotland to the South coast of England.

The company have attributed their success to the relationships that they have built up over the years with national waste companies and AD plants where they can park trucks and tip food waste. Claire Keenan adds: "We have recently invested £4.5 million in 39 new trucks that have state of the art systems on them giving our clients real-time information and visibility of the waste collected."

The recent growth of the collection service in England is a direct response to the announcement of the food waste regulations that will come into play in 2023. Keenan Recycling is on a mission to have full UK coverage on their own wheels by the end of 2021, with a plan in place to hire 40 sales-people in the next 12 months.

2020 will also see the opening of a large-scale biofuel plant in Glasgow that KRL has built on a site that they acquired when they bought Scottish Water's composting and food waste collection arm.

The company is currently in talks to acquire several food waste collection companies operating presently in England.

REA Biogas steering group

John Baldwin explains how industry is planning to address the challenges of decarbonising vehicles and the electricity grid over the coming years

John Baldwin,

Managing Director,
CNG Services Ltd



On 22 September, BEIS published a consultation on the Green Gas Levy, which is a proposed charge for domestic gas consumers that aims to fund biomethane projects through the Green Gas Support Scheme. The REA Biogas Steering Group continues to input into BEIS and Ofgem to help ensure the scheme is successful. It is expected to be in place by 2022, when the RHI comes to an end.

Domestic consumers are already funding biomethane projects as a

result of the Renewable Transport Fuel Obligation (RTFO). This is incentivising the likes of Shell, BP and Greenergy to have a higher percentage of renewable fuel in the petrol and diesel they sell. Biomethane made from waste is a highly attractive fuel under the RTFO, as it earns double certificates, and the value to the biomethane producer is now broadly similar to that from the RHI. Decarbonising high-mileage heavy goods vehicles is difficult, with no 40/44-tonne electric or hydrogen vehicle available on the market and none expected in the next few years. Companies like John Lewis/Waitrose cannot wait for such vehicles, and are transitioning their fleets now to biomethane, with a target of 2028 to have replaced all of their diesel trucks. BEIS is proposing that the Green

Gas Support Scheme gives flexibility to claims for financial support under that scheme or under the RTFC, and that this will further help the decarbonisation of trucks. Cadent Gas is also completing a gas-innovation project that shows how moving from diesel to biomethane is a stepping stone to battery or fuel-cell trucks, in that it moves trucks away from diesel to a gaseous fuel after 120 years.

As the electricity grid decarbonises, burning biogas to make electricity may not be seen as attractive as it was when it was displacing coal generation. Given that, in my view we need to ensure that there are mechanisms in place to move biogas utilisation from electricity generation to more valuable utilisation options, such as trucks displacing diesel.

REA Biogas steering group members



Mark Richmond,
Technical Director,
WRM



Neil Liddell-Young, Strategy
and Development
Director, Severn
Trent Green Power



Andrew Winship,
Business
Development
Manager, Air
Liquide's Biogas
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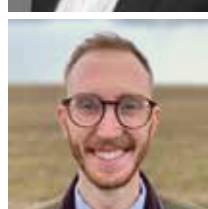
Paul Thompson,
Regulatory
Compliance
Manager, Solar 21



William Mezzullo,
JLEN AD, Foresight
Group



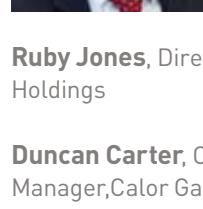
David Kinnersley,
Head of
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German



Henry Haworth,
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Consultant, J H
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Mark Storey
Sales and Marketing
Manager, Greenlane
Biogas Ltd



Ruby Jones, Director, Qila Energy
Holdings



Chris Negus,
Business
Development
Manager, Privilege
Finance



Philipp Lukas,
Managing Director,
Future Biogas Ltd



Duncan Carter, Corporate Affairs
Manager, Calor Gas

REA Organics Steering Group

With the regulated and the regulator both trying to do more with less, **James Astor** looks at the key challenges for the organics sector over the next few months

James Astor,
Chairman,
Regen Holdings
Ltd



The organics industry is under financial pressure. The Covid-19 pandemic has hit volumes (and so revenues) to many organics recyclers this year, as arisings and collections have both been knocked. This comes at a time when there is growing commitment from the government – one that is shared by the organics industry – to raise environmental standards. However, higher standards almost always mean higher operating costs. As the industry can't absorb these, gate fees for all organics wastes should increase over the next few years.

The REA continues to support its organics members by coordinating their responses to a large number of consultations. Current consultations include those on red diesel, the banning of single-use plastics in Wales, the future of recycling and collection in Northern Ireland, and the waste-management plan for England.

High on the organics agenda are the proposed changes to permits and guidance for biowaste treatment facilities. The 'Appropriate measures for the biological treatment of waste consultation' highlights what is coming; many sites will need to make significant operational changes or costly investments in new equipment to comply. The QPs are also going to be reviewed, and the REA will need data from members to inform what should be a fact-driven debate with the Regulator.

The REA is also supporting members who are discovering that the FRfW, combined with the NVZ Regulations, mean that autumn digestate spreading is severely curtailed, increasing their storage requirements to more than six months in many areas.

Work also continues alongside WRAP on the organics report (covering organics feedstock and product quality, the impact of digestate on air quality and markets for composts and digestates).

In November, Charlie Trousdell's term as Chair of the OSG ends. His knowledge, experience and powers of gentle persuasion as Chair have benefited all members, and will be difficult to replace. We are lucky and grateful to have the indefatigable Jenny Grant leading the effort within the REA.

REA Organics steering group members



Andy Sibley,
Managing Director,
Envar



Graeme Kennett,
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**Justin
Dampney,** COO,
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Partner, G K
Benford & Co



Georgia Budden,
Waste Management
Consultant, Vegware



Ben Brown,
Director, WRM



Robert Moody,
Managing Director,
Jack Moody Group



Paul Whyatt,
Technical Director,
4R Group (in place
of Rebecca Wheeler
who is on maternity
leave)

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