

# Bio-waste in the Circular Economy: From source separation to valuable resources

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A Green New Deal for Europe



# Overview

- The European Compost Network
- Status on Municipal Solid Waste (MSW) and Bio-waste Management in Europe
- The Waste Legislation on Bio-waste Recycling
  - The EU Waste Framework Directive (WFD)
  - Delegated acts on WFD
  - The EU Fertilising Product Regulation on the use of recycled organic materials (compost & digestate)



**ECN**

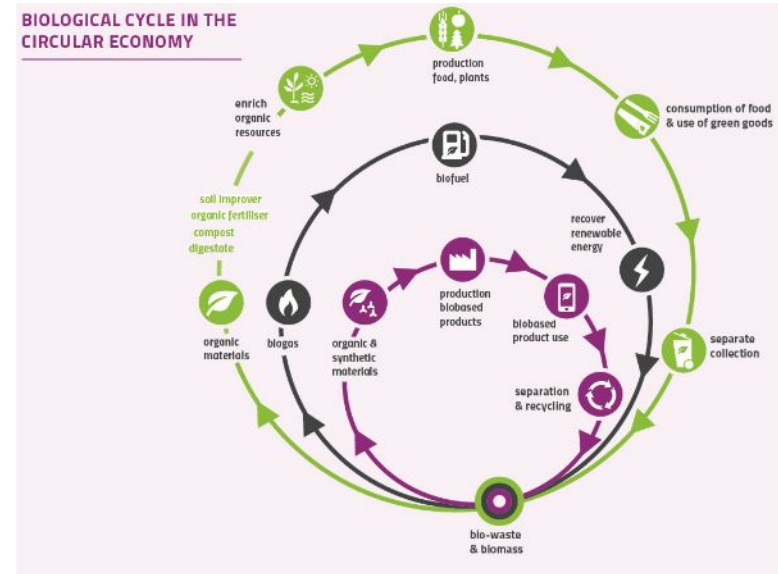
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# European Compost Network

## ECN's Vision

*“Living well within the limited resources of the planet and respecting the organic cycle”*

- ECN is the leading European membership organization
- Promoting sustainable recycling practices of organic resources: composting, anaerobic digestion...



63 members from 28 European countries

48 M tpa treatment capacities

4.500 treatment plants (composting & AD)

# European Compost Network

ECN's goals for the separate collection, biological treatment, production & use of quality compost and digestate :

**1. HARMONIZED LEGAL FRAMEWORK**

Achieve an EU legal framework

**2. MARKET DEVELOPMENT**

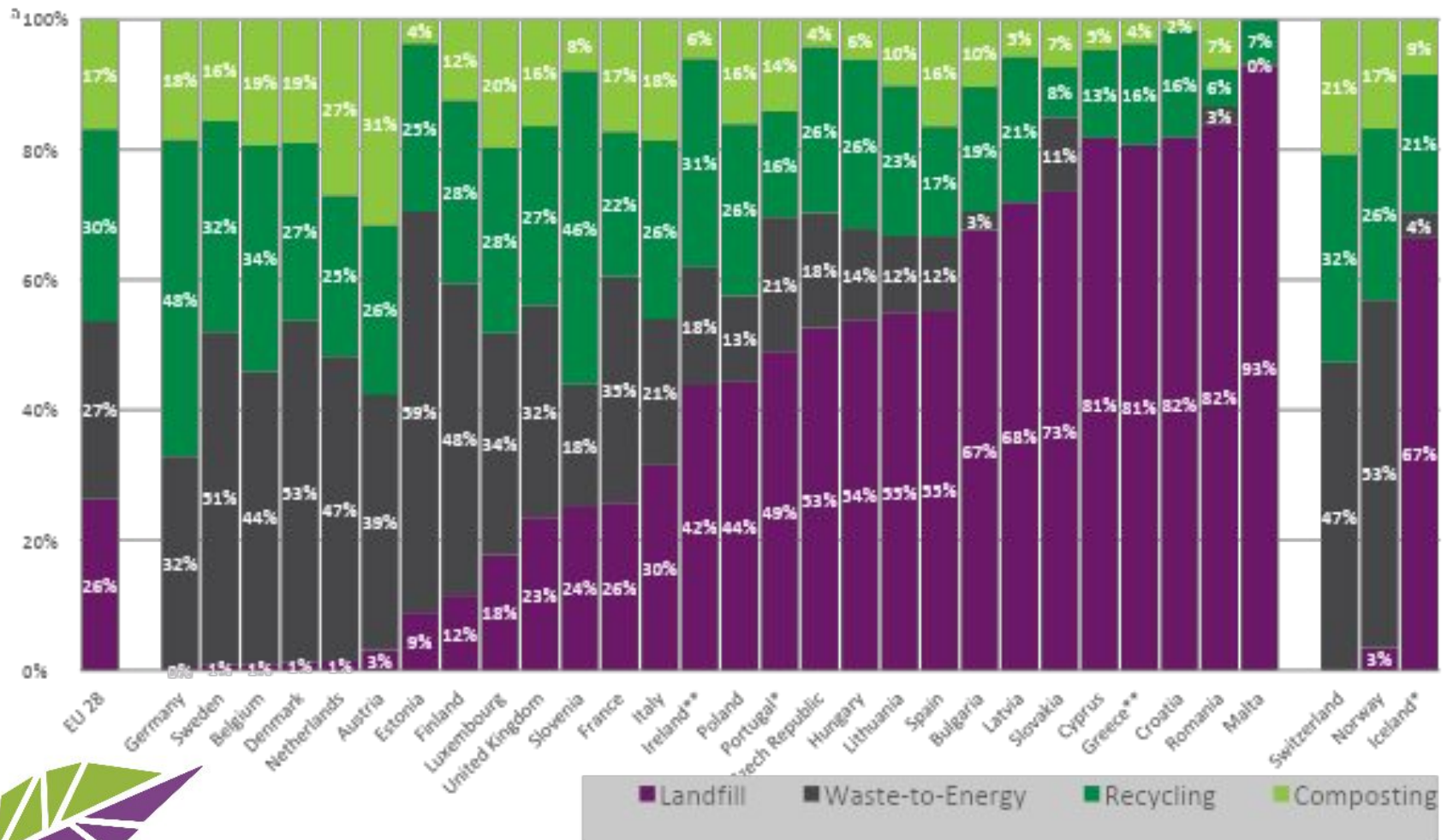
Achieve favorable market conditions across Europe

**3. IMPLEMENTING QUALITY ASSURANCE SCHEMES**

Achieve Europe wide implementation quality assurance schemes with ECN-QAS as a benchmark



# Status on MSW Management in Europe 2016



Source: EUROSTAT 2017

# Status on MSW & Bio-Waste Management in Europe

## EU Early Warning Report

- Early Warning Report for Member States at risk missing the 2020 target of 50% preparation for re-use / recycling for municipal waste published 2018

## Proposed actions

- More effective separate collection to ensure high quality recycling,
- Mandatory requirements to sort bio-waste,
- Measures to encourage households to sort bio-waste,
- Measures (incl. taxes) to phase out landfilling and other forms of residual waste treatment.



**Obligation: by 2020, 50 %  
by weight**

# State on Bio-Waste Management in Europe

## ECN Status Report 2019

### European Bio-Waste Management

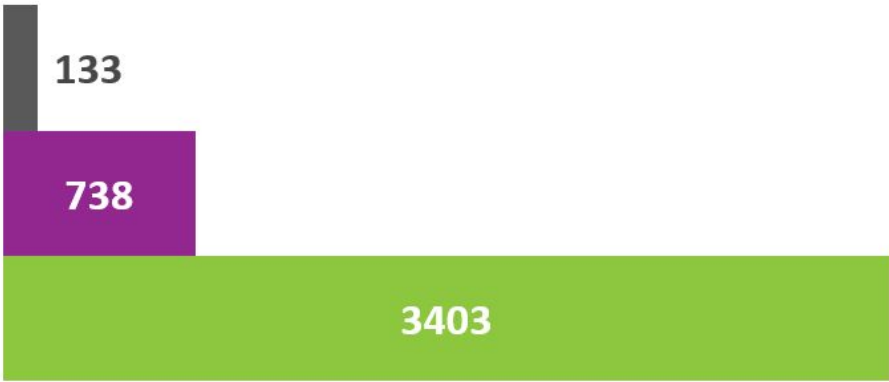
Overview of bio-waste collection,  
treatment & markets across Europe

- Published by ECN, supported by ISWA  
WG BTW
- Data reporting results from 18  
European countries

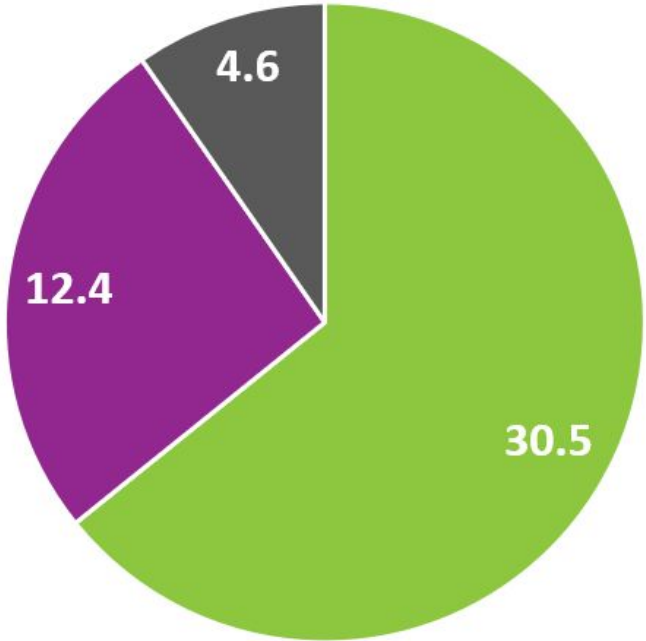


# State on Bio-Waste Management in Europe

**4274**  
Composting & AD bio-waste  
processing plants



**47,5 million tonnes**  
bio-waste composted / digested



■ Combined AD & Composting   ■ AD   ■ Composting

■ Composting  
■ AD  
■ Combined AD & Composting

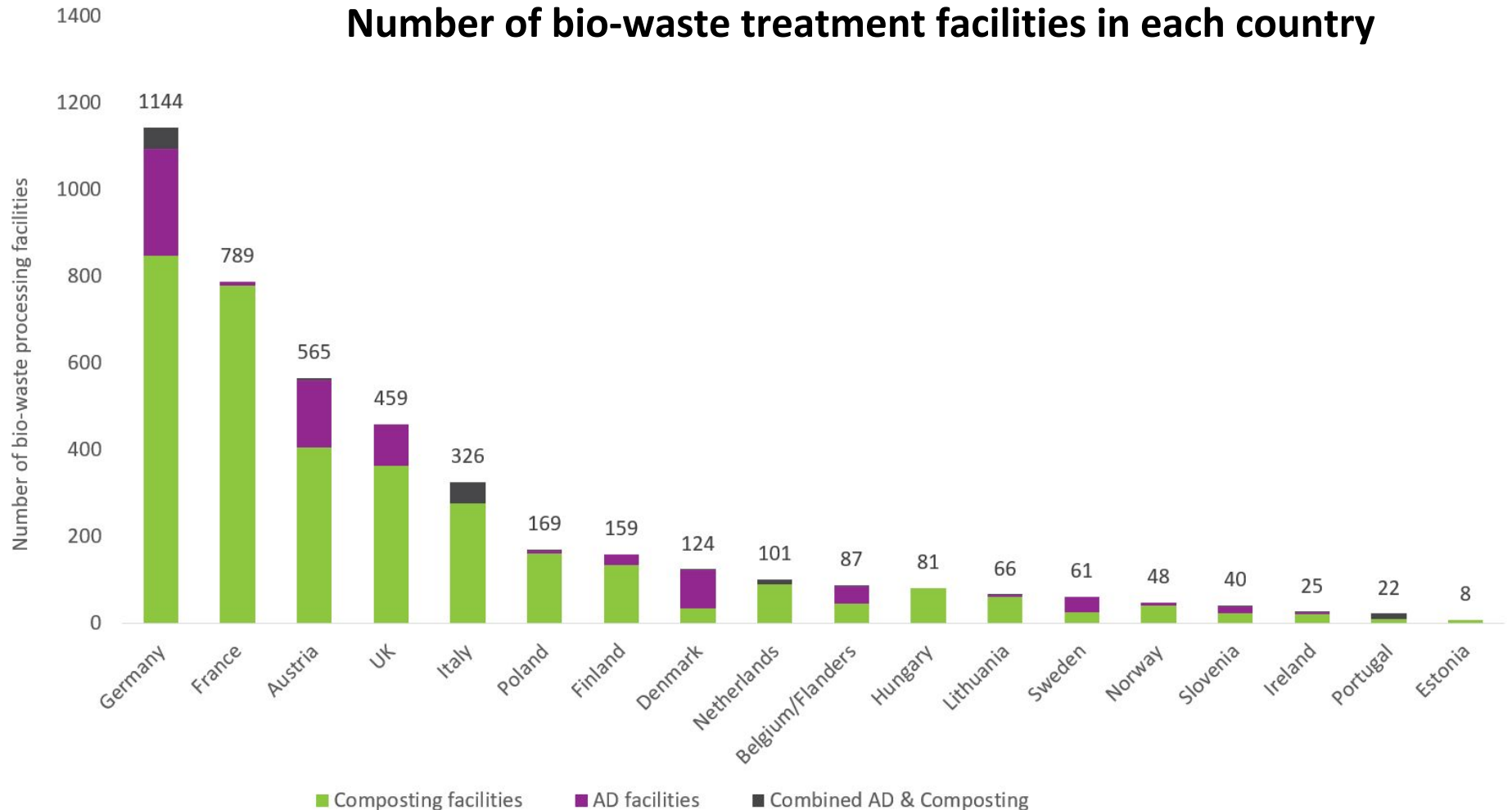


Source: ECN Status Report 2019, based on data from 18 European countries  
\* AT, BE, CH, DE, EE, FI, FR, HU, IE, IT, LT, NL, NO, PL, PT, SE, SI, UK



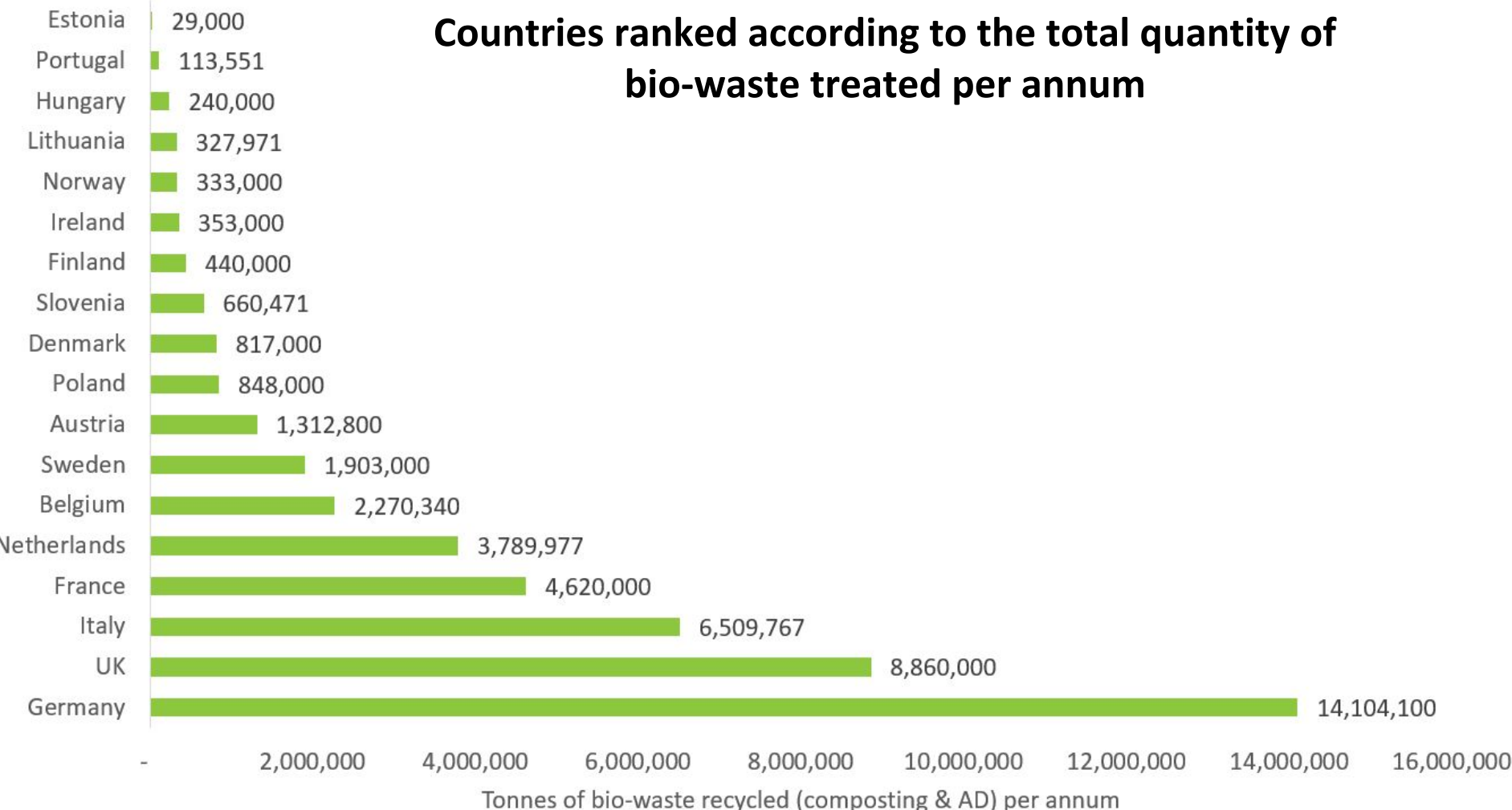
# State on Bio-Waste Management in Europe

## Number of bio-waste treatment facilities in each country



# State on Bio-Waste Management in Europe

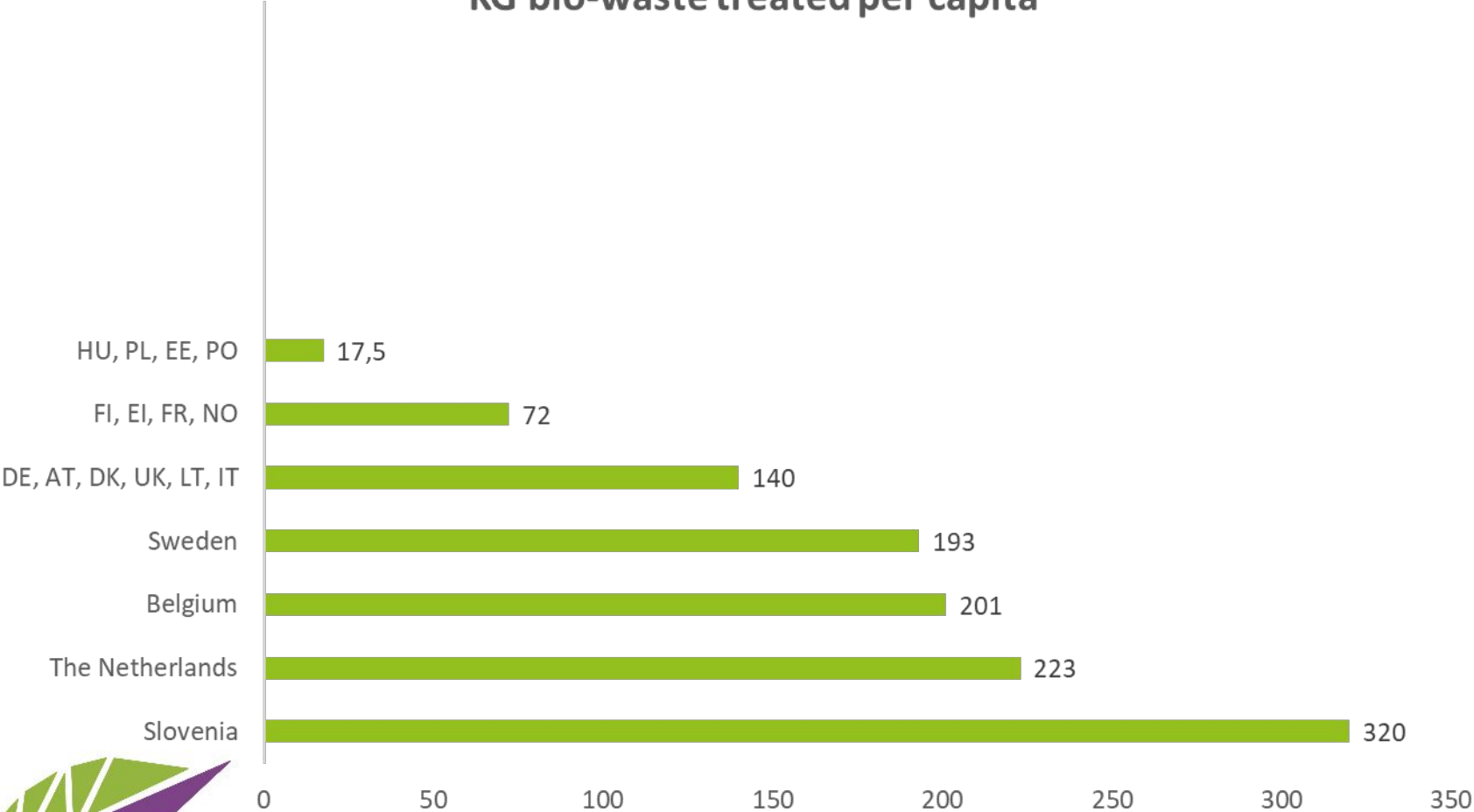
## Countries ranked according to the total quantity of bio-waste treated per annum



Source: ECN Status Report 2019, based on data from 18 European countries  
\* AT, BE, CH, DE, EE, FI, FR, HU, IE, IT, LT, NL, NO, PL, PT, SE, SI, UK

# State on Bio-Waste Management in Europe

KG bio-waste treated per capita



Source: ECN Status Report 2019, based on data from 18 European countries  
\* AT, BE, CH, DE, EE, FI, FR, HU, IE, IT, LT, NL, NO, PL, PT, SE, SI, UK

# Compost and Digestate Production

## 15.8 M Tonnes of Compost and Digestate



**11.7**

Million tonnes of  
compost



**4.1**

Million tonnes of  
digestate

### Nutrients



**129**

Thousand tonnes of  
**NITROGEN RECYCLED**



**42**

Thousand tonnes of  
**PHOSPHATE RECYCLED**

(Theoretical estimates)

### Carbon

**3.5**

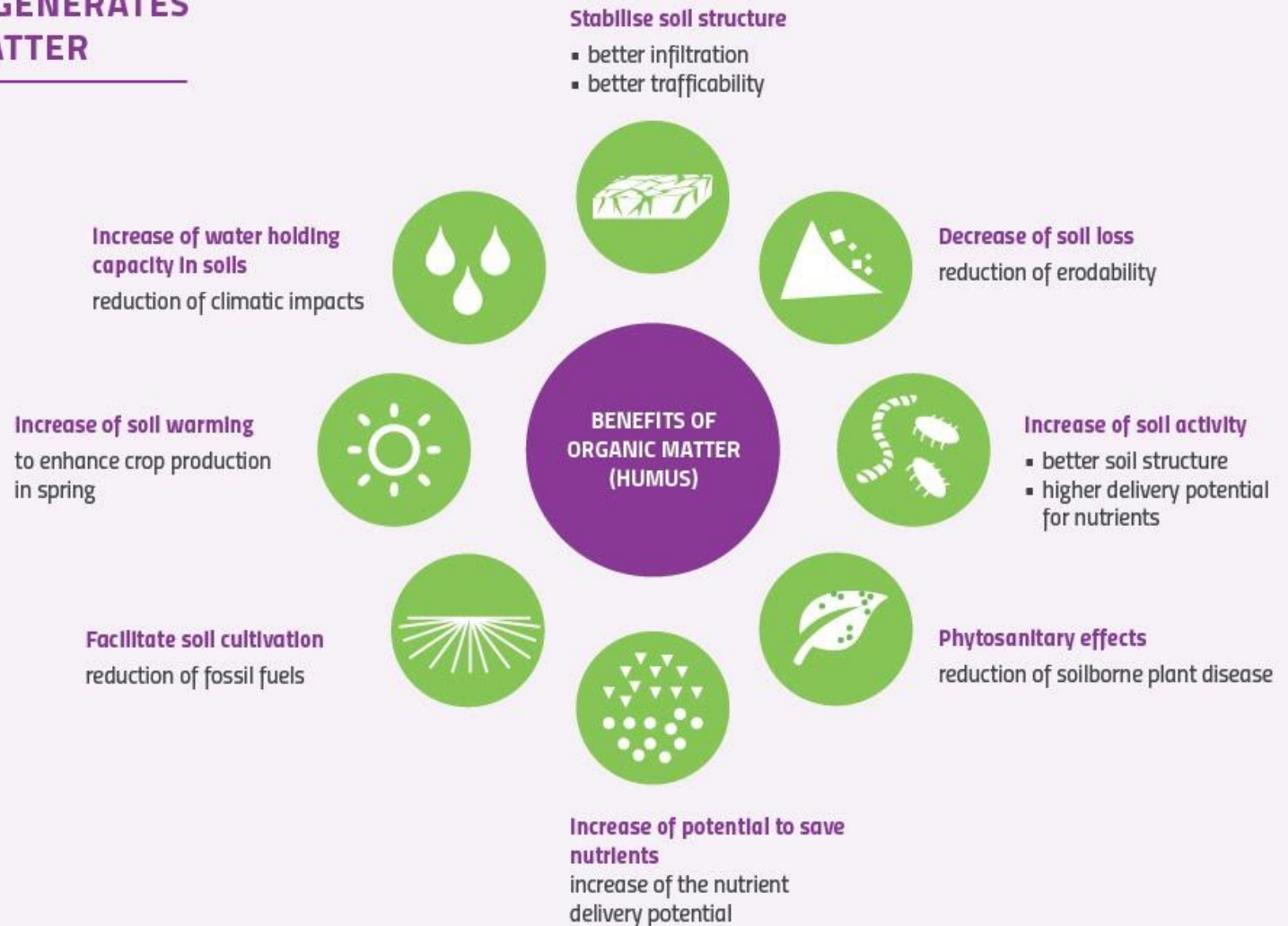
Million tonnes  
(dry mass) organic  
carbon recycled

**1.8**

Million tonnes  
(dry mass) humic  
substances recycled

# Benefits of Carbon Recycling with Compost

## BIO-WASTE GENERATES ORGANIC MATTER

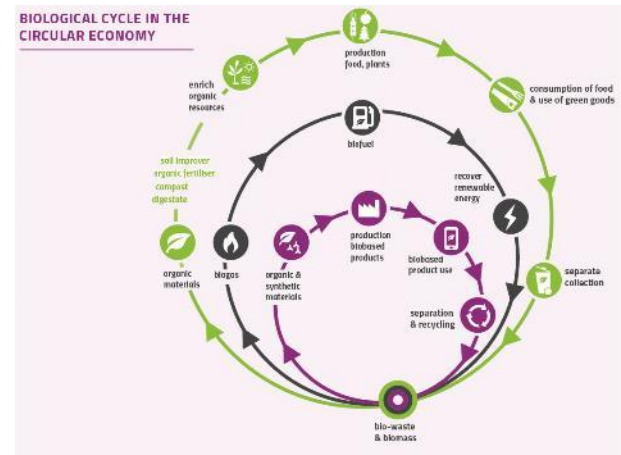


# The Waste Legislation on Bio-Waste Recycling

## The EU Circular Economy

### Goals

- Reduction of waste production in Europe
- Promoting recycling
- Saving primary resources



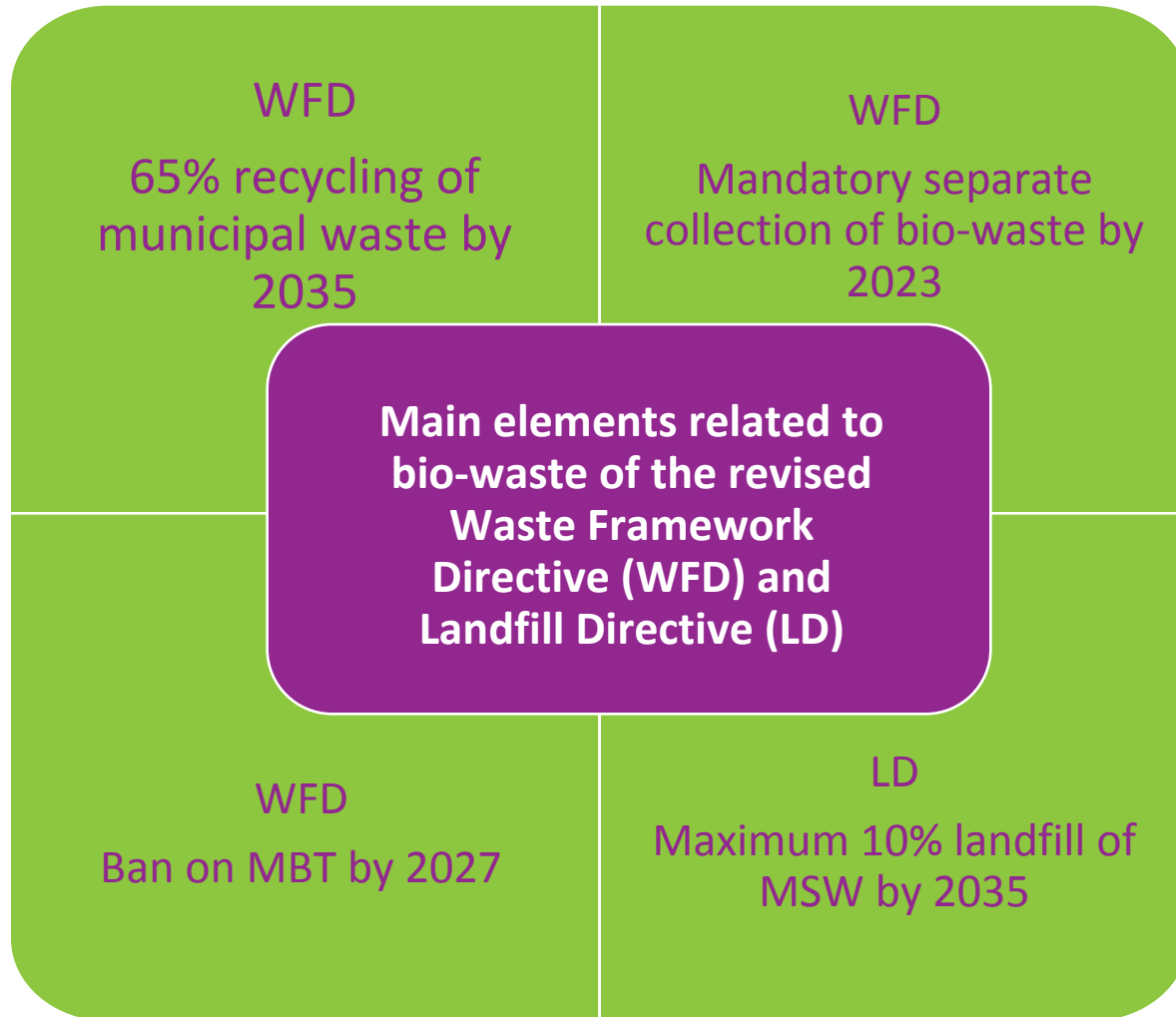
□ Revision of the Waste Framework Directive and Landfill Directive

- **Status: Adopted in 2018 and implementation in Member States**
- Establishing of markets for secondary products

□ Revision of the EU Fertilising Regulation

- **Status: Entered into force 15 July 2019 and implementation in Member States**

# The Waste Legislation on Bio-Waste Recycling



# Implementation decision on WFD

## Definitions (§1)

- **‘calculation point’** means the point where municipal waste materials enter the recycling operation whereby waste is reprocessed into products, materials or substances that are not waste or the point where waste materials cease to be waste as a result of a preparatory operation before being reprocessed;
- **‘municipal bio-waste separated and recycled at source’** means bio-waste that is recycled at the place where it is produced by the person who produce it.



**Separate collection**



**Separated and recycled at source**



# EU Fertilising Product Regulation

## Goals

1. **Boosting organic matter recycling** from biowaste
2. **Integrating organic fertilising products** into the scope of the FPR
3. Creating access to CE marking and **free trade for organic fertilising** products across EU

**Optional Harmonisation**, free choice to opt for compliance with national rules for fertilising products restricted to national markets or CE marked fertilisers with unrestricted access to EU market



**ECN**

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# Structure - EU Fertilising Product Regulation

Exhaustive list of  
Component  
Materials

Categories **CMC**  
**(11)**

- Quality
- Safety
- ...

**CMC 3 Compost**  
**CMCs 4 and 5 Digestate**

Exhaustive list of  
Product Function  
Categories

**PFC (7)**

- Quality
- Safety
- Declaration
- ...

**PFC 1 A. Organic fertiliser**  
**PFC 3 A. Organic Soil Improver**  
**PFC 4 Growing Media**

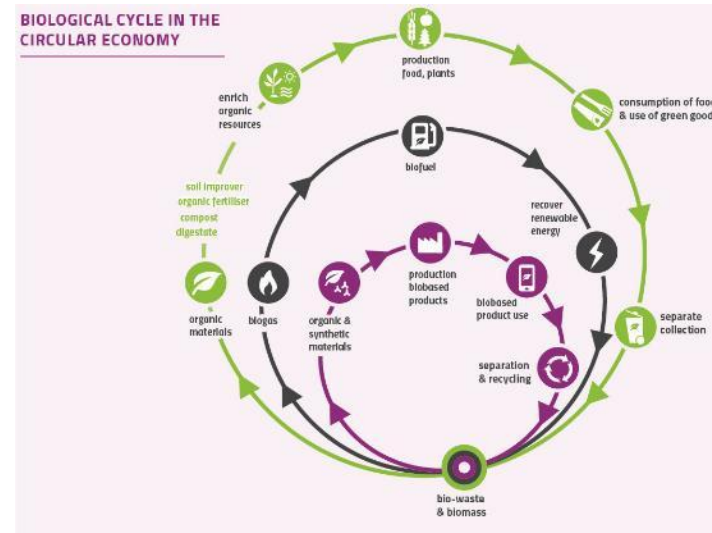
Conformity  
assessment  
procedure related  
to 'CMC/PFC'  
combination

- Modul A - D1
- Declaration of conformity

**Modul D.1**  
**External Quality**  
**Assurance of**  
**Process and Products**

# Perspectives

- With the adoption of the revised waste legislations and the EU Fertilising Product regulation **the way is paved towards a circular bioeconomy in Europe.**
- Sustainable bio-waste management will play a key role in **Europe's nascent circular economy.**
- **Member states** have to start with **implementation of separate collection and treatment of bio-waste.**
- High quality recycling is a pre-condition for **placing compost- and digestate-products on the European Markets**



# Information

## ECN Status Report 2019 – European Biowaste Management

Download:

[www.compostnetwork.info](http://www.compostnetwork.info)

Thank you for your  
attention!



**ECN STATUS REPORT 2019**  
**EUROPEAN BIO-WASTE MANAGEMENT**

**Overview of Bio-Waste Collection,  
Treatment & Markets Across Europe**

The diagram is a circular flow chart showing the lifecycle of bio-waste. It starts with 'production (food, plants)' at the top, leading to 'consumption of food & use of green goods'. From there, it goes to 'separate collection', then 'bio-waste & biomass'. This leads to 'separation & recycling', which branches into 'organic & synthetic materials' and 'recover renewable energy'. 'Organic & synthetic materials' leads to 'biogas' and 'organic materials'. 'Biogas' leads to 'soil improver organic fertilizer compost digestate', which then leads to 'enrich organic resources' and back to 'production (food, plants)'. 'Organic materials' leads to 'production bio-based products', which leads to 'biobased product use', then 'separation & recycling', and finally back to 'bio-waste & biomass'.

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European Compost Network e.V.