ECN
Compost and Digestate for a Circular Bioeconomy

ECN Position Paper

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ECN's feedback on the Commission's EU Taxonomy Environmental Delegated Act

The ECN welcomes the opportunity to comment on the Commission's proposal for an Environmental Delegated Act in the framework of the EU Taxonomy Regulation, which establishes a classification system for environmentally sustainable economic activities.

Specifically, the ECN would like to submit its feedback on ANNEX II of the draft delegated act focusing on determining the conditions under which an economic activity qualifies as contributing substantially to the transition to a circular economy. As representatives of the biowaste recycling sector and promoters of sustainable resource use through the application of high-quality compost and digestate in agriculture, horticulture, and landscaping, ECN fully supports the shift towards a circular model generating benefits to all three dimensions of sustainability.

Composting and anaerobic digestion processes create multiple positive environmental effects that help achieve different objectives and targets set by the European Green Deal, thus we first and foremost welcome the recognition of their contribution to these goals with their inclusion in the list of environmentally sustainable economic activities.

1. MANUFACTURING

1.1 Manufacture of plastic packaging goods

Concerning the chapter dedicated to 'Manufacture of plastic packaging goods' (1.1) criterium number 4 deals with compostable materials in packaging applications, providing a positive list of items in line with the proposed revision of the Packaging and Packaging Waste Directive (PPWR) adopted by the European Commission on November 30. In our view, the PPWR is the most appropriate instrument to define which type of item shall be made compostable and hence can be considered sustainable according to the draft environmental delegated act. For this reason, the delegated act should refer to the PPWR, and only once it is legally adopted. In any case, the ECN once again would like to stress that the sustainability of compostable packaging is intrinsically linked to the specific type of composting and anaerobic digestion systems and no one-size-fits-all approach is applicable. Existing national regulations for the permission of biodegradable packaging materials have to be taken into account as well. When conditions of the treatment process (composting or anaerobic digestion) do not allow proper degradation of the biodegradable plastic materials, then these materials should not be allowed.

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2. WATER SUPPLY, SEWERAGE, WASTE MANAGEMENT AND REMEDIATION ACTIVITIES

2.1 Phosphorus recovery from waste water

As regards chapter 2.1. covering activities for the recovery of phosphorus from waste water, ECN wants to highlight that the biological treatment (both anaerobic digestion and composting) of sewage sludge should be also taken into consideration as a type of sustainable activity for the recovery of nutrients, including phosphorus.

2.3 Collection and transport of non-hazardous and hazardous waste

ECN welcomes the criteria laid down in chapter 2.3. limited to the activities pertaining to the collection and transport of non-hazardous waste aimed at preparing waste for recycling operations. The ECN acknowledges the alignment of the draft delegated act with the provisions laid down in the Waste Framework Directive regarding source segregation and separate collection of waste. Especially, we are glad that among the criteria set out for municipal waste streams in paragraph 3, the door-to-door collection is regarded as the preferred scheme and outlines the importance of keeping the contamination rate low (3.a). The door-to-door collection is a fundamental step in the development of an efficient collection system, whereas some EU countries are considering implementing 'collection-points' which have already proven to be ineffective in keeping the quality of the biowaste stream high. Requesting that such 'collection points' should be supervised is a first approach 'to ensure a high level of separate collection and low rates of contamination' but there is a need to specify criteria for the supervision.

ECN also approves the incorporation of criterion 3.b, requiring the activity to put in place economic instruments to reduce the number of materials ending up in the residual waste stream to be deemed sustainable, which should be complementary to a successful collection system.

2.5. Recovery of bio-waste by anaerobic digestion or composting

When assessing the criteria formulated for activities concerning the recovery of biowaste through anaerobic digestion and composting processes (2.5), some shortcomings need to be addressed to make them more robust and to not leave room for loopholes.

Draft delegated act	ECN amendments
1. The bio-waste that is used for anaerobic digestion or composting is source segregated and collected separately. Where bio-waste is collected in biodegradable bags, the bags have the appropriate compostable certification standard EN 13432:2000.	1. The bio-waste that is used for anaerobic digestion or composting is source segregated and collected separately, **with the exclusion of separate collection systems which are carried out via conventional plastic bags**. Where bio-waste is collected in biodegradable bags, the bags have to be certified according an

	appropriate standard, which guarantees the degradation of the bags within the biological treatment process

First, ECN calls for the introduction of a complete ban on the utilisation of conventional plastic bags to collect biowaste as a general criterion. Where the system allows the biowaste to be collected with certified biodegradable bags, these shall also be suitable for the degradation under anaerobic conditions, which must be added to the technical screening criterion number 1. Anaerobic digestion is included as one of the best available techniques (BAT) for the biological treatment of the organic waste stream and must be recognised as such. A revision of the EN 13432 is needed to guarantee that the different biological treatment techniques (aerobic & anaerobic), which are present for the biological treatment of separately collected bio-waste, are respected.

Draft delegated act	ECN amendments
2. In these anaerobic digestion plants, source segregated bio-waste from separate collection constitutes at least 70% of the input feedstock, measured in weight, as an annual average. Co-digestion may cover up to 30% of the input feedstock of advanced bioenergy feedstock listed in Annex IX to Directive (EU) 2018/2001, which may not include contaminated feedstock coming from biomass fraction of mixed municipal and industrial waste. The input does not include feedstock excluded in Part II of Annex II to Regulation (EU) 2019/1009, for Component Material Category (CMC) 3 (Compost) in accordance with point (c) of that category and for Component Material Category (CMC) 5 (Digestate other than fresh crop digestate) in accordance with point (c) of that category.	~~2. In these anaerobic digestion plants, source segregated bio-waste from separate collection constitutes at least 70% of the input feedstock, measured in weight, as an annual average. Co-digestion may cover up to 30% of the input feedstock of advanced bioenergy feedstock listed in Annex IX to Directive (EU) 2018/2001, which may not include contaminated feedstock coming from biomass fraction of mixed municipal and industrial waste. The input does not include feedstock excluded in Part II of Annex II to Regulation (EU) 2019/1009, for Component Material Category (CMC) 3 (Compost) in accordance with point (c) of that category and for Component Material Category (CMC) 5 (Digestate other than fresh crop digestate) in accordance with point (c) of that category.~~

Criterion number 2 proposing a 70/30 ratio of biowaste to other input material for anaerobic digestion is not acceptable. It can be environmentally sustainable as well to recycle more than 30 % of other organic materials such as manure, other agricultural residues, and food industry residues (including sludges from the food processing industry) in composting and anaerobic digestion plants. For the environment, it is better to treat manure instantly

(capture the greenhouse gases) than to put it in storage (emission of greenhouse gases). It has to be taken into account as well that the availability of input materials differs from one region to another.

ECN calls to delete the reference to the Renewable Energy Directive (RED) since national legislation allows different input materials which are suitable for organic recycling in composting and anaerobic digestion plants.

In addition, the reference to the EU Fertilising Products Regulation (FPR) 2019/1009 has to be deleted, as the EU FPR foresees an optional harmonisation for placing CE marked fertilising products on the European market. Fertilising products and as well compost and digestate can be placed according to national regulations on the national markets. Compost and digestate are mainly dealt as local products on a regional level.

Draft delegated act	ECN amendments
3. The activity produces one of the following: (a) compost or digestate complying with Regulation (EU) 2019/1009, in particular with requirements of Annex II on the Component Material Categories (CMC), referring specifically to CMC 3 (Compost) and CMC 5 (Digestate other than fresh crop digestate) or with national rules on fertilisers or soil improvers, with equal or stricter requirements compared to those of Regulation 2019/1009; (b) chemicals through the conversion of organic waste to carboxylates, carboxylic acids or polymers by fermentation with mixed cultures.	3. The activity produces ~~one of the following:~~ (a) compost or digestate complying with Regulation (EU) 2019/1009, in particular with requirements of Annex II on the Component Material Categories (CMC), referring specifically to CMC 3 (Compost) and CMC 5 (Digestate other than fresh crop digestate) **or with national rules on fertilisers or soil improvers**~~, with equal or stricter requirements compared to those of Regulation 2019/1009~~; **And, as additional products:** (b) chemicals through the conversion of organic waste to carboxylates, carboxylic acids or polymers by fermentation with mixed cultures. **After the recovery of such chemicals, the residual biomass must be converted through composting or AD and not landfilled or incinerated.**

Criterion 2.5.3(a) should not restrict the inclusion of composting and anaerobic digestion activities just to those complying with national rules equal or stricter than the FPR creating obligations that only a fully harmonised regulation would meet. Some of the national legislations regulating fertilisers are only partially harmonised with the FPR, but should

nonetheless be considered in the scope. Also, following a sustainable approach, the residual biomass originating from the production of chemicals (2.5.3(b)) shall be recovered through organic recycling (composting and anaerobic digestion) instead of being landfilled or incinerated.

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4. Quality assurance of the production process is performed using Module D1 set out in Regulation (EU) 2019/1009.	4. Quality assurance of the production process for compost and digestate should be performed by national or European-wide acknowledged quality assurance schemes for compost and digestate.

In order to support the manufacture of quality compost and digestate across Europe, ECN has established a benchmark for quality assurance schemes for compost and digestate products across Europe by developing a pan-European quality assurance scheme for compost and digestate (ECN-QAS) in cooperation with the national quality assurance organisations for compost and digestate.

Over the last 30 years, several quality assurance schemes for compost and digestate have been implemented on a national level which controls the input material, the production process and the final quality of compost and digestate**.**

Restricting the quality assurance to the conformity assessment procedures using the Module D1 set out in the EU FPR (2019/1009) will exclude the 'recovery of bio-waste by anaerobic digestion or composting' from the EU Taxonomy.

Draft delegated act	ECN amendments
5. Compost and digestate complying with Regulation (EU) 2019/1009 or equivalent national rules is not landfilled. The digestate is preferably composted after anaerobic digestion to maximise benefits to the soil it is applied to afterwards, and minimises some potential agro-environmental issues such as release of ammonia and nitrates.	5. Compost and digestate **from source segregated or separately collected biowaste and other organic materials (agricultural and food industry residues)** complying with Regulation (EU) 2019/1009 or ~~equivalent~~ **with** national rules is not landfilled. ~~The digestate is preferably composted after anaerobic digestion to maximise benefits to the soil it is applied to afterwards, and minimises some potential agro-~~

	~~environmental issues such as release of ammonia and nitrates.~~

Technical criterion 5 suggests that digestate has to be composted after anaerobic digestion as the preferred option to maximise benefits to the soil and minimise potential issues related to nitrate leakage. ECN proposes to delete this paragraph as it is not always possible or useful or even better to compost digestate. It depends on the anaerobic digestion process, the input material, the specific pedoclimatic conditions and the intended use of the digestate. A lot of treatment steps are necessary before a wet digestate can be composted. Other treatment options can be more interesting (from an economical and/or environmental point of view) such as drying and the production of concentrates.

Therefore, the request to post-compost digestate should be deleted. It should be respected that several EU countries have consolidated practices to apply digestate directly to the soil and to use other post-processing methods (like drying and pelletising of digestate).

About the ECN

The ECN is the leading European membership organisation promoting sustainable recycling practices by composting and anaerobic digestion of organic resources and guarding over the quality and safe use of the recovered organic fertilisers and soil improvers. With 67 members from 28 European Countries ECN represents more than 4500 experts and plant operators with more than 48 million tonnes of biological waste treatment capacity.

About the ECN-QAS

Since 2012 the ECN-QAS is registered as Trade Mark at the European Register of Community Marks for certified quality assurance organisations, facilitating quality assurance of compost and digestate products (OHIM 2012/210: TM No 011007168).

The ECN-QAS includes the characterisation of quality standards for recycled organic resources (compost and digestate) with the aim of facilitating the free cross-border movement of goods within the EU. The ECN-QAS, sets out requirements for national quality assurance organisations, process management and compost and digestate quality criteria. The ECN-QAS sets a common basis for existing quality schemes in Europe and can be considered as an example to support Member States to define quality standards and develop their own quality assurance scheme for composts and digestate. The requirements for quality assurance organisation are based on EN 17065 and the ECN-QAS requirements were taken up as well in the Module 1 of the EU Fertilising Products Regulation.

According to ECN's latest survey in 2021, 71 million tonnes per annum (tpa) of separately collected bio-waste were treated through composting and anaerobic digestion (60 million tpa in the EU27 and 11 million in CH, NO and UK). An estimated 21.1 million tpa of compost was produced, with an overall fertiliser value 864 million EURO. This amount of compost replaces around 170 kt nitrogen (N), 63 kt phosphorus (as P2O4) and 100 kt potassium (as K2O) per year.

Twenty-five percent of all compost produced in the EU27, CH, NO and UK was certified to the ECN's Quality Assurance Scheme (5.3 million tpa out of a total of 21.7 million tpa).

Source: ECN Data Report 2022