

European Compost Network ECN

## EU End-of-Waste EoW Regulation and its Significance for Treatment Options, Quality and Markets for Compost and Digestate



Josef Barth, European Compost Network ECN

www.compostnetwork.info Vilnius 2011

European Compost Network ECN

## Why End-of-waste EoW?

European Commission want to have a Europe as a Recycling Society where resources are efficiently used. Recycling rate 50% and more!  
Recycled former waste materials should find their **European wide markets as products.**

The EU Waste Framework Directive (2008) explicitly mentions compost as EoW candidate:  
*Biodegradable Waste is one of the possible categories of waste for which 'end-of-waste' specifications and criteria should be developed.*

The Commission's Joint Research Centre JRC was contracted in 2007 to develop a methodology for end-of-waste requirements for several waste streams including biodegradable waste/Compost

www.compostnetwork.info Vilnius 2011

European Compost Network ECN

## Why End-of-Waste for compost?

EC's Communication on future steps in biowaste management in the European Union says:

- **Compost and digestate from bio-waste are under-used materials.** While offering an excellent contribution to EU resource efficiency and to the improvement of carbondepleted soils, in many Member States demand **suffers from a lack of end-user confidence.**
- **Standards for compost and digestate should be established** to enable their **free circulation on the internal market and to allow using them without further monitoring** and control of the soils on which they are used.

The "end of waste" procedure under the WFD could be the most efficient way of setting such standards."

www.compostnetwork.info Vilnius 2011

European Compost Network ECN

## Common view of European producers of Bio-waste Recycling to Compost and Digestate

### Creating confidence in the quality is key



Separate collection of organic waste  
**Clean source**

Quality Assurance  
**CERTIFIERAD ATERVINNING**  
**= External!! control**

Quality Compost & digestate fit for use  
**Product status**

www.compostnetwork.info Vilnius 2011

European Compost Network ECN

## Methodology of EoW

**Purpose of end-of-waste criteria**

- to further encourage recycling in the EU by creating legal certainty and
- to remove unnecessary administrative burdens

**End-of-waste criteria for**

- Input materials,
- Processes and Techniques
- Product quality requirements,
- Quality control procedures

**End-of-waste principle**  
The waste ends to be waste when a useful and safe product is placed on the market.

There is **only one product** standard for all Member States.

www.compostnetwork.info Vilnius 2011

European Compost Network ECN

## A: Input Material Requirements

**There will be a positive list for suitable input material based on the European Waste Catalogue**

In 2011 European wide analysis (FATE-COMES) of treated organic wastes with 170 organic waste samples from bio-, green compost, mechanical biological treatment, mixed waste compost and sludge on heavy metals and 10 groups of organic pollutants:

**First results from FATE-COMES indicate:**

- Heavy metals **are much higher** in sludge compost and essentially much higher in MBT material.
- Organic pollutants (PoPs) are **10 to 100 times higher** compared to other materials (mainly from flame retardents.).

FATE-Comes results are NOT representative but **for the moment** on account **precautionary reasons** for end-of-waste JRC/IPTS will. **EXCLUDE** sewage sludge and MBT/Mixed waste as input material

The EoW Paper says: *Clean, biodegradable wastes are the only wastes allowed to be used for end-of-waste compost.* Unfortunately **no special reference to separate collection** (=clean) is in the EoW-text.

www.compostnetwork.info Vilnius 2011

**Specific DIGESTATE EoW requirements**

- Digestates will implemented fully in the current EoW methodology for compost.
- No chance to have a separate regulation or something at a later stage when we know more on digestate properties
- The EoW's definition includes "biodegradable waste" and focuses on waste treatment plants. In this respect **MANURE after a digestion process** is included in EoW because it is "Waste".

www.compostnetwork.info Vilnius 2011

**B. Temperature-time sanitisation requirements for process technique**

Based on an overview list of time-temperature requirements in the individual MS, a set of three Allowable time-temperature profiles could be:

- 65 ° C or more for at least 5 days -
- 60 ° C or more for at least 7 days -
- 55 ° C or more for at least 14 days

In addition: Member States can permit other temperature-time profiles if they have shown effectiveness for sanitisation.

**For digestate the latest proposal is: 55° C for 24 h and 20 days hydraulic retention time in the reactor.**

www.compostnetwork.info Vilnius 2011

**C. EoW Criteria Compost & Digestate for Products Fit-for-Use**

Parameter	Value
Minimum organic matter content	15 % in weight
Minimum stability /maturity	Only declaration (?)
Content of pathogens	Salmonella sp.and/or E.Coli
Limited content of viable weeds and plant propagules	2 per litre
Limited content of plastic, glass & metals (no proposal for stones)	0.5 % of dry matter weight
<b>Heavy metals and organic pollutants</b>	mg/kg dry weight
Zn	600
Cu	300
Ni	50
Cd	1.5
Pb	120
Hg	1
Cr	100
Currently no proposal for organic pollutants	-

B) Cu & Zn can be also seen as trace-nutrients.

www.compostnetwork.info Vilnius 2011

**Proposal for Lithuanian Quality Categories**

KAT I – suitable for use in agriculture,  
 KAT II – should be used for energy crop production only,  
 KAT III – should be used for non-agricultural land recultivation only.

Kat.	Cd	Pb	Hg	Cr	Zn	Cu	Ni	As
I	≤0.7	≤45	≤0.4	≤70	≤200	≤70	≤25	≤10
II	≤1.3	≤130	≤1.0	≤100	≤400	≤110	≤40	≤15
III	≤3.0	≤180	≤2.0	≤120	≤600	≤300	≤60	≤25
EoW	1,5	120	1,0	100	600	300	50	-

www.compostnetwork.info Vilnius 2011

**D. Requirements on quality assurance**

**No End-of-waste for material which has NOT undergone any quality assurance.**

A suitable quality management system for compost & digestate is expected to include:

- acceptance of input materials;
- monitoring of processes (sanitisation)
- monitoring product quality (including sampling and analysis)
- record keeping of main quality control parameters;
- training of staff ....

www.compostnetwork.info Vilnius 2011

**A European Approach for QAS**

**No end-of-waste standards without control!**

Summary of European QAS experiences and success stories transferred into a proposal for a European Scheme for composts (and digestate) products

=

**European Compost Network Quality Assurance System**

www.compostnetwork.info Vilnius 2011



### EoW next steps after last meeting

After the October meeting of the European Technical Working Group there is now an additional short consultation period until 11. January 2012.


Final End-of-Waste document which will be handed over by Joint Research Centre to the Commission beginning 2012.

Then the Comitology decision procedure starts.

**By the end of 2012/beginning 2013 EoW for compost and digestate is intended to be ready for decision in the EU Parliament.**



www.compostnetwork.info Vilnius 2011



### Effects of End-of-Waste on national Biowaste Treatment and Policy


**Legislation:** EoW will create a European definition for good COMPOST QUALITY - important for legislators

**Image:** The quality compost PRODUCT will get a better image, low qualities a negative image


**Market:** Customer (e.g. farmers) will ask for EoW compost. The market for waste compost will become more difficult.

**Technology:** Tenders will require EoW. Biowaste recycling options which don't meet EoW can become second choice

**Use of Compost:** Organic fertiliser requirements will include End-of-Waste in the new EU Fertiliser Regulation



www.compostnetwork.info Vilnius 2011




### Conclusion

EU End-of-Waste Standards for compost will support the idea of compost as a PRODUCT – not WASTE

Open European markets for compost production in (and between) the Member States

End-of-waste standard will be a superior product standard which never causes risks to humans and environment.

Composted mixed/stabilised organic waste is excluded.



www.compostnetwork.info Vilnius 2011



### Thank you!

European Compost Network ECN e.V.  
Executive Director Josef Barth  
Net: [www.compostnetwork.info](http://www.compostnetwork.info)  
Email: [barth@www.compostnetwork.info](mailto:barth@www.compostnetwork.info)



www.compostnetwork.info Vilnius 2011