

# Summary of ECN's 2022 data report: 20 Years of the European Compost Network and Biowaste Management in Europe

**20 years after the European Compost Network (ECN) was founded, the ECN is recognised as an authoritative voice for Europe's biological waste management sector by supporting the separate collection and high-quality recycling of organic resources. Today, the ECN represents more than 4.500 biological waste treatment plants (composting and anaerobic digestion) with a treatment capacity of over 48 million tonnes of bio-waste per year.**

Over this time and with the support of our members, we have followed several initiatives of the European Commission with the objective to introduce the separate collection of bio-waste across Europe and to recycle bio-waste into high-quality compost and digestate. Separate collection is a prerequisite for high-quality recycling, for turning waste into products.

With the adoption of Europe's Circular Economy Package, including the revisions to the waste directives and the new European Fertilising Product Regulation, the framework for a viable circular bioeconomy has been set. By 31 December 2023, EU member states are obliged to collect bio-waste separately (or recycle it at source), and starting July 16th 2022 compost and digestate can be placed as CE marked fertilising products on the European market.

But there is still a long way to go. The new ECN data report 2022 verifies that less than 40 million tonnes of municipal bio-waste are separately collected and processed into high-quality compost and digestate in Europe. This means that only 17 % of municipal solid waste is organically recycled through composting and anaerobic digestion. For reaching the overall recycling target of municipal waste of 65 % by 2035, there is a need to set further incentives to improve the separate collection and the biological management of bio-waste at European level.

ECN has recently requested to set a dedicated recycling target on separately collected municipal bio-waste and to propose a reduction target on the amount of disposed bio-waste in the residual waste, within the revision of the Waste Framework Directive.

Further, ECN looks forward to supporting the new initiatives within the EU Green Deal addressing climate change, restoring Europe's natural capital and biodiversity, supporting carbon farming practices and more resilient agricultural practices and finally keeping our soils healthy.

With our S.O.S. Soil initiative 'Save Organics in Soil', initiated by ECN's Vice-Chair Massimo Centemero in 2019, we raised awareness for soil health and we are happy that the Commission has introduced a

Soil Health Mission for Europe. We will support the Commission in implementing a Soil health Law by 2023.

The main findings of the new ECN Data report 2022 'Compost and Digestate for a Circular Bioeconomy' are summarised in the following paragraphs.

### **Bio-Waste Treatment**

In 2019/2020 an estimated 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). These estimates included both municipal and commercial/industrial bio-wastes. Composting accounted for 42 million tpa (59%), whilst anaerobic digestion (AD) accounted for 29 million tpa (41%). The data refers to bio-waste as defined in the European Union Waste Framework Directive (EU 2018/851) and therefore excludes mechanical biological treatment processes, agricultural wastes/products, and sewage sludges.

Looking at individual countries, there was a large variation in the amount of separately collected bio-waste treated per person, ranging from a minimum of 28 kg/capita/annum to a maximum of 328 kg/capita/annum. Overall, composting treated on average 72 kg/capita/annum and AD 48 kg/capita/annum. Green, garden and food waste were the dominant feedstocks at composting sites, whilst food waste and 'other' non-specified wastes dominated at AD sites.

Waste from municipal sources has been targeted by European policy makers with minimum recycling and re-use targets having been set for certain material streams, including bio-waste. A total of 47 million tonnes of municipal bio-waste was found to have been composted and anaerobically digested in the EU27, CH, NO & UK. Of this, 38 million tpa was in the EU27, with 70% sent for composting and 30% sent for anaerobic digestion; an amount equivalent to 17% of the total municipal solid waste fraction.

### **Composting and Anaerobic Digestion Plants**

There were an estimated 5,800 bio-waste treatment facilities in the EU27, CH, NO & UK, with 3,800 (66%) being composting and 2,000 (34%) being anaerobic digestion plants. On average, each composting facility treated 8,000 tpa of bio-waste, whilst each AD facility treated 13,000 tpa. Similarly, each composting facility was found to serve approximately 120,000 people, whilst every AD facility serves 225,000 people. These differences probably reflect the differing levels of automation and economies of scale for the two different treatment types.

In terms of bio-waste, 88% of composting facilities treated solely bio-waste, whilst 48% of AD facilities treated only bio-waste and no other feedstocks. Although the integration of AD and composting treatments is now being recognised as an environmentally beneficial means of processing food waste, the survey only found that 5% of composting facilities treated anaerobic digestate at co-located facilities. This fraction is anticipated to increase in future years.

### Markets

An estimated 21.1 million tpa of compost was produced, with 17.6 M tpa of this being in the EU27. Agriculture was found to be the dominant market segment for both compost and anaerobic digestate, although sale prices were far below their theoretical potential, with digestate commanding either a zero or negative price (EUR 0 to minus 10 per tonne) and compost having a weighted average price of only EUR 10.1 per tonne (fresh mass) across all market sectors.

All European agricultural soils suffer from erosion, a situation that is partly due to the loss of organic matter over time as a result of unsustainable agricultural practices. Quality compost is recognised as an important soil improver, adding organic matter and helping to restore productivity. Overall, an estimated 2% of arable land and 16% of moderately/severely eroded agricultural land could benefit from compost application at 10 tonnes per hectare per annum. Presently, nine countries currently manufacture sufficient compost to apply to their moderately/severely water eroded agricultural soils; a finding that has important climate change and food security implications.

### Carbon sequestration in soil and fertiliser value

The EU27, CH, NO and UK currently sequester in the region of 1.2 million tonnes of carbon dioxide equivalents a year on agricultural soils, a value equivalent to just over 19 million urban tree seedlings grown for 10 years. When valued at a carbon dioxide trading value of EUR 80 per tonne of carbon dioxide equivalents, this was valued at 92 million EUR.

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). The total nutrient value (NPK) of ECN quality assured compost almost quadrupled over 15 months due to increases in inorganic fertiliser prices on the international markets. On average, one tonne of ECN certified quality compost contained nutrients valued at 63 EUR per tonne (fresh matter).

### Publication ECN Data Report 2022

The ECN Data Report 2022 'Compost and Digestate for a Circular Bioeconomy' will be presented at ECN's 20th Anniversary celebrated with the policy event 'Compost and Digestate in the Circular Economy: Healthy Soil for Healthy Life' hosted by MEP Sarah Wiener and co-organised by the European Parliament Intergroup 'Climate Change, Biodiversity and Sustainable Development' and ECN on 30 June 2022.

Further information here: <https://ebcd.org/events/online-event-compost-and-digestate-in-the-circular-bioeconomy-healthy-soil-for-healthy-life/>

You can download the report here: <https://www.compostnetwork.info/wordpress/wp-content/uploads/ECN-rapport-2022.pdf>

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## Join ECN and S.O.S. Save Organics in Soil

If you aren't yet on board, please join the ECN to make Europe's Circular Bioeconomy happen and please support our S.O.S. soil initiative 'Save Organics in Soil' as well. We are looking forward to supporting you in setting up a separate collection of bio-waste in your municipalities and cities and by placing high-quality compost and digestate-based products on the market.

## 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 66 members from 29 European Countries ECN represents more than 4500 experts and plant operators with more than 45 million tonnes of biological waste treatment capacity.