

Written Evidence submitted by The Association for Renewable Energy and Clean Technology (REA)(SH0038)

The Association for Renewable Energy and Clean Technology (the REA) is a not-for-profit trade association, representing British renewable energy producers and clean technology and promoting the use of renewable energy in the UK. It has around 550 corporate members, making it the largest renewable energy trade association in the UK.

The REA's Organics and its Green Gas forum together comprise 422 members, numerous of which operate commercial composting facilities, commercial scale anaerobic digestion (AD) facilities and recycle organics to land. More info available at www.r-e-a.net

REA welcome the opportunity to provide evidence to the EFRA committee on soil health. Many of our members produce organic materials (composts and digestates) which can deliver multiple benefits to soil health.

1. Measuring progress

The REA supports clarity and consistency in any methodologies Government use to measure progress. Regardless of the specific measures, it is vital that landowners are aware and able to meet any expectations for collecting data, and that standards are abundantly clear to ensure that consistent data collection. For example, soil carbon should be measured at specified depths appropriate to soil type; and data should only be considered over long-term periods to account for natural seasonal variations.

Action: Clear guidance documents should be published by Government as soon as practicable and avoid frequent amendments.

2. Current regulations

The REA does not believe current regulations are sufficient in ensuring the maintenance and improvement of soil health.

Reasons why current policies are insufficient

Regulations on soil health consist primarily of cross-compliance requirements, which are conditions which must be satisfied by farmers to access the Basic Payments Scheme (BPS) and other forms of support. Relevant sections are primarily Good Agricultural and Environmental Conditions (GAEC) and are limited to limiting erosion and leaching to watercourses (GAEC 1), providing minimum soil cover (GAEC 4), minimising soil erosion (GAEC 5), and maintaining Soil Organic Matter (SOM) levels (GAEC 6). Crucially, the step from *maintaining* to *improving* soil health is missing. A key way to improve soil health is the responsible application of bulky organic-matter-rich materials, such as compost, to soil, which improves soil structure, SOM and soil carbon, and the long-term maintenance of soil Nitrogen, Phosphate, and Potassium (NPK) levels.

First, many **existing policies** which promote soil health or sustainable farming practices **are optional**, particularly regarding improvements to soil health. Considerable exemptions exist for meeting each individual GAEC, and on whether meeting the GAEC is a necessary condition for receiving BPS payments. In addition, these regulations focus on maintaining rather than improving soil health, which is disappointing given the already considerable damage to agricultural soils' health.

Second, existing policies provide **insufficient incentives** for voluntary uptake of measures to maintain and improve soil health. The BPS is intended to be the main scheme offering financial support for farmers, and the appendage of cross-compliance requirements, while better than not having any flows of money dependent on meeting certain environmental standards, means that farmers are incentivised only to meet minimum standards.

Third, there is **significant uncertainty** in the sector, driven by unclear messaging on what sustainable land-management practices consist of, especially with regards to soil health, and the UK's exit from the European Union (EU) and the Common Agricultural Policy. This exit means that future support and the expectations for sustainable land-management are again unclear in the medium- to long-term.

Finally, while improvements to soil health are influenced by the sustainable application of materials, the UK regulatory environment needs to support relevant sectors, and enable their operation and growth so that they can produce the materials needed. In particular, the commercial/industrial composting and AD sectors, which produce various compost and digestate outputs, represent a valuable and sustainable source of materials which have a proven track record of improving soil health when used in accordance with good practice. The sector is gearing up for anaerobically digesting more food waste in England over the next decade (or composting food with garden plant wastes where justified). This industry needs the timescales for obtaining planning permission and permits for new facilities or adding on extra capacity at existing sites to be realistic and therefore needs sufficient resources available to the Regulators to process applications.

The application of compost to soil has been shown, by a number of reports and academic studies, to be effective in improving various aspects of soil health. In the Agriculture and Horticulture Development Board (AHDB) library entry on adding organic matter to soil, referenced as a source in Government guidance on the Sustainable Farming Incentive (SFI), compost is identified as providing moderate improvements to soil biology and soil structure, exceeded in such benefits only by the application of farmyard manure (FYM). However, this gap is misleading. Compost proves to be a far more resilient source of organic matter than FYM: there is evidence that while over a nine-year period, compost applications supplied only half the organic matter that had been supplied by the almost 20 years of FYM applications, it resulted in a comparable increase in total SOM levels. Retention of the OM supplied with the green compost (20-24%) was therefore almost double the retention of OM from FYM (12%), which suggested the compost was more resistant to decomposition.¹ In addition, as a result of the composting process, compost has been sanitised, so pathogens are eradicated, which is not always the case with FYM.

In addition to benefits on SOM and soil structure, compost also provides significant slow-release NPK benefits, which is better for long-term soil health improvement.² These slow-release nutrients are less susceptible to loss to the environment so potentially can result in fewer restrictions on the application. In addition, by being sourced from organic waste from other parts of the economy, the application of compost supports other UK circular economy targets, while also displacing fossil-based fertilisers as well as being a source of carbon sequestration.

Compost has the potential to sequester carbon in soil. Research by the International Solid Waste Association (ISWA) has shown that over a period of 4 to 12 years, in the region of 11-45% of the organic carbon applied to soil as compost remained as soil organic carbon. One tonne of green waste derived compost, applied to soil over one-hectare results in a net CO₂ equivalent saving of 143kg/ha/year due to the increase of soil organic matter alone³.

¹ https://preprod.wrap.org.uk/sites/default/files/2020-09/WRAP-DC-Agri_Work_Package_1_-_Effects_on_Soil_and_Crop_Quality.pdf

² <https://preprod.wrap.org.uk/sites/default/files/2020-08/WRAP-Digestate-compost-good-practice-guide-reference-version.pdf>

The following figures quantify the benefits and show how **compost has so far been severely undervalued**; carbon sequestration through compost is roughly 50% more effective than through manure-derived carbon over four years.⁴ It increases the soil stability, a positive outcome of soil structure, by 30%.⁵ ISWA has undertaken work valuing compost based on its nutrient content and potential to sequester carbon relative to the market prices for mineral fertilisers. They suggest that compost has a value of €21.20-28.20 per tonne compared to the current average market price of €7.50 per tonne. The estimated cumulative value of the carbon and nutrient values over 10 years is €6,354 based on an application rate of 30 tonnes per hectare per year.⁶ These values should be recognised and this would enable the agricultural sector to be in the position to purchase compost at a fair price which would in turn enable the compost producers to improve the quality of their product.

The obstacles to the growth of compost production have been considerable in recent years. First, in the past year, operating costs have risen significantly due to a number of factors including: increased cost of energy; increased labour costs; a shortage of Heavy-Goods Vehicle (HGV) drivers, necessary for the collection of food waste, in part due to the UK's departure from the European Union; the removal of the waste sector's allowance to use red diesel, which is still allowed in the agricultural sector, this impact has been uneven and created unequal market conditions; and the increased costs of components due again to the increased cost of energy and a global crunch on supply chains. Second, commitments by Government to separately collect food and garden waste at all properties across England have so far failed to materialise, which has led to competition for existing feedstocks and meant that site throughput capacity has not been increased at those sites where this would be feasible. Third, poor quality feedstocks lead to increased operating costs - to remove contamination and achieve compost and digestate qualities that meets end-of-waste positions - and meet the market expectations for these products.

An important step in improving the quality of composts and digestates is to move ahead with mandatory food and garden waste collections, and with regulations on consistency in household and business recycling, but publication of Government's decisions on both is still awaited. Whilst we support measures planned to limit the use of single-use non-compostable plastics, there should be supportive and effective drivers for using industrially compostable (and independently certified) versions of packaging and non-packaging products that:

- a) usually contain food-waste when discarded (e.g. tea bags),
- b) are used in conjunction with food but are such small format they are not likely to be conventionally recycled but do contribute to contamination that organic recycling facilities must manage (e.g. stickers on fruit and veg), or
- c) facilitate increased collection of food waste arisings and/or higher yield and/or quality of biogas and digestate or compost (e.g. liners for kitchen caddies and food waste bins and lightweight carrier bags with a last, re-purposed use as a liner for kitchen caddies and food waste bins).⁷

³ Benefits of Compost and Anaerobic Digestate when applied to soil <https://www.iswa.org/biological-treatment-of-waste/?v=79cba1185463>

⁴ <https://www.altereko.it/wp-content/uploads/2020/03/Report-2-Benefits-of-Compost-and-Anaerobic-Digestate.pdf>

⁵ <https://www.nfuonline.com/updates-and-information/soil-organic-matter-and-increased-water-holding-capacity/>

⁶ ISWA, Quantifying the Benefits of Applying Quality Compost to Soil <https://www.iswa.org/biological-treatment-of-waste/?v=79cba1185463>

⁷ Paper, plastic-like polymer or combi-material liners, or plastic-like polymer in the case of lightweight carrier bags. Whatever they are made from, they must be independently certified compliant with BS EN 13432 or BS EN 14995. <https://www.r-e-a.net/resources/policy-on-and-liners-and-re-purposed-bags/>

To support geographically widespread organic recycling of such compostable items (and acknowledging their total tonnage per annum will be small relative to total biowaste and packaging/plastics tonnages), the Infrastructure Commission should work with industry to identify good-practice model organic recycling facility types that include the AD capability government has prioritised but which are also designed for organically recycling the compostable items. If such models are not currently financeable, changes that would make them financeable should be identified. Design-wise, examples of such models could be AD with an integrated animal-by-products-regulation-compliant composting process (if also receiving garden wastes or similar) or suitable pre-treatment in advance of the digester and if necessary, a composting phase for the dewatered digestate. Drivers and support for adapting, where feasible, existing food-waste AD facilities so they can also organically recycle such items should also be considered.

The REA acknowledges concerns on the application of compost and digestate to land, specifically regarding physical contaminants (e.g. glass, metal and plastic), microplastics, and the leaching of nutrients to water courses. Current regulations and End of Waste rules set limits on physical contaminants in composts and digestates. These limits are more stringent in Scotland and those applicable in other countries of the UK are expected to be significantly tightened as part of the current industry-regulator project to revise the Quality Protocols for compost and for digestate. REAL's Compost Certification Scheme⁸ and Biofertilizer Certification Scheme⁹ both require that the compost or digestate produced is fit for purpose and include requirements to check with users for any additional requirements they may have.

The next enabling steps are about reducing contamination at source, and the forthcoming mandatory food and garden waste collections represent an opportunity to run a thorough communications campaign to encourage responsible recycling practices by consumers at home. Removing contamination at the front-end enables the production of high-quality products in the most cost-effective way.

Together, the above enabling steps will reduce the costs of removing contaminants and risk that some get through to land, and it will increase exponentially the quantity of acceptable feedstocks and decrease the quantity of compost which fails to meet Quality Protocol standards and therefore achieve an end-of-waste position.

Regulations on the application of digestate and other fertilisers with a high level of readily available nitrogen (RAN) are also stringent, specifically the Farming Rules for Water which limit the time of application of digestate and ensure responsible storage of digestates on-site.

Actions:

- Implement mandatory food and garden waste collections from households.
- Ensure there are sufficient resources for the Environmental Regulators.
- Work with industry to identify good-practice model organic recycling facility types that include the AD capability government has prioritised but which are also designed for organically recycling the compostable items.
- Ensure sufficient funding for UK wide education and communication with the general public regarding the importance of recycling properly.

3. ELMs

The Sustainable Farming Incentive (SFI) and the Local Nature Recovery (LNR) schemes both have an increased potential for supporting soil health. Both incentivise additional sustainable activities, as

⁸ <https://www.qualitycompost.org.uk/>

⁹ <https://www.biofertiliser.org.uk>

opposed to meeting minimum expectations on sustainable practices. In enabling farmers to take up the activities in ELMS, especially actions in the SFI on adding organic matter, the REA supports listing acceptable materials, and recommends adding compost and digestate to the list of acceptable materials on the Government guidance document, especially considering they are listed in the AHDB library which is listed as a source for appropriate organic materials. Compost specifically supports targets on increasing soil structure, SOM, and NPK in a sustainable way as described above; digestate can play a vital role in promoting soil nutrient content in a far more affordable way than mineral fertilisers. In addition, compost can support actions in the LNR, specifically in net-zero (displacing fossil-based mineral fertilisers, sequestering carbon, and avoiding organic matter going to landfill or incineration); and building resilience to climate change and natural flood management and coastal erosion mitigation (by providing significant benefits to soil structure and SOM).

The use of compost and digestate should continue to be regulated as it is now under compliance with Quality Protocols, permits and registered exemptions for their spreading on land, the Farming Rules for Water and Nitrate Vulnerable Zone rules. Further to this, there are significant actions that Government can take to reduce the possibility of contamination early on in the supply chain, reducing risks of environmental damage and costs of managing contamination and enabling higher yields of marketable/usable quality composts and digestates. Further actions that would improve recycling rates and the quality of composts and digestates include:

- publish public sector food and garden waste collection contract templates and guidance, with a goal of ensuring no public sector tender invitations issued in the future allow more than a 1 % by weight physical contaminants level in garden/plant waste or a 5 % by weight physical contaminants level in non-packaged food waste;
- work with the industry, REA and WRAP to build on and refine householder education and comms resources on what should and should not go into garden and food waste bins;
- procure research into which pre-treatment machinery and set-ups for food-waste-fed AD and food & garden-waste-fed composting facilities are most effective at removing packaging, and consider what funding mechanism may be used to drive improvements at facilities where pre-treatment machinery and/or their set-ups need to be improved; and
- work with REA and stakeholders in the compostable products sector on education and comms resources on what should and should not go into food waste bins in, at least, business-to-business ‘closed environment’ arrangements, e.g. restaurants, cafes, festivals, and sports stadia.

Action: Ensure that the SFI requires that soil health is regularly measured over time to ensure that actions taken to improve soil health reflect the intended benefits. Include compost and digestate in the SFI guidance list of acceptable materials and take actions to reduce contamination at all stages in the supply chain (e.g. waste producer, waste collector and waste processor).

4. Transitions

For the agricultural sector to make use of available resources to increase soil health, there needs to be increased awareness of the benefits of compost and digestate and their potential role, and how to recognise and manage associated risks.

For the changes needed to fully make use of compost in the economy, Government needs to introduce mandatory separate household food and garden waste collections. Mandatory food waste collections

for business should also be introduced as soon as possible as this will increase the tonnages of materials to be treated. Business to business contracts for food waste will also enable quality feedstocks, as there is better scope for the control of waste inputs and the use of compostable packaging and non-packaging products (in appropriate product formats) at business premises.

To enable industry to manage this waste and meet demand for compost and digestate products, permitting issues need to urgently be resolved, which include staffing issues at the Environment Agency (EA). Both reducing source-contamination and reducing barriers to expansion will reduce costs per tonne of waste treated. Availability of good quality and affordable composts and digestates in significant quantities helps make the case for farmers to adopt these products as an effective and circular way of increasing soil health.

Action: There needs to be agreement, implementation and monitoring of standard metrics for the measurement of soil health. Introduce mandatory food waste collections for business to maximise the amount of recycled organic materials available to be used to improve soil health.

5. Soil health stressors

There are a number of actions that could be taken in relation to contamination in food and garden waste, composts and digestates set out in our answers to questions 2 and 3 above, which also highlight a number of regulations already in place to address soil contamination. There are other sources of contamination (such as PFAS in sewage sludge, tyre dust, litter etc) and Government should support a national programme to understand the significance of all of these sources and plan for their reduction or elimination accordingly.

Government needs to ensure that the Environmental Regulators are adequately resourced to consistently and fairly enforce the existing regulations. The EA should crack down on waste crime to ensure that legitimate operators are not undermined by illegal waste operators and the resulting impact on soil health of materials spread outside regulatory control.

There should be Government funded research into sources of microplastics in soils to inform future work in this area.

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